Hesper paints the Goddes, preceded by Necessity, holding Nails and Wedges in her Hands, with a Cramp-iron, and melting Lead to it; rarely accompanied by Felicity, and the almighty Deliverer of the afflicted. Faith never fails to depart with her, as well as Friends. The Painters represent her in a Woman's Habit, with a Bandage on her Head, because she is only the wife without the ceremony; standing as a Wheel, to express her Facility and Speed.

The Romans, says Lucianus, represented her with a Cornucopia, and the Helm of a Ship, to show that she dripped her Wealth into the Hands of her Subjects. Sometimes she is also depicted as a woman sitting on a Dolphin, t'is with such Characters, that we see her represented on so many Medals, with the Inscriptions, FOR TUNA AUG. FOR TUNA REDUX. FOR TUNA AUG. or REDUX. She is so frequently seen, that she is a Nation without a Name, and a State without a Country. The word is often used by the poets, as in the case of Sophocles, who says, "Tell me the name of this City, the History of this People, and the Reason of this Happy State," and in the case of the Roman poets, as in the case of Virgil, who says, "Tell me the name of this City, the History of this People, and the Reason of this Happy State.

The Romans had a Male, and Female Fortune for the Queen of their Gods, and Adoration; and Fortune was represented by Women, and the Fortuna Matronalis, by the Women. On the Reverence of a Medal of Commodus, we have a Representation of Fortune, under the Glory, or Sun, of Mars, and the Matrona, or Matron, representing a Lady by the Reins. On the Greek Medals we meet with Apollo, and Ka Tyth. Good Fortune. Conflation gave the Epithet Ambigua, i.e. ond gifts, to the Fortune of his new City Constantinople.

FORUM, in Antiquity, is used in divers Acceptations. Sometimes for a Place of Negociation, or Merchandizing, and used by the Romans, as the Forum Romanum, or the Forum Boarium, where the people used to sell their Goods. Sometimes is the word being from a Globe before her Feet, with a Scipio in one Hand, holding the Cornucopia in the other.

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In this was an Apartment, call'd the Rofers, where the Lawyers pleaded; the Officers harangued; Funeral Orations were delivered, &c. See Rortri. In the same Forum was the Consulium, or Hall of Judicil, where the Judges of the City, the Senate, the Emperor, &c. See Comitia. Forum is also used among Caitiffis, &c. for Jurisdiction. Thus, the Place of the Forum is the Outer Forum, i.e. in the City, or the Common Court of Justice; in the Forum Consistens, or the Inner Forum, i.e. in the Eye of God, or a Man's own Conscience.

In this is the most eminent of these, the Forum Romanum, bear the name of Forum Vetus, and absolutely Forum, or the Forum. In this was an Apartment, call'd the Rofers, where the Lawyers pleaded; the Officers harangued; Funeral Orations were delivered, &c. See Rortri. In the same Forum was the Consulium, or Hall of Judicil, where the Judges of the City, the Senate, the Emperor, &c. See Comitia. Forum is also used among Caitiffis, &c. for Jurisdiction. Thus, the Place of the Forum is the Outer Forum, i.e. in the City, or the Common Court of Justice; in the Forum Consistens, or the Inner Forum, i.e. in the Eye of God, or a Man's own Conscience.

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Foss, in Anatomy, a kind of a Cavity in a Bone, with a large Aperture, but no Exit, or Perforation. When the Aperture is very narro, it is called a Sinus. In the Cranium there are five internal, and fourteen external Fossis. The Cavities of the Orbit, which contains the Eye, is a Foss. Foss are particularly used for a Cavity, or Denture in the Back Part of the Neck. See Neck. Foss-Way, was anciently one of the four great Highways of England; so call'd, because in some Places it was never perverted, but left as a great Ditch. See Way, &c. see Watling Street.

FOSSA Magna, or Natatrixis, is an oblong Cavity, forming the Innde of the Pudendum Matronalis, and peculiar to the Woman; open anteriorly, and closed upon the Middle whereof are the Carunculae Myrtiformes. See Fudemen. FOSSA, in our ancient Cutilums, was a Ditch, full of Water, where Women, committing Fecundity, were drown'd; but Men only may be drown'd. Nam et ipsius ennis tenenaca putem omne ab autum legebatur feminino, videlicet fossam, fissuram, forcas, &c. &c. See Ferca.

In another sense, it is taken for a Grave, as appears by these old Verses: He jacet in Fossi Bisti generalis effa. He eff fistus, qui l'est tect catedrastic.
FOUS

Place, or by the Salts of the Earth, they have been pre-
erved entirely, and sometimes petrified. See Deluge.

Others think, that their Shells, found at the Tops of the highest Mountains of the Earth, are the same with the Shells that have been rejected by the Waters, even of the Deluge; insomuch as most of these aquatic Animals, by reason of the Weight of their Shells, always remain at the Bottom of the Water, and never move but when they are dead.

They imagine, that a Year's Continuance of the Waters of the Deluge, intermixed with the salt Waters of the Sea, upon the Surface of the Earth, might well give occasion to the Shells of all Water Animals to be petrified. See Climate.

And that the universal Silt, or Dust, of the Water was the real Cause of their Reformation with the Sea Shells. The Lakes form'd by the Recretion of Rain, or Spring Water, are likewise supposed to be the Disciple of these things.

Others, that the Waters of the Sea, and the Ri-
vers, with those which fell from Heaven, tarn'd the whole Surface of the Earth upside down; after the same manner as the Waters of the Deluge fell down into a Sandy Bottom over all their Sands, and even the Earth itself, in their Swellings and Inundations: And that in this General Submersion, the Shells come to be in-

But no body has set this Sentiment in a better Light than Dr. Woodward, in his Nat. History of the Earth. That Ingenious Author maintains the whole Mass of Earth, with every thing belonging thereto, has been so formed, and divided, from the Earth itself, as if it had been a Pond. That a new Earth was form'd in the Boform of the Pond of Darkness, as it is termed in Scripture, for Stra, or Beds of terrestrial Matter, range over each other, according to the Order of their specific Gravities. See also Woodward, by this: By this Plan, Plants, Animals, and espe-
cially, Fishes, and Shells, not yet form'd in this Manner, remain'd mix'd and blended among the Mineral, and Fo-
fii Matters; which prefer'd them, or at least suffum'd and render'd the Figures and Inceptions, either indented, or in Relief.

Cammarina attacks this Sentiment of Dr. Woodward, and goes yet higher. He supposes 2d That the greatest part of the Sea-shells are grown Franklin, or strangers, were there before the Deluge, that is, at the Time of the Cre-
ation, when God separated the Earth from Waters. 3d That without having recourse to the Deluge of the Earth by the Waters, no Shells have been form'd, which appear'd in the Chalks and Gravices naturally happening after the Waters were retir'd, and the Earth sufficiently drain'd. 4th That particular Inundations might have swept most of these Shells into the Places where we now find them. 5th That the Sea may have wrought, or cast up most of these Shells through subterraneous Spiralanes and Canals. 6th That Goths, Romans, and divers Story and Metaline Bodies, per-
celike the Vegetables and Animals, we see on Earth, and in the Sea.

To all these Suppositions, Dr. Woodward answers. 1st That it is not possible to enumerate the Species, and therefore should create such a Number of Shell-fish of the same Species, and as many cases as there are with a Defn to deftory them all again so soon after. That among the various Shells, in the Sister species, is, easy to di-
minate them from the first. They appear precisely such as we now find them in the Spring, and the Season when the Deluge began: That it is only Shells, we find under Ground, but alive Bones of Quadrupeds, Plants, and Trees of extraordinary Sizes; and some of the Species of Aquatics. And lastly, that the Waters were separated from the Earth on the third Day; and that none of these Things were created, till afterwards. 2th. That, on the con-
trary, the Shells are so various, and of so great a number of Species, and so far from being regularly divided, that they have been the subject of various and extraordinary Inundations: That they could never have brought Shells, Stags Horns, and Elephants from America, and the Eof.

Indeed, to England and other Parts of Europe: Nor those Pines and Beeches so frequently found far great being so readily, and nor horizontally, as they are always found: That we should sometimes find them in the Clefts of the Earth, of which there is none but where they are broken. 3th. That by the Supposition, there is no improbable coincidence with any particular Inundations: That they could never have brought Shells, Stags Horns, and Elephants from America, and the Ever Greener, to England and other Parts of Europe, and there the Pines and Beeches so frequently found far great being so readily, and nor horizontally, as they are always found: That we should sometimes find them in the Clefts of the Earth, of which there is none but where they are broken.

The Foundation is properly so much of the Mafony, as reaches as high as the Surface of the Ground; and is always to be proportion'd to the Load, or Weight of the Building it is to bear.

Sometimes it is massy, and continued under the whole Building; as in the antique Arches, and Aqueducts, and some of the Roman Foundations. Sometimes it is composed of shorter Intervals; either to avoid Expense, or because the Vacancies are at too great a distance, in which case they make use of ill formed Pillars, bound together by Arches.

As to the Foundation of Archetro, we must first examine the Bed of Earth, upon which we are to build; and then the Under-cielings, or Sub全国人民, as the Antients call'd it. For the former, we have a general Precept in Vitruvius, Subterranei Fundamentse fudacen, foundationes insuiadis ad fitidem in fiaso: By which he recommends not only a diligent, but even jealous Examination of what the Soil will bear; advising us not to rely upon any apparent

ity, unless the whole Mafony thro which we can have likewise been solid. But how deep should we go in this Search, he has no where determined, as perhaps depending more on Dissension, than Regularity, according to the Weight of the Building which is to be raised thereon, and the Struktur Rule; allowing for the Cavassine, i.e. hollowing or under-
digging, a sixth Part of the Height of the whole Fabric, unless there be Cellars under Ground, in which case he would have a Foundation.

Sir H. Warden's Law of Archi-
tecture.

The Foundations of Buildings are either Natural, or Ar-

tificial.

Natural, as when we build on a Rock, or a very solid Earth, in which case we need not seek for any further Strengthening.

But, if the Ground be sandy, or marshy, or have large been dug; in such case recourse must be had to Art. In the former Case, the Architect must adjust the Depth of the Foundation by the Height, Weight, &c. of the Building; A fixed Line on the Height is look'd as a Medium; And as to Thickness, double that of the Width of the Wall, is a good Rule.

Where the Natural Foundation may not be trusted, they either fortify the Ground by Pellamging, i.e. driving it full of Piles, see Palls; or else take large Cables or Planks at the Bottom of the Trenches, dug for the Foundation.
FOU (53)

In some Places they found the Peers of Bridges, and other Buildings near the Water, on Sacks of Wood, laid like Mat- 
trares, which being well paved, and gravelly, will never give 
way, nor rot in Water.

Reformation is also used for the Establishment of a City, 
or Empire.

The Romans reckoned their Years from the Foundation 
of Rome, Ab Urbe Condita; which we sometimes express by 
all the Roman Emperors. See Year, from the falling out of 
Egypt, to the Foundation of Rome. See Foundation.

Foundation is also a Donation, or Legacy, either in 
Money, or Lands, for the Maintenance and Support of some 
College, or University. See College, Library, &c. Among the 
Order of Angelici, there is a Foundation for the marrying 
of poor Maids; and another for the furnishing 
of Trumpets to poor People, who have Ruptures, or 
Hernias.

FOUNDER. He who lays a Foundation, or who founds 
and endows a Church, School, Religious House, or other 
Work of Charity and Piety. See Foundation.

The Founders of Churches may perhaps to themselves 
the Right of Patronage, or Presentation to the Living. See 
Patronage.

FOUNDER, is also an Artill that molts, or casts Metals into 
various Forms, for divers Uses; as Guns, Bellas, Statues, 
Bombs, Types, or Printing Characters, and other small Works, 
as Candlesticks, Bits, Buckles, &c.

A Foundry is a French foundry, molting, or melting. In the 
Roman Law they are called Funtunari.

From the different Productions, or Works of the Founder, 
they are differently denominated, as Founders of Iron Works; 
Bronze Founders; Silver Founders; and even Carriers, or 
Statuaries.

What belongs to each, see under the Article Founder.

FOUNDER, in the Sea Language; A Ship is said to found 
or founder when it sinks, or is drowned. When a Ship is 
Sea breaking in upon her, she is to be filled with Water, that 
she cannot be freed of it; nor is the able to swim under it, 
but sinks with the Weight of her own Load.

In the Manage, a Disorder in Horses, where 
of there are two Kinds, viz. in the Feets, and in the Chest.

Foundering in the Feet, arises from hard Riding, sore 
Labour, great Heat, sudden Cold, &c., which inflame the 
Muscles, and Grapes of the Skins, and distend them with the 
Feet, and there sette; which causes such a Numhebres, 
and pricking in the Hoof, that the Horse has no Sense or 
Feeling in it. Therefore it is necessary to keep them clean 
when they do, flaking and trembling, as if he had an Ague.

A Horse may likewise be foundered by wearing Shrait 
Shoes, and travelling upon hard Ground.

It may be known when he is founder'd on his Forefeet, 
and not his Hindfeet, by his treading only on his Hindfeet, 
and sparing the other; or his going crouching and 
crushing on his Buttocks.

Sometimes he doth it as it were, he is founder'd on his Hindfeet, 
and not his Fore; which is known by his seeming weak 
behind, and refting as much as pothile on the Forefeet.

The general Methods of curing this Distemper, are first 
by paring all the sores and ulcers, and then applying 
of the Cream of Tartar, of which they may be 
seen; then bledding him well at every Toe; opping 
the Vein with Tallow and Roffin; and having tuck'd 
how Shoa on his Feet, opping them with Den, Tar, 
and Tallow, as boiling hot as may be; which is to be done 
oonce in two Days, for a Week together; after which he is 
to have good Exercise.

Or, after he is pared thin, and blood at the Toes, his Feet are to be wet with Cows Dung, Kitchen Feet Tar, 
and Soot boil'd together, and pour'd boiling hot into them.

Foundering in the Body, beholds a Horse by eating too much 
Provender suddenly, when too hot; as also by drinking 
of upon traveling, when he is hot, and riding 
after it.

The Effect of which, is, that his Body is oppres'd with 
Hottun, which take away his Strength, and put in 
of the Bed of the Head, that he can neither see, nor bow his Joints, 
and being once laid, cannot rise again, &c. His Legs swell; 
and soon after begin to pect: He has a Dry Cough, which makes his Eyes watery; his Nose runs with white phlegma.

FOUNDRY, or FounDRY, the Art of melting and 
casting all sorts of Metals, particularly Brains, Iron, 
Bell Metal, Brass, Gilt, &c. See Metal, Bell Metal, 
Gilt, &c.

The Word is also use'd for a Place, or Work-house, furnish'd 
with Furnaces, or Forges for this Purpose. See Furnace.

FOUNDRY of Small Works, or the Manner of Casting 
in Sand.

The Sand used by the FounDRY; in casting of Brains, &c. is 
whitewash'd, permeated, and good of body; but after it has 
been used, becomes quite bick, by reason of the Charcoal Dust

us'd in the Mould. Every time they would use this Sand, 
they work it several times over in a Board about a foot square, plac'd over a kind of Tray of Slate or Plate, into 
which it may fall from the Board. This Tewing is form- 
ful'd with a Roller, or Cylinder, about two foot long, 
and a little wider than the Board, and it is then rolled 
over the Blade of a Sword; With these two Instruments they 
alternately roll and cut the Sand, and at length turn it 
down into the Box under nearly.

Wooden Record, or Table, of a Length and Breadth 
proportional to the Quantity of Things to be cast; 
round this they put a Frame, or Ledge, and thus 
make a form of Mould. The Mould they fill with the Sand 
before they lay their Pattern or Wooden Work. Then, once 
they take wooden, or metaline Models, or Patterns of the Things 
tended to be cast; apply them on the Mould, and 
press them down into the Sand, so as to leave their Form 
dimmed. Along the Mould, where the Pattern is laid has 
several Iron Rods of Braft, which is to be the Master Jett, or 
Bard of Running the Metal; being so disposed as to touch the Ledge at on end, and only to reach to the last Pattern on the other.

From this are plac'd several Ledge Jets, or Branches, reach- 
ing to each Pattern, whereby the Mould is convey'd thro' 
the whole Frame.

This first Frame thus form'd, they turn it upside down, 
to take out the Patterns from the Sand; in order to which 
they first loosen them a little all round, with a small cutting 
Infrument.

And in the same manner they proceed to work the Coun-
ter Part, or other Half of the Mould, with the fame Pat- 
terns, in a Frame exactly like the former; excepting that it 
has Pins, which piercing Holes, corresponding there in the 
Mould, serve to hold the Pattern, and when the Moulds, 
other the Cavities of the Pattern fall exactly on each other.

The Frame thus moudled, is carried to the Founder, or 
Moulder, who after engraving the principal Jett, or Canal of 
the Mould, makes it fit to the latter Pattern, or Pattern of 
Crot Jets, or Canals to the several Patterns in both, and 
Springing them over with Mill Dull, lets them in dry in a 
Furnace.

When both Parts of the Mould are sufficiently dry'd, 
they join them together, by means of the Pins; and 
to prevent their flaring or slipping aside by the Force of the 
Metal, which is to come in flaming hot thro' a Hole con- 
trived through one of the Jett, or some other Piece, 
either with Screws; or, if the Mould be too big, with 
Wedges.

The Moulds thus put in Fruits, are rang'd near the 
Furnace, to be in Readiness, to receive the Metal as it comes 
out of the Crucible.

While the Moulds are thus preparing, the Metal is put in 
Pufion in an earthen Crucible, about ten Inches high, and 
four in Diameter.

The Furnace wherein the Pufion is made, is much like 
the Smith's Forge; having like that a Chimney, to carry off 
the Fire; and a pair of Bellows, to blow up the Fire; and 
a Massive, or a door to shut up the Fire, and a Crucible 
the Crucible place'd. Tis the Ufe of this Massive, that chiefly 
dilutes, and inflameth the Furnace from the Forge. See Forc.

In the Pufion House, the Crucible is chang'd every 
twelve Inches wide, which goes to the very Bottom. It is 
divided into two, by one Iron Grate: The Upper Partition serves 
to hold the Crucible and the Fuelle; and the lower, to re- 
ceive the Ashes.

When the Fuelle, which is to be of dry Wood, is pretty 
well lighted, they put the Crucible full of Metal in the Mid-
dle, and cover it with an earthen Lid: And to increase the 
Force of the Fire, before blowing it up with the Bellows, 
they lay a Tile over part of the Aperture or Cavity of the 
Furnace.

The Metal being brought to a State, they fill the Cru-
ic with a piece of Braft, beaten in a Mortar. To put them 
in, they make use of a kind of Iron Ladle, with a long 
Shank at the End thereof, form'd into a kind of hollow Cy-
dliner, out of which the Band is drop'd. See Furnace.

The Crucible, when the Band is drop'd into the Crucible 
out of the Fire, and carry it in a Pair of Iron 
Tongs (whose Feet are bent, the better to embrace the 
Top of the Crucible) to the Mould; into which he pours it, 
through the Hole answering to the Master Jett of each Mould.

Thus he goes successively from one to another, till his 
Moulds are all fill'd, or his Band is compiled, or there is not Matter enough left for another Mould.

Then, callling cold Water on the Moulds; they take the 
Furnaces out of the Pufions, and the Crucible works out of 
the Sand, which they work again for another Casting. 
Lastly, they take off all the Sand from the Moulds, and 
are ready, or work'd up, to be cast upon by the Work to 
whom they beloowed, without any further repairing.
The Art of Casting Statues in Brass, is a very antient; in
foundry. It is a piece of work not without some inconvenience in the
Recollect many of our statues being copied from those of the
the Research of Pirani, an Author admirably skill'd at dif-
coveting the Inventors of other Arts.
All we can learn for certain, is, that it was practised in all
provinces of Greece, and afterwards a-
among the Romans: And that the Number of Statues con-ected to the Gods and Heros, surpass'd all Bellet.
The single Cities of Athens, Delphi, Rome, &c. had
each their Statues; and Marcus Scullmus, the only Edile,
...the Circle with no less than 5000 Statues of Brass, for the time of the
Condition of the Game.
The reason the Brass was not cast out of such a Pitch, that it
...it became a Proverb, That in Rome the People of Brass were
not less numeros than the Roman People.
Among the usages, the casting of Statues was but little known,
...and it seems to have been stated in the Chinese Chronicles.
As to the Casting of Galleys, it is quite Modern; and it were
perhaps to be wish'd, we were as ignorant of its Antec-
ences as the Authors agree, that the first Canon were call'd in
...the Year 1598; and others to 1380. See Canon, Ordonnance,

The Casting of Galleys is of a middle Standing, between
the other two.
The Ule of Bellis is certainly very antient in the Western
Church; and the fame were likewise us'd in the Church of
Greece, and Egypt. From the Account of the Chinese, and from
his second Account of Egypt, he had found but one Bell in all
the Eastern Churches, and that in a Monastery in the up-
per Egypt. See Bell.

The casting of large Works is rarely any simple
Metal, but commonly a Mixture of several, as Brass, Bell
Metal, &c. We shall here give the Proceeds in the Foundary
of each.

Method of casting Statues, or Figures.

There are three things chiefly requisite in the casting of
Statues, Bush, Battell, and Softness, and other Works of
Sealing and Moulding. The Mould, Wax, or Shell or Core.
The mould, or core, (thus call'd from Core, as being in the
Heart, or Middle of the Statue) is a rude, lumpish Fine,
a little larger than the Statue itself. It is rais'd
...the Iron Grate, strong enough to suffer it; but is
throughout with small bars or Bars of Iron.
It may be made indifferently of two sorts of Matter, at the
Discretion of the Workman, viz. Forres Earth mixed up with
Horlos Dung and Hair; or of Piaffier of Paroys,
mixed with fine Brick Dust.
The Ule of the Mould in Statues is to lefen the Weight,
and to keep the Powder up and the inside, and serves
the vacant Space where the Clapper is hang'd. In
Great Gums it forms the whole Barrel, from the Mould to
the Breche; And in Mottars, the Barrel, and Chamber.
The Wax is a Reproduction of the intended Statue in
Wax.
If it be a piece of Sculpture, the Wax must be all of
the Sculpitor's own Hand, who usually fashions it on the
Model, and the Model itself is a large piece of Iron; the Wax
meanted, or form'd on a Model, and afterwards dispos'd and
arrange'd on the Iron of the Mould, as before; fill-
ing the vacant Space with fine Liquid Plaifie, and
brick Dust; by which means the Mould, or Core is
form'd in Proportion as the Sculptor carries on the Wax.
When the Wax (which is to be the intended Thicknes
of the Metal) is suff'd, they set little waxen Tubbs peri-
cularly to it, from Top to Bottom; to serve both as
Jets for the Conveyance of the Metal to all Parts of the
Work, and as Vent Holes, to give Passages to the Air, which
would suffocate the Wax had it not been for them. A
Mould casted in this manner will encompass it by the
Weight of the Wax us'd herein, is that of the Metal adjusted; ten Pounds of
this last us'd being to One Pound of the former.
The Work brought thus far, waxes nothing but to be cover'd with its Shell; which is a kind of Coat, or Crust
laid over the Wax; and which being of a soft Matter, and
...the Mould, upon taking the Place of the Wax between the
Shell and the Mould.
The Mould of this Inner Core, or Shell, is varied ac-
cording to different Lays, or Strata are to be made. The Erift is
a Composition of pure and old Crushible well ground, and
...painterly, they apply it with a Pincel, laying it seven or eight times over; letting it dry
betwixt whiles. For the second Impression they add Horlos's
Dung, and natural Earth to the former Composition; the
third Impression is only Horlos Dung and Earth. Lastly,
the Shell is finish'd by laying on several more Impressions of
this last Mould made very thick with the Hand.

The Mould is cover'd with several layers of
...by several Banks or Glits of Iron would amount, by a Foot's Distance from one another, and fall'd at Bottom to the
Grave under the Statue, and stop to a Circle of Iron, when
the Coals have consum'd.
Here it must be observ'd, that if the Statue be so large,
...it wouldn't be easy to move the Mould when thus prov-
ded, it must be wrought on the Spot where it is to be cast. In such Cases, the Mould, as usual, is dug under Ground, much bigger than the Mould to be made
therein, and its Indoes lined with Walls of Free-
tone or Brick. At the Bottom is made a Hole of the
...the Square Pit is made another large Mould to melt the Metal, as
hereafter mention'd.
In the other way, it is sufficient to work the Mould above
Grave; but with the meantime of a Replication of a Mould and
Grave underneath. When suffi'd, four Walls are to be run
up round about it; and by the Side thereof a Massive made for
a melting Furnace.
For the rest, the Method is the same in both.
The Mould being finish'd and includ'd between four Walls,
whether under Ground, or above it; a moderate Fire is
lighted in the Furnace underneath; and the Hole cover'd with
Plaifie, and the Shell cover'd with a Skin of Clay, as the
...pipes contriv'd for the purpose at the Foot of the Mould,
which are afterwards very exactly level'd with Earth,
as soon as all the Wax is carry'd off.

The casting of small works is more difficult, with Bricks thrown in at
random, and the Fire in the Furnace augmented, till such
time as both the Bricks and the Mould become red hot;
which ordinarily happen in 24 Hours. Then, the Fire be-
ing to cool, they let the Moulds be open'd, and take out the
Bricks, and fill up their Place with Earth, moss'd in,
and a little beaten, to the Top of the Mould, in order to make it
the more firm and itself, which is call'd Bounding.

The Moulds, therefore, remains nothing but to melt the Metal,
and run it into the Mould.
This is the Office of the Furnace above; which is made
in manner of an Oven, with three Apertures; one to put
the Wood, another for a Vent, and a third to run the
Metal out at.
From this last Aperture, which is kept very
...the Mould, the Feet are cast, and put into the
Moulds, and let them run into the Moulds, which
...all the Branches of the Jets, which are to carry
the Metal into all the Parts of the Mould, is injured.

It is true that these Jets are all terminated, or
stop'd with a kind of Plugs, which are keep'd close, that
upon opening the Furnace, the Bricks, which gushes out like a
Torrent of Fire, may not enter any of them, till the Cobol
be suffer'd to cool a little; and then let them be perfectly
introduced into the Moulds. Upon which occasion they pull out the Plugs, which are
long Iron Rods, with a Head at one End capable of filling the
whole Diameter of each Tube. The Hole of the Furt-
mance is made in the middle, and the Mould
infill'd in an Angle.
The Work is now finish'd, at least so much as belongs to
the Casting; the rest being the Sculptor's Care or Barnett
who, taking the Figure out of the Mould and Earth, it
is encompass'd withal, saws off the Jets wherewith it
appears cover'd over, and repairs it with instruments proper
to his Art, as Chisels, Gravers, Punches, &c.

Bell Foundry, or the Manner of casting Bells.

What has been hitheoro shewn of the Casting of
Statues, holds, in proportion, of the Casting of Bells: All
that is there particular in that latter, is as follows.
First, then, the Metal is different; there being no Tin in
the composition of it; but the composition is a Fifth Part
in that of Bells. Secondly, the Dimensions of the Mould, or
Core, and the Wax of Bells, especially if it be a King of
several Bells that is to be cast, are not left to Chance, or the
imagination of the workman, but are given by a Table of
Kinds, or Diapasons, which gives the Height, Ap-
erture, and Thickness necessary for the several Tones re-
qured.

It is not to be added, that 'tis on the Wax, that the fe-
ceral Mouldings, and other Ornaments and Inscriptions to
be represent'd in Relievo on the Outside of the Bell, are
forseen.

The Clapper, or Tongue, is not properly a Part of the
Bell, but is furnisht from other Hands.
In Europ'or, it is usuallv of Iron, with a large Head at
the Extreme, and is furnished in the Middle of the Bell.
In China it is only a huge wooden Mallet, struck by Force of Arm against the Bell: Whence they can have but little of the Corredercy so much admired in some of our Rings of Steel. The Chinese have an extraordinary way of increasing the Sound of the Bell, &c., by leaving a Hole under the Canon; which our Bell Founders would reckon a Defect.

The Proportions of our Bells differ very much from those of the Chinese. In ours, the modern Proportions are to make the Diameter fifteen times the Thickness of the ledge, and twelve times the Height.

The Manner of casting great Guns, or Pieces of Artillery.

The casting of Canons, Mortars, and other Pieces of Artillery is a work of as great a difficulty as that of Statues and Bells: Especially as to what regards the Mould, Wax, Shell, Furnaces, &c.

As to the Metal, it is somewhat different from both; as having at least three parts, viz. the Tin, which is not in that of Statues, and only having half the strength of the former, i.e. at the rate of ten Pound of Tin, to an hundred of Copper. A Canon is always shaped a little Conical, being thick of Metal at the mouth; where the greatest Effort of the Gunpowder is made; and the diminishing then to the Muscle; so that if the Mouth be two Inches thick of Metal, the Breech is six Inches mean, in Calippers, i.e. in Diameter of the Muscles; Six Inches at the Muscles require 10 Calipers, or ten Feet in length: There is about 2 2/3 of an Inch allowance for the Ball.

Letter Foundery, or the Manner of casting Printing Letters.

The Invention of Printing Letters was talked of under the Articles Painting, and Letters.

Their Difference, Kind, &c. has already been explain'd under the Articles Characters, &c.

But the following Particulars may be reguarded in the casting of Letters, are the Matter, and the Moulds.

The Matter is a Compound Metal; partly Copper, and partly Lead, mix'd in a certain Proportion, which every Foundry has its own Discretion, and to which he frequently adds a certain Quantity of Iron, Brass, or Mineral, as his Experience directs him, to render his Composition the harder.

The Proportion of the two Metals, is a hundred Pound of Lead to twenty or twenty five Pound of Brass. Some (the not the best Founders) use Iron, instead of Brass; in the Proportion of a hundred Pound of Lead, to thirty, or thirty five Parts of Iron.

These Metals are melted separately in large Crucibles; the Brass, or Iron with Antimony, and the Lead by itself. When in Fuson, they are mix'd together; This Fuson, and Moulds are the most laborious Parts of the Letter Founders Arr.

The Matrices of the Letters are Pieces of Copper, whereon the Impression of the intended Character has been cut, or burnt in Crucibles, by a sort of Punctures, &c. graven in Relief. See Matrices, Punchion, &c.

Each Letter has its proper Matrix, and there are particular ones for Joists, Vignolis, &c. Figures, Rutes, Head-pieces and other Ornaments of Printing; Excepting the Quadrats, which being only of Lead, and not intended to leave any Impression, are cast without Matrices, and only in Moulds; And each Matrice has its Punchion, made of Steel, or Iron, with which it is struck on Steel.

The Matrices being struck, and touch'd up, or repair'd, where needful, are put each at the End of an iron Mould, indeed between two thin pieces of Board, or two or three Inches long and broad, being cut off Sass, so as to compose an irregular Hexagon.

The principal Parts of the Moulds, which, as already mention'd, are hid between pieces of Wood; are the 1st. the Internal Moulds; and 2d. a Plate at a distance from the Board. 3d. Long Pieces. 3d. A Piece call'd the Blank, which is what properly forms the Body of the Character, and the Extemity whereof the Matrice is seize'd, and 4th. A Regulator, serving to receive and convey the Moulded Matter to the Matrice. 5th. A Regulator, serving to receive the two Parts of the Mould, after they have been open'd to take out the Letter, when cut.

On the Outside of the Moulds are three other Pieces, the Bow, at bottom, and two Hooks a top. The Bow is in thick Steel Wire, two or three Lines in Diameter; and eight or ten Inches long, being in a manner of a Bow, or Arch; whereas the lower piece of Wood is as it were the Chord, or String. One End is fasten'd to the Board, and the other, which is left at liberty, serves, by its Spring, or Elasticity to press and retain the Matrice of the Character against the Extremity of the Blank, where the melted Matter running in, makes the Impression.

The Hooks a top of the Mould are also of Wire, about the same Size with the Bow, and about an Inch and half long, being fasten'd, one to the other, by a Pin.

Their Use is, to open the Mould, and to take out the Character when cast, so that the Workman may not be incommoded with the Heat.

This is the principal thing belonging to the Mould; but would be thus disposed: they begin by casting the Matter.

The Furnace, whercon the Bafon is placed for the Metal to be melted in, is made of the same Matter as Crucibles, i.e. a mixture of Lead and Copper, or Iron, in Diameter. An iron Grate horizontally plac'd, divides it into two: The lower Part serves to hold the Ashes, and is furnis'd with a Hole to let in Air. The Wood is put in the upper Part, and the Grate serves to carry away the smoke and gaseous Matter. An earthen Pipe serves to carry off the Smack out at a Window, near which the Furnace is ordinarily plac'd. Lastly, a Stone, or wooden Stove serves to support the Furnace, and raise it to a proper Height for the Workman, to work handlings.

Over the Furnace is plac'd the Melting Bafon, or Copper. It is about nine Inches in Diameter, and takes up the whole Aperture a top; being even all 'round it, with Poters Earth. Its Matter is a kind of Pot Metal; and that it may be fit for melting both hard and soft Metals, it is divided into two equal Parts, by a perpendicular Partition.

The Melting of the Matter, or Metal, being done, the Mixturl or Composion made in the Crucibles above mention'd, a little Iron Ladle serveth to skim off the Scories or Impurities from the Surface of the melted Matter, and the Moltur or Scoriae are not all lost, but serveth to melt over again.

Two Workmen are usually employ'd at each Furnace. Each of them has his Part of the Bafon to empty; and they take the Alloyed Matter, and put it into a Crucible, where they lay the Characters as fast as they are cast.

To run the Metal into the Mould, the Founder holds it in his left Hand, and in his right a little Iron Ladle with a wide Handle, containing a little enough for one Letter Foundry. Having now fill'd this Ladle with liquid Metal, he pours it into the Jet, or Funnel, whole Aperture is in the Middle of the two Heads of the Mould; and thro' his Hand he leads it as it flows and runs in the Channel of the Matter into the Matrix of the Character; without which Motion might grow cold before it arrived there.

The Matter once cast into the Mould, and with one of the Hooks takes out the Character; and without loss of Time thaws it again, replaces the Matrice, and calls a new Letter. 'Tis incredible what Expedition and Address all this is done.

The Letter being cast, they view it, before they break off the Jet; to see whether it be perfect, otherwise to throw it among the Refuse of the Foundry.

When the Letter is found to be correct, it is broke off; the superfusious Metal occasion'd by the Mould's not being exactly closed, is taken off with a Knife; the long tail'd Letters, as s and f hollow'd at bottom, to give room for the Mallow of the next Letter, and to be broad at the Top.

With the same Knife they scrape the Letter, to smooth its two broadest Sides, or Faces, and fit them to be rub'd on the Stone. They take care only to rub those Sides, for fear of damaging a Notch on one of the other Sides, which is to be rub'd to the Sides to the Composer when he lets his Forms.

The Letters they grind them on, is a sort of hard, coarse-grained Freestone, plac'd horizontally, before which the Workman sits. To save his Fingers from the Friction, lo has a kind of Finger-balls, made of some old Piece of Leather, with which he covers the two Fingers next the Thumb. This Thumb is well crown'd with a broad Ring; and forwards and backwards: To shift Sides, he makes use of the Thumb, but without diminishing the Motion; so that the by-dander would easily be deix'd, and be ready to follow the other Side when required.

The Letters thus ground are plac'd on the Composer, to be fesd and brought to the proper Thickeness in the Sides, eza. that of the Notch, and its Opposite. They can be so brought in the Sides, by a little Lever.

The Composer is a wooden鲁fer, with a little Ledge at Bottom, against which the Letters are rang'd. On the same Inframint the Quadrats, Rutes, Borders, &c. are adjusted.

When the Letters are compos'd, they remain to be岌f, both as to Thickeness and Height. In order to this, they use a little Copper-plate, which is called a Leveler. The Justification, as to Thickeness, is made on a piece of Matter, and that for the Height, on an iron Composer. The Justification of the Height, is guided by the of some Body of Characters already justified.
Letters are laid to bend their \textit{inr} Height, when the Part of the Prince, or Level boat equally on the standard m placed on its own, in the little Composer, and on the face of two Letters of the same Size, and in the face of the Thickened, the justification is performed by laying the Standard Letter flat on the little Marble, and two new Letters aside of it, and so leveling the three, with the Plate. At the same Time the Plane is not ready the Letters, i.e. to cut the Foot, or rather hollow it, and make that part of Groove which every Letter has at bottom, precisely opposite to the Eye or upper Part, or Face of the Letter.

In all these three, they are in a state of being taken up down in the Justificator, which is an Instrument of polishing of Iron or Steel, consisting of two long Pieces, join'd together by Screws. Between these two, they enclose as many Letters as a page will contain, with all the Letters in the same Situation, as when composed for Books; excepting that the Faces in the former case is downwards, and the Foot a-top. When the Justificator is full of Letters, they let it on the Edge of the Plane, so that between the Plates of Wood; which seeing it very tight, enable the Workman to run his Plane along the Line of the Letters thus inverted.

This Plane consists of three Parts, two of Steel, and the third Wood. Of the Steel, the Letter, that at bottom consists of two moveable Steel Plates, which may be drawn closer, or farther off, at pleasure, by means of two Screws. Within the Interval between the two, they pass the Feet of the Letters from the Plane, and keep them from deranging.

The second Part of the Plane, answering to the Bit of Steel in the common Planes, consists of two Branches, and two Screws, which serve to raise or let down the Steel, as the Plane is to be mortised into each other. In the Middle of this piece of Steel, which is four or five Inches long, is almost perpendicular.

The last Part of the Plane, which is Wood, serves to join the Plane to the Plane of Wood, so that if the Plane is fall'n to the posterior Extreme of the Plates, and the other to the Branches, which carry the Bit of Steel: So that the three Parts together make a kind of Triangle, without a Basis.

The Cutter is a Steel Instrument, with a wooden Handle, in manner of a Child's; serving to pare off the rough Edge of the Letters when they are got ready.

These Letters are now fit for the Printer's Use. See \textit{PRINTING}.

The Perfection of Letters thus cutt, &c. consists in their being all severally square and strat, on every side; and all, particularly, the forms of the letters and letters, so that none of them is any way one or otherwise; nor too big in the Foot, nor too small; well ground'd, so the two Extremes of the Foot contain half the Body of the Letter; well ground, barb'd, and cramped, with a sufficient Nook, &c.

The Letter Founders have a kind of Policy or Catalogue to regulate the Number of each kind of Letters in a Fount. See \textit{FOUNT}.

\textbf{FOUNT}, or Fount, among Printers, &c. a Set, or Quantity of Characters, or Letters, of each kind; cut by the Letter Founder, and forced.

Thus we say, A Founder has cut a font of Pisic, of Eagle, of \\textit{Proprius}, &c. meaning, he has cut a Set of Characters of this Kind. See \textit{LETTER, LETTER FOUNDRY, &c. A Complaisant Font does not only include the running Letter; but also Majuscules, or Large, and Small Capital, Single Letters, Double Letters, Symbols, Colors, Lines, Borders, Head-pieces, Tail-pieces, and Numerical Characters. The Letter Founders have a kind of List, or Tariff, whereby they regulate their Founts.

The Occasion thereof, is that some Letters being in much more use, and occasion repeated than others; their Cells, or Cases should be more fitted and forced than those of the Letters less used. The same reason directs: As to the s and t for instance, always are in greater Quantity than the k or c.

This Difference will be very perceiv'd from a proportional Composition of these Letters with themselves, or some others.

Suppose a fount of a hundred thousand Characters, which is a common Fount: Here the s should have five thousand; the t three thousand; the n eleven thousand; the i six thousand; the m three thousand and the a thirty only; and the x, z and s not many more.

But this is only to be understood of the Letters of the Latin Characters, and not of those other Characters, which it would be here too long to induct on. See \textit{LETTER, CHARACTER, LETTER FOUNDRY.}

\textbf{FOUNTAIN}, Font, in Philology, a Spring, or Source of living water, or water flowing out.

For the Phaenomena, Theory, Origin, &c. of Springs or Fountainsee \textit{Spring}.

Among the Ancients, the Fountain, or Sources of River, held sacred, and even worship'd as a kind of Divinities.

Seneca observes as much in his Forty first Epistle: And Cicero L. III. de Nat. Deor. c. 2. mentions, that the Roman Priests and Augurs used in their Prayers and Invocations the Names of the Tiber, and other Rivers, Brook's and Springs; and this, whether from the frequent Inmention in \textit{QVIII.} of Grauter has, \textit{FONTI DIVINO ET GENIO NUMINIS FONTIS.} It was a Point of Religion, not to disturb or rudely to disturb the Waters in Bathing or Bathing. See \textit{FONTANIA}.


\textit{Orificial Fountain,} in Hydraulics, a Machine, or Conventacle, where the Water is violently spouted, or darded up; call'd also \textit{Jet d'Eau. See Jet d'Eau, FLUID, &c.}

\textbf{Constitutions of kinds of these Artificial Fountains; some founded on the Spring, or Elasticity of the Air; and others on the Pressure or Weight of the Water, &c.}

The Structure of each hero, being very pretty and curiously and affording a good Illustration of the Doctrine of Hydrostaticks and four-words; shall be here explain'd.

\textbf{Constitution of an Artificial Fountain, playing by the Spring, or Elasticity of the Air.}

A Veelc, proper for a Revisor, as A B, \textit{Tab. Hydraulicks, Fig. 17.} is provided of Metal, Glass, or the like; condensing from the Neck a spring. Tho' this Neck a Tube is put, e. a, traversing the Middle of the Veelc, and the Orifice, A, nearly, but not absolutely, reach the Bottom of the Veelc; the Veelc being first half fill'd with Water. This Tube is provided of a Jet, \textit{or Spring}, and condensing, if Pipe may be fix'd upon the Tube, so as to play on the Surface of a, of a large Quantity of Air may be injected thro' the Tube into the Water; out of which it will diligate itself, and empty itself out of the Veelc, and lie over the Surface of the Water, C D.

Now, the Water here contain'd, being press'd by the Air, which is g. g. twice as dense as the external Air; and the Force which is equal to its gravitating Force: The Effect will be the same as if the Column of Air over the Surface of the Water, were double that of the Column, prefig in the Tube; so that the Water, e. e. from the Veelc, thro' the Tube, with a Force equal to the Excell of Pressure of the included above that of the external Air. See \textit{AIR.}

\textbf{Constitution of an Artificial Fountain, playing by the Pressure of the Water.}

Having the Convenience of a Fund, or Reservoir of Water, in a Place considerably higher than that where the \textit{Fountain} is to be, whether that Fund has been plac'd there by Nature, or whether it has been rais'd for the Purposethrough a Syphon, or a Waterhead (like the like) from the Revisor lay vertical Tubes for the Water to descend thro'; and to these vertical Tubes, fix other horizontal ones, under Ground, to carry the Water to the Place where it is to play. When the vertical and Horizontal Tubes criss cross, or by various Water, Jets, or Sprouts; their Altitude being much less than that of the Tubes whereby the Water was brought to the horizontal.

Then will the Water, by the Pressure of the superficium Column, be spouted up at these Jets; and that, to the Height, or Level of the Water in the Revisor; and this, by the Force of the Tubes be sent or incured: See \textit{DEMONSTRATION HERE}, see under \textit{Fluids}.

Thus may Water be spouted to any given Height or place, which may be so proportion'd as to yield any given Quantity of Water. See \textit{Fountain}.

Of the Tubes of the same \textit{Fountain} may be made to yield Water in any given Rate: Or, lastly, different Tubes may project by different Altitudes. Rules, for all which, the Reader will find an account of on the Founts of our artificial Water-works.

An \textit{Influence} or, will be dilacquefree.

\textbf{A Fountain that shall play the Water in various Directions.}

Suppose the Vertical Tube, or Spout in which the Water rises, to be a B (\textit{Tab. Hydraulicks, Fig. 18.}) into this, fix several other Tubes; some horizontal, others oblique; some inclining, others reclining, as O, P, M, N, L, &c.

Thus, as all Water retains the \textit{Direction} of the Aperature, thru which it is spouted: That, inclining thro' A, will run perpendicularly; and that thro' L, H, N, P, E will describe Arches of different Magnitudes, and tending different ways. Or
Or thus; Suppose the Vertical Tube A B, Fig. 19, thro' which the Water arises, to be stop'd a-top, as in A; and instead of Pipes, or Jets, let it be only perforated with little circular holes, or half, or quarter, half, its Surface; Then will the Water spin forth in level Circles thro' the little Apertures, and to a Distance proportional to the Height of the Fall of the Water.

Suppose the Tube A B be stop'd the Height of a Man, and be furnish'd with an Epiphonomenon, or Cook C. Upon opening the Cook, the Spectators, dreaming of no such Matter, will be cover'd with a Shower.

It must be here observed that the Diameters of the Apertures, by which the Water is admitted, must be considerably less than one's of the Tubes in which the Water is brought; let the Refluxion of the Air, and other Impediments, specifi'd under Feusin, break the Force of the Water.

A Fountain playing by the Droplets of a Glass.

Suppose A B, Fig. 20, a Glass or Metal Sphere; wherein is fix'd a Tube, C D, opening to the right, C, and reaching almost to D, the Bottom of the Sphere. Now let the Air be such'd out of the Tube C D, and the Orifice C be immediately immer's'd under cold Water; the Water will ascend thru' the Tube into the Sphere.

This proceeding, by repeated Ersessens, till the Vessel be above half full of Water; and then applying the Mouth to C, and blowing Air into the Tube; upon removing the Mouth, the Water will flow forth.

Or, if the Sphere be put in hot Water; the Air being thereby rarify'd, will make the Water spout as before.

This kind of Fountain is call'd Pala Heroum, or Hero's Ball, from the Name of its Inventor.

A Fountain, the Stream whereof riseth, and plays a Grand Ball.

Provide a hollow Brass Ball A, Fig. 21, made of a thin Plate, that its Weight may not be too great for the Force of the Water. Let the Tube B C, through which the Water rises, be exactly perpendicular to the Horizon.

Then, the Ball being laid in the Bottom of the Cup, or Basins B, will be taken up in the Stream, and fall'd at a considerable Height, as A alternately vibrates, or playing up and down.

Hereupon the Figure of the Ball is ascrib'd to its incident Riffs, and Fall; Any other Body, not too heavy, may be submit'ted in lieu thereof, e. g. a Bird with its Wings t'ntch'd forth.

But this is not necessary the Globe; when on the Defence, fount'ns dont keep the same precise Perpendicular, wherein it rose (since otherwise it won't mis the Stream, and fall downright) such a Fountain fount'ns only be play'd in a Place free from Wind.

A Fountain which feeds the Water in manner of a Slower.

To the Tube wherein the Water is to rise, fit a Spherical, or Lemniscal Head, A B, Fig. 22, made of a Plate of Metal, and perforated a-top, with a Great Number of little Holes.

The Water rising with Vehemence towards A B, will be divided into innumerable little Threads, as after wards broke, and dispersed into the finest Drops.

A Fountain which spreads the Water in form of a Cloud.

To the Tube A B, Fig. 23, folder two Spherical Segments C and D, almost touch'ng each other; with a Screw E, to contract, or amphi'yze the Interstice or Chink at Pleasure.

Here pen'd the Water, as with a Cloud, even Nick'd in a Spherical, or Lemniscal Head, fitted upon the Tube.

The Water spouting thro' the Chink, or Nitch, will ex pand in full manner of a Cloud.

Fountains wherein the Water is spread on the Figures of Men and other Animals.

Since Water may be deriv'd or convey'd by Tubes in any Situation; and always retains the Direction of the Aperture it emerges from; it may be applied to the Furniture of Fountains, and the various Forms Water may be put into by their means: All depending on the Magnitude, Figure, and Direction of the Apertures, or Apertures.——

A Fountain, which when it has done pouring, may be turn'd like an Hour-glass.

Provide two Vessels L M, and NO, Fig. 24, to be so much the bigger as the Fountain is to play the larger; and place at so much the greater Distance from each other, P N, as the Water is desir'd to spout the higher. Let B A be crooked Tube, furnish'd in it with a Cock, and F E an other Cock, with a straight or angular Tube D C. To L and K are to be other larger Tubes, open at both Ends, and reaching near to the Bottoms of the Vessels N O and L M: To one, the Tubes Q K, and S T are likewise to reach.

If, now, the Vessels L M be fill'd with Water; it will descend thro' the Tube B A, and upon opening the Cock C, will spout up near to the Height of K: And, after its Fall, the Water will flow thro' the little Tube I, into the Vessels N O, and expel the Water in the Tube C D. In length, when all the Water is emptied out of the Vessel L M by turning the Machine upside down, the Vessels N O will be as before, and make the Water spout up through the Cock D.

Hence, if the Vessels L M, and NO contain just as much Water as will be spout't up in an Hour's time; we shall have a spouting Column, or Water Clock, which may be graduated or divide'd into Quarters, Minutes, &c. as shown under the Article Clepsydra.

A Fountain that begins to play upon the lighting of Candles, and coals as they go out.

Provide two Cylindrical Vessels, A B, and C D, Fig. 25, containing Water, both of which are open at their Bases; so that the Air may descend out of the higher, into the lower. To the Tubes folder Candlesticks, H, &c. And to the hollow Cover of the lower Vessel C F, a little Tube, or a Pipe, furnish'd with a Cock G, and reaching almost to the Bottom of the Vessels. In G let there be an Aperture, furnish'd with a Screw, whereby Water may be pour'd into C D.

This through lighting the Candles H, &c. the Air in the contiguous Tubes becoming rarify'd thereby; the Water will begin to spout thro' E F.

By the same Consistence a Statue may be made to shed Water upon any flower, or fruits, in the lighting of a Candle, &c. All here require'd, being to lay Tubes from the Cavity wherein the Air is rarify'd, to some other Cavities near the Eyes, and full of Water.

Fountain, with regard to Architecture, is an Affirmage of Mufonary, Sculpture, &c. either for the Decoration, or Conve.niency of a City, Garden, or the like.

For various Determinations, according to their Form, and Situation; as, Spring Fountain, a kind of plain Spout, or Stream of Water, issuing out of a Stone, or Hole in a Wall, without any Decorations.

Such is the Fountain of Trevi at Rome. Covered Fountain, a kind of Pavilion, built of Stone; either Infusile, and square or round; or Multilateral, or back b. Played Fountain, having a broad back; with a Refractor, and a spout, or during forth the Water thereof thro' one or more Cocks s, in the middle of a Street, Square, Round, Court, or the like. Such is that in Latinwain-Lain, London.

Open Fountain, is any spouting Fountain, with a Bafen, Cup, and other Ornaments; all open: As is frequent in our Gardens, and Inneyards at Rome.

Spouting Fountain, or a Eau, is any Fountain whole Water is dard forth impotently thro' one or more Jets, or Adjournments, and returns in Rain, Nets, Folds, or the like. Fountain of Rain.

Bafin Fountain, is that with only a Bafen of any Figure whatever; in the Middle whereof is a Jet or Spout; or perhaps a Statue; or even a Group of Figures; As in the Buckingham House.

Cap Fountain is a Fountain wherein there is a Bafen beside a Bafen, has likewise a Cup of one single piece of Stone, or Marble, support'd upon a Shaft, or Pedestal, and receiving a Jet, or spout, or spout'ng out of the Middle thereof. As the Fountain in the Court of the Fountains, Cup which must be ornate, and antique; being brought from the Baths of Titus at Rome.

Pyramidal Fountain, that form'd of several Basins, or Cupp'd in steps, or risers, and diminishing all the way; being support'd by a hollow Stem, or Shaft.

As the Fountain of Monte-Dragneau at Frejus; or else support'd by Figures, Fillets, or Consoles; the Water whereof in its Fall makes Ner in diverse little Sources, and represents a kind of Water Pyramid: As that at the Head of the Cascades at Versailles.

Statuary Fountain, that which being open and infla-
lateral, or even buck'd, is adorned with one or more Statues, by way of snuffing, or crowning. As the Fountain of La-
rens at Veules; and that of the Shepheard at Caphradales. There are also Statues, which spout forth Water at some of
their Terminals. Sea Shells, Valves, Urns, and other At-
tributes of the Sea.

Ruddie Fountain, is that form'd, or enrich'd with Rock-
work, Shell-work, Petrifications, &c.

In Architecture, a Fountain, laicd of the composed of Aquatic Figures, as Sea DivinitieS, Niads, Tritons, Rivers, Dolphins, and some of
Fish, and Shells. As the Fountain of the Place Pa-
frisean a Rome, where a Shell supported by four Dolphins, and a Triton, supports a Triton, that spouts Water out of his
mouth. Concha Marina.

Navel Fountain, is that made in form of a Vessel. Such is that of the Place d'Eygues at Paris, representing a Bark:
That at Monte Carlo, representing a Cell; or that before
the Vineyard Mattel at Rome, resembling a Boat.

Symbolical Fountain, that where the principal Oma-
ments are the Attributes, Arms, or Cognizances of the Per-
on who erected it. As the Fountain of St. Peter in Mo-
ntorio, resembling a Capital with Towers; and Dou-
pont, representing the Arms of Capitale; and some other
Fountains at Rome, among which are the Forver-de-Lis, and
the Three, the Bearings of the Family of Pope Leo-
cent X.

Arch'd Fountain, that where Balm and Jet are plac'd
perpendicularly under an Arch. Such are the Fountains of
the Sacred fountain, and the Silver fountain at Priest's Charity.

Fountain Pen, is a sort of Pen, contriv'd to contain
a great Quantity of Ink, and let it flow by gentle Degrees; so as to supply the Water a long time, without a necessity of a new
Fountain.

The Fountain Pen, represented Tabl. Mutillian, Fig.
61, from divers Pieces G H of Braies, Silver, &c., where-
ever it is necessary to carry the Pen, which is screwed into the Imple of a little Pipe, which is also screwed into the
Pipe, of the same Bigness, as the Lid G, in which Lid is
dfold'd a Male Screw, for securing the Cover, as also for
taking it up. This Hole at the Plate, and hindering the Ink from passing thru' the Pipe, is made by a little Pipe, which is a little Pipe, on the Outside whereof the Top Cover H may be screwed. In the Cover there goes a Port Crucian, to be inser't'd into the little mentioned Pipe, in order to stop the End of the Pipe, into which the Ink is to be pour'd by a
Funnel.

To use the Pen, the Cover G must be taken off, and the Pen a little shaken, while it run more freely.

FOURCHEE, or a Fork, is a plant that grows in He-
ridery. A Croc Fourchee is that fork'd at the Ends. See Croc.

This Fowl represents it as 'anchor'd, the Extremities turning in a circular manner to sharp Points; whereas the true Croc Fourchee, i.e. forked, has its Fork compoud'd of sraits Lines, and blunt Ends.

FOURCHER, an ancient Law Term, signifying a putting off, prolonging, or delaying an Action.

As by hammering we draw out our Speech, not deliver-
ing that we have to say, in ordinary time, by foucheing we
prolong a Suit, that might be ended in a shorter Space.

In Wilkin, cap. 4. art. 1. Words: Copacens and Jointants shall no more fouche, but only shall have one Effnon, &c. And Anno Ed. 1. cap. 12. it is said in the fame Scale: The Defendants shall be put to Answer without fouche, but only one Effnon, and is said: Where a Man, and his Wife, or each of them call an Effnon. Tic call'd fouche, because 'tis twofold. Caveat ver & manners implicat, quod sequor in Effero alterius et ipsius alterius quae est non deinde, vel quod sequor in Effero alterius peruentum, consequent curam Efferon in me locis: Ante annum caram terram vacuo Efferon de male testi habere po-
tra. Hanc habentian in map, cap. 12.

FOURTH, in Mufick, one of the Harmonic Intervals, or
Concors. See Concord.

The Fourth, is the Fourth, in order of the Concors. It
consumes in the harmonic Solfa, in the Ratio of 2.5, i.e. of Sounds produced by the same Tuning Fiddle. Lengths are to each other as 2:5. See Concord, and In-
terval.

The old Fourth, became containing four Terms, or
Sounds between its Extremes; and three Degrees: Or, as being the fourth in the Order of the Natural Scale from the Fundamenta]. See DEGREE, and FUNDAMENTAL.

The Ancients call the Fourth, Diapente, and speak of
it as the first and principal of all Concors; and to
moderns find in it one of the most imperious. 'Tis so very
barren, and jeneous, that it affords nothing good, either by
Multiplication, or Division. See DIAPENTE.

The Redundant Fourth is a Discord composed of the
Ratios 2:5 and 3:5, and 4:7. See Diapente.

FOUTGELD, or Foot-Geld, antiently denoted an Am-
ercement, for not cutting out the Bails of great Dogs
Facts, in the Forest. See Expedite.

FOWL, is a Name given to Birds, in general, to keep Dogs with
in the Forest, unlawed, without Punishment, or Control.

FOOWL, in its general Sense, is of equal Import with
Bird. See Bird.

The name of a species or a more peculiar manner underrun of Poultry; or the larger part of Birds, both Domestic, and Wild;
either bred up, or hunted for the Table. Such are Tur-
keys, Geese, Cocks, Hens, and Ducks, both wild and tame.
Fowl are either Poultry or Fowls. See Fowl and Fowl.

Fowls, is a Name, for Birds, that are not of the
Yard: Fowls, are a necessary Part of the Stock of a Coun-
try Farm; and yield considerable Service and Profit by their
Eggs, Breast, Feathers, Dung, &c. See EXPEDITE.

Fowl is an Order, proper. Of the Expedit, and Ex-
ience near any Highway; if being as able to fright themselves the greatest Part of the Year, by their feeding on Insects, Worms, Snails, Getting, or almost any thing edible.

The callous Hens are always the best for fitting, and the
youngest for laying: But no foot will be good for either, if
kept too fat.

The best Age to set a Hen for Clucking, is from two
Years and a half, and the middle Summer Month to let them
in, is February: Tho' it may be done to good purpose any
time between that and Michaelmas. One Cock will
ferv ten Hens: A Hen fis twenty Days; whereas Goose, Dates much longer.

Buckwheat, or French Wheat, or Hemp-feed, 'tis said,
make them lay fatter than any other Food: And the name Buckwheat, either whole, or ground, and made into a Pate, fat by the House; and all mixed for that purpose the
Barley-meal, or Wheat-Rower, fold'd in Milk, or Water,
made into a Pate, and crum'd down their Mouths twice a
day, till they will hold no more. A Goose will scarce
be satisfied if white footed, or that of Straw. But if white footed, or the Lanty, the Feeder, is young.

The lightest colour'd Geese are the best: And those
that begin to lay the soonest, as they have a Chance of hatching twice in one Year. They begin to lay in the Spring, and end in the Summer: As for Geese and Geese are begun to be taken at a Month old, and will be fat in a Month more. Old Geese are chiefly taken at the Months old, in, or after the Harvest. A wild Goose, if red hoasted, is old, and har-
mony with those, if white footed, or that of Straw. When the Eggs are set under a Hen, or other Fowl, 'tis
necessary to mark the upper sides thereof; and when they go to feed, to note whether the minds to turn them upside down at the Office, it may be done for her. See Egg, Feathers, &c.

FOWLING, the Act, or Art of catching Birds with Nets, Bird-nets, and other Apparatus, as a kind of breeding up
the fame. See Fowls, Net, and Birdlime.

Fowling is also used for the purling, and taking of Birds with Hawks, Falcons, and other Birds of Prey: more pro-
proe in Fowling, or Fowling Pieces.

Fowling Piece, a portable Fire Arm for the shooing of
Birds. See FIRE ARM.

Of Fowling Pieces, these are reputed the best, which
have the longest Barrel, viz. from ½ Foot, to 6; with an
indifferent Bore, under Harquebous: Tho' for different Oc-
casions they should be of different Sorts, and Sizes. But in all, 'tis essential the Barrel be well polish'd and smooth with-
in, and the Bore all of a Bigeness, from one End to another, which may be prov'd by thrusting in a piece of Wood, cut exaetly to the Bore of the Muzzle, down to the Touch-hole.

FOX HUNTING, see HUNTING.

FOXY, or a Fork, is a plant, or Division of an Unite, or of Integer: Or, a Number which stands in the rela-
tion to an Unite, a Part to its Whole.

The Word literally imports a Broken Number. See
Numerator.

Fractions are usually divided into Decimal, Sexagesi-
mal, and Vulgar.

For Decimal, and Sexagesimal Fractions, see DEC-
IMAL.

For Vulgar Fractions, called alike Simple Fractions, are al-
ways expressed by two Numbers, the one wrote over the
other, with a Line between them.

The numerator of the Fraction, denotes the Unite, or Whole, that is divided into Parts; and the upper, called the Numerator of the Fraction, expresses the Parts given in the present Collect. See NUMERATOR, Ex-
presses.

This, two thirds of a Line, or other Things are
writ: where the Denominator 3 shews, that the whole Line is supposed to be divided into three equal Parts; and the Numerator 2 signifies or alligns two of such Parts.

Again,
Again, twenty nine Sixteaths is wrote $\frac{29}{6}$; where the Numerator 29 expresses 29 Parts of an Integer divided into Sixty, and the Denominator 62 gives the Denomination to the Parts, which are called the Terms of the Definfb of adding the Denominator, is to be obvious what aliquot Part the broken Number has in common with Unity. See Denominator, &c.

In all Fractions, as the Numerator is to the Denominator, as the Fractions is to 1; to the Whole, whereof it is a Fraction.

Thus, supposing $\frac{3}{5}$ of a Pound equal to $\frac{3}{5}$ S. It's evident, that $\frac{3}{5} + \frac{3}{5} = \frac{6}{5}$. Whence it follows, there may be into this lower Value, the same with another; inasmuch as there may be infinite Numbers found, which shall have the Ratio of $\frac{3}{5}$. \textit{So Ravo.}

Fractions are either Proper, or Improper.

A \textit{Proper Fraction} is that where the Numerator is less than the Denominator; and consequently the Fraction less than the Whole, or Integer, as $\frac{1}{4}$.

An \textit{Improper Fraction} is, where the Denominator is either equal to, or bigger than the Numerator; and, of course, the Fraction, equal to, or greater than the Whole, or Integer, as $\frac{2}{2}$ or $\frac{5}{2}$. 

Fractions, again, are Simple, or Compound. 

Simple Fractions are such, as consist of only one Numerator, and one Denominator; as $\frac{1}{4}$, or $\frac{3}{5}$. 

Compound Fractions, are those of the Frations, as $\frac{1}{2}$ of $\frac{1}{2}$, is $\frac{2}{4}$ of the Numerators, and Denominators, as $\frac{3}{4}$ of $\frac{3}{4}$ of $\frac{3}{4}$. 

Of Fractions those are equal to each other, whole Numerators have the same Ratio to their Denominators. Those are equal, that have the same Ratio, and those left, which have less: Thus, $\frac{2}{3} = \frac{4}{6} = \frac{3}{4}$. But $\frac{3}{4}$ is greater than $\frac{2}{3}$, and $\frac{2}{3}$ less than $\frac{3}{4}$.

Hence, if both the Numerators and Denominator of a Fraction be multiplied, or divided by the same Number, the Fraction will be the same.

The Arithmetic of Fractions consists in the Reduction, Addition, Subtraction, and Multiplication thereof.

I. \textit{Reduction of Fractions.}

To reduce a given whole Number into a Fraction of any given Denominator: Multiply the given integer, by the given Denominator: The Product will be the Numerator.

Thus we shall find $2\frac{1}{2}$; and $5\frac{2}{3}$; and $7\frac{3}{4}$. 

If no Denominator be given, the Number is to be reduced to a Fraction, by writing 1 underneath it, as a Denominator.

To reduce a given Fraction to its lowest Terms, i.e. to find a Fraction, equivalent to a given Fraction, but express'd in the lowest Terms possible: Find the Quotients and, to make a new Fraction, equal to the given Fraction. 

And if the denominators of the two Fractions be different, divide them both: the Fraction is reduced to its lowest Terms.

Now, to find the greatest common Divisor of two Quantities, is to divide the one by the other: Then divide the Divisor by the Remainder thereof: Again, divide the Dividend by the second Remainder of the first; and so on, till there remain nothing. The last Divide is the greatest common Measure of the two Numbers.

If it happened that Unity is the only common Measure of the Numerator and Denominator; then the Fraction is incapable of being reduced any lower.

To reduce two, or more Fractions, to the same Denominator: i.e. to find Fractions equal to the given ones, and with the same Denominator: If only two Fractions be given, multiply the Numerator, and Denominator of each, by the Denominator of the other: The Products are given as the new Fractions required.

Thus $\frac{1}{3}$ and $\frac{3}{4}$ make $\frac{1}{3}$ and $\frac{3}{4}$. If more than two given, multiply both the Numerator and Denominator of each into the Product of the Denominators of the rest.

Thus $\frac{1}{3} \times 3 = \frac{3}{9}$; $\frac{3}{4} \times 4 = \frac{12}{16}$; $\frac{1}{5} \times 5 = \frac{5}{25}$.

To find the Value of a Fraction in the known Parts of its Integer: Supposing, e. g. It were required to know what $\frac{3}{4}$ of a Pound was: It would be necessary to know what $\frac{3}{4}$ of a Pound is, and multiply it by the Number of known Parts of a Pound, and divide the Product by the Denominator 16. The Quotient gives $\frac{1}{2}$. Then multiply the Remainder 4 by 2, the Number of known Parts in the next inferior Denominator 4; and dividing the Product 8 by 4, the Quotient is $\frac{1}{4}$. So that $\frac{4}{25}$ of a Pound $= \frac{4}{5} \times \frac{1}{4}$, &c.

To reduce a mixt Number, at $\frac{1}{4}$ into an improper Fraction of the same Value: Multiply the Integer, by $\frac{1}{4}$ or $\frac{1}{5}$, and add the Numerator to the denominator: The Sum 59 set over the former Denominator, 43; constitutes the Fraction required.

To reduce an Improper Fraction into its equivalent mixt Number: Suppose the given Fraction $\frac{7}{5}$, divide the Numerator by the Denominator; the Quotient 1 is the Number found.

To reduce a Compound Fraction into a Single one: Multiply all the Numerators into each other for a new Numerator, and all the Denominators for a new Denominator. Thus $\frac{1}{2} \times \frac{1}{2} = \frac{1}{4}$.

II. \textit{Addition of Vulgar Fractions.}

If the given Fractions have different Denominators, reduce them to a common one, and then add.

Thus, e. g. $\frac{1}{2} + \frac{1}{2} = \frac{1}{2} + \frac{1}{2} = \frac{1}{2}$. When the Denominators are to be added, they must first be reduced to simple ones: And if the Fractions be of different Denominations, as $\frac{3}{4}$ of a Pound, and $\frac{1}{2}$ of a Shilling, they must first be reduced to Fractions of the same Denomination.

To add mixt Numbers: The Integers are first to be added, then the fractional Parts: And if their Sum be a proper Fraction, only annex it to the Sum of the Integers.

If it be an improper Fraction, reduce it to a mixed Number; adding the integral Part thereof to the Sum of the Integers, and the fractional Part after it. Thus, $\frac{1}{2} = \frac{3}{4} = 1\frac{1}{4}$.

III. \textit{Subtraction of Fractions.}

If they have the same common Denominator, subtract the lesser Numerator from the greater, and set the Remainder over the common Denominator. Thus from $\frac{2}{3}$ take $\frac{1}{3}$, and there remains $\frac{1}{3}$.

If they have not a common Denominator, they must be reduced to Fractions of the same Value, having a common Denominator, and then as in the first Rule.

Thus $\frac{1}{2} - \frac{1}{3} = \frac{3}{6} - \frac{2}{6} = \frac{1}{6}$. 

To subtract a mixt Number from a mixt Number, or a mixt Number from another: Reduce the whole, or mixt Numbers to improper Fractions, and then proceed as in the first and second Rule.

IV. \textit{Multiplication of Fractions.}

If the Fractions prop'd be both simple, multiply the Numerators one by another, and the Denominators into one another, and the Product is the new Denominator.

Thus 4 into $\frac{1}{2}$ produces $\frac{2}{2}$.

If one of them be a mix'd, or whole Number, it must be reduced to an improper Fraction, and then proceed as in the last Rule.

Thus $\frac{1}{2}$ into $\frac{3}{4}$, gives $\frac{3}{8}$; and $\frac{1}{2}$ into $\frac{1}{3} = \frac{1}{6}$.

In Multiplication of Fractions observe that the Product is in Value, the lowest of the two Fractions. The Numerators, are multiplied; as Unity, is to the Multiplier, so is the Multiplied, to the Product: Or, as Unity, is to either Factor, so is the other Factor, to the Quotient, as if it divide 12, it will be, as $\frac{1}{2} = \frac{1}{2} = \frac{1}{2}$. 

But is greater than either $\frac{3}{4}$ or $\frac{1}{2}$. Therefore either of them must be greater by $\frac{1}{4}$.

V. \textit{Division of Fractions.}

If the Fractions prop'd be both simple, multiply the Denominator of the Divisor, by the Numerator of the Dividend, and the Product is the Numerator of the Quotient. Then multiply the Numerator of the Divisor, by the Denominator of the Dividend, the Product is the Denominator of the Quotient.

Thus $\frac{1}{2} \div \frac{1}{2} = \frac{1}{2} \times \frac{1}{2} = \frac{1}{4}$.

If either Dividend, Divisor, or both, be whole or mix'd Numbers, reduce them to improper Fractions; and if they be compound Fractions, divide them one by another, and thus get the answer.

In Division of Fractions, observe that the Quotient is always greater than the Dividend; because in all Division, the Divisor, is to Unity, as the Dividend is to the Quotient; it will be, as $\frac{1}{2} \div \frac{1}{2} = \frac{1}{2}$. Now 3 is greater than $\frac{1}{2}$; whereas 2 must be greater than $\frac{4}{3}$: But in Fractions as $\frac{1}{2} > \frac{1}{2}$; where as, $\frac{1}{2} > \frac{1}{5}$, whereas $\frac{1}{2}$ is less than $\frac{1}{5}$; wherefore $\frac{1}{2}$ must also be less than $\frac{1}{5}$.
This Fraction instead of three Quarters of one Pound may be considered as a fourth Part of three Pounds; that is, by taking as many of the Integers, as the Numerator expresseth (viz. 3) and dividing them by 4, the Denominator; for then the Integers of the former will yield for a Value, the latter.

15. This shows the Reason of that manner of Expert,

sum'd by Geometers and Algebraists, who read \( \frac{a}{b} \), thus, a divided by \( b \).

Logarithm of a Fraction, see LOGARITHM.

Summation of infinite Fractions, see SUMMATION CALCULUS.

FRACTURE, in Medicine, and Chirurgery, a Breach, or Rupture of a Bone: Or, a Solution of Continuity in a Bone, when it is crush'd or broken, by some external Cause. See Bone.

In Fractures, the Bone is either broken breadthwise, that is, transversely; or lengthwise, which last is properly call'd a Failure. See SUTURE.

Transverse Fractures are more easy to discover, but more difficult to be repaired. As the Middle of a Bone is left dangerous than towards the Articulation. When the Fracture is attended with a Wound, Contusion, Etc. or when the Bone is shattered into several Pieces, 'tis highly dangerous. A Fracture of the Femur in Adults is very rare, if ever cured; but when there full remains a Lameness. Fractures of the lesser Bones are usually cured in seven or fourteen Days; those of the greater, in 20 or 40 Days.

In the Care of Fractures, the Chirurgeon has two Things to attend to: First to remove the fractured Bone into its natural Situation; and to keep it tight with Perioste, or Splinters, and Bandages: In which case, there is a necessity of the Service of the Doctor of Surgery, or Surgeon.

A Fracture of the Cranium is a certain Death, without Trepanning. See TREPANNING.

FRAEUM, Braille, in Anatomy, a Name given to divers Parts, from their Office in retaining, and curbing the Motions of the Parts they are fitted to.

The Frænum Linguae, or Bridle of the Tongue, is a membranous Ligament, which lies the Tongue to the Os Hyoidis, Larynx, Fauces, and Lower Part of the Mouth. See Tongue.

In some Subjects, the Frænum runs the whole length of the Tongue, to the very Tip: In which Cases, if it were not, it would take away all Flexibility of Speech.

The Frænum of the Pedi is a slender Ligament, whereby the Prepyge is tied to the lower Part of the Glans. See Penis.

Nature varies in the Make of this Part; it being so floret in some, that unles divided, it would not admit of perfect Erection. See ERECTION.

There is also a kind of little Frænum, fitted to the lower Part of the Clitoris. See CLITORIS.

FRAIT, FREIGHT, or FART, in Navigation and Commerce, the Hire of a Ship, or of a Part of it; for the Conveyance and Carriage of Goods, from one Part, or Place to another: Or the Sum agreed on between the Master and the Merchant, for the Hire and Ufe of a Vessel.

The Freight of a Vessel is usually agreed on at the Rate of so much for the Voyage; by the Month, or per Tonne.

The freight of a Vessel, or hiring out of a Vessel on Freight, or Hire, is one of the principal Articles in the Trade of the Hollander: They are the Carriers of all the Nations of Europe, and their Purveyors; notwithstanding that great Part of their Business consists in, and that there fore it is necessary for the building of a Vessel from other Countries.

The principal Laws and Rules relating to freighting, are: That if a whole Vessel be hired, and the Merchant, or Perfon who hires it, don't give it its full Load, or Burthen, the Master of the Vessel cannot withhold his Confect take in any other Goods, without accounting to him for Freight.

That, tho' the Merchant don't load the full Quantity of Good, agreed on in the Charter Party, yet he fhall pay the whole Freight; and if he load more, he fhall pay for the Excess.

That, the Master may set a-flore such Goods as he finds in his Vessel, which were not notify'd to him; or take 'em at a higher Rate, than was agreed on in the Charter,

That, if a Ship be found or detailed in its Courfe, either thro' the Master's, or the Merchant's Default; the Delinquent shall be accountable to the other.
That if the Merchant oblige to refit his Vessel during the Voyage, the Merchant shall wait; or caiie the whole Freight: If the Vessel could not be refitted, the Merchant is order to pay the Goods in proportion to the Payment that has been performed (i.e., in the case the Merchant proves that the Vessel at the time it last fell, was not capable of the Voyage, the Merchant shall prove his Freight) and account for Damages to the Merchant.

That Freight shall be paid for Merchandises which the Master was oblige to sell for Vessels, or refitting, or other necessary Charges paid for the Goods at the Rate they were laden with, but the Rest were folded at, where they were laden with.

That in case of a Prohibition of Commerce with the Country what the Vessel is bound, so that it is oblige to return back again, the Merchant shall only be paid for Freight being gone.

And if a Ship be lost or detain'd in its Voyage, by an Embargo by order of the Prince, there shall neither be any Entertainment, nor any kind of Detention, in case it be hire per Month; Nor shall the Freight of divers Artes, if hired for the Voyage; but the Pay, and Vessels of the Sailors during the Detention, be done of Account.

That the Master shall be paid his Freight for any Goods lost by Shipwreck, plunder'd by Pirates, or taken by the Enemy: unless the Ship and Goods be redeem'd; in which case he shall be paid his Freight to the Place where he lost his Goods, and the Damages that shall be

That the Master shall be paid his Freight for the Goods saved from Shipwreck; and in case he can't get a Vessel to carry them to the Place where they were bound, that he shall be paid in Proportion to the Part of the Voyage already gone.

That the Master may not detain any Merchandise in his Vessel, in default of Payment of Freight; tho' he may or

That if Merchandises in Casks, as Winca, Oils, Etc., have been run out in Carriage, that the Vessels are left empty; or almost empty, the Merchant may relinquish them, and the Master shall be paid his Freight; but though this does not hold of any other Goods damaged, or dimin'd of themselves, or tho' Accidents.

The Word Freight is form'd of the French Fret, signifying, the burden, the weight, or load of a ship, an Arm of the Seas; i.e. others chuse to derive it from the German Fracht, or the Flemish Fracht, signifying Carriage.

Freight is due at 30s per Ton, to the Carrier, by the Articles of Trade, under the same terms as any foreign Vessels at their Entrance and coming out of the Port Havens of that Kingdom. And none, that all Vessels not built in Prince, however they may belong to the Subjects of France, are required Foreigners, and subject to this import; unless it be made appear, that two Thirds of the Ship's Crew are French.

The Articles of Trade concluded as above, between England and France, and a 30s per Ton should be remitted the Engineer, and at the same time the Duty of 5s. Sterling should be suppress'd in favour of the Merchant, for the Execution of that Article; as the Tariff fetted in 1757, was no longer in favour of the Duties. The Dutch however and the Hans Towns are exempted from the Duty of Freight.

Frais, it means also, Lading or Shipping of a Ship; or the Burden of Goods, Etc., like on Board. See BURD. FRAT, a Ballast of Rubbish, or such like Materials, to pack up Figs, Raisins, Etc.

It is also the French Quantity of Raisin, of about 7 pounds. Frais, in Fortification, a kind of Defence, consisting of pointed Stakes, driven parallel to the Horizon, into the Retrenchments of a Camp, a Half Moon, or the like; to fend off any Approaches or Scambles.

Frais, is without other difference from Frais, than that the latter stands perpendicular to the Horizon, and the former jet oart parallel to the Horizon. See PALISADE.

FRANCE, is also a Machine, used in Retrenchments, and other Works, thrown up of Earth and Timber, to hinder the Parapet of a Rampart, serving instead of the Gordon of Stone, us'd in Stone Works.

The whole Places of his Camp with Frais and Palisades. All the Edges of the Place were frais'd and palisaded.

Frasins, is the lining of the Masque, for all animals with Pikes; in cafe of their being charg'd by a body of Men.

FRAME, is a Machine, used in Retrenchments, and the Printers Frame is more usually call'd Cheese. See CHEESE.

FRAME, is a kind of Lining, including a Pikes being hill'd with Sand, serves as a Mould to cut their Work. See FOUNDRY, and MODE.

FRAME is particularly used for a Sort of Loom, where they stretch their Linens, Silk, &c., to be embroir-

FRA, in Joinery, &c., a kind of Cafe, wherein a thing is fast, or inclos'd, or even lapped, as a Window Frame, as Frame of Picture, of a Table, &c. See WINDOW, &c.

Fram, or Fram, see Frame, 1 Term literally signifying frame, open, and flexible, from the Dutch Frame, and the Dutch, Frame, and the Dutch, Frans, and from the French, to denote Modifications and Meanings. See Frame, Frank, Fair, Frank Letter, &c. See FREE.

Fram, or Frame, see Frame, 2 Term much used in our ancient Customs and Trades, where it has particular Modifications and Meanings, according to the Words it is combined with, as
FRANK ALBERT, or Alberton, is a Land, Tentement, or Demesne, that does not hold of any superior Lord. See ALBERTON, and FREE LAND.

FRANK ALICE, or Free Alice, is a Tenture of Lands or Tenements belefited on God, that is, given to such People as devote themselves to the Service of GOD, in pure and perpetual Widowhood. Without the Consent of the Feodors, or Givers cannot demand any territorial Service, so long as the Lands remain in the Hands of the Feodors. Briton mentions another kind of this Land given in Als, but not free Als; the Tenants being exempted from all Services. See ALMOUTH.

FRANK BOOK, Sec FREE Book.

FRANK FEE, or Fidelum liberum, is that for which no Service is performed to any Lord. See Fee.

According to Foxt, in Law, a Frank Fee is a Free Service from the Mount, if in Frank Fee were exempted from all Services, except Homage.

Frank Fee, as defined by Broke, is that which is in the Hand of the King, or Lord of any Manor, being ancient Demesne; being superior to the Tenant, and subject to the Crown. Contradistinguished from the Tenants Hands, which is only Ancient Demesne. See DEMESNE.

For the Reg. of Writs, Frank Fee is said to be that which a Man holds both to Common Law and to him and his Heirs; and not by such Service as is required in ancient Demesne, according to the Custom of the Manor.

"It added, that the Land in the Hands of King Edward the Confessor, at the murder of the Duke Godwin, Day Book is Ancient Demesne; and all the rest, Frank Fee. Upon this footing, all the Lands in the Realm are either ancient Demesne, or Frank Fee.

Others define Frank Fee to be a Tenure in Fee Simple, of Lands pliable at Common Law; and not in Ancient Demesne.

FRANK FORM, or FORMA liberum, is Lands or Tenements wherein the Nature of the Fee is chang'd, by Feodment, from Knight's Services, to certain yearly Services; and whether neither Homage, Wardship, Marriage, nor Relief may be required. Not a further Service, not contained in the Frank Form. See Feod. Frank Form.

FRANK FOLDS, is where the Lord hath the Benefit of folding his Tenants Sheep, within his Manor; for the maintenance of the Lord. See FOLDS.

FRANK LAW, is the Benefit of the Free, and Common Law of the Land. See Law.

He that for any Offence, as Conspicacy, &c. lootheth his Frank Fee, incurs their Inconveniences. 1° That he may not be imployed against his Master, by Affair; or otherwise it is as an Evidence, or Writs to the Truth. 2° That if he have any thing to do in the King's Court, he must not approach it in Peron, but appoint his Attorney. 3° That his Lands, Goods and Chattels be held out of the King's Hands; and his Lands be erected, his Treas rooted up, and his Body committed to Civilty. See Conspiracy.

FRANK MARRIAGE, or Marriage by Frank Fee is a Tenure in Tail Special, whereby Lands or Tenements are held to a Peron and his Wife, and the Heirs of their Bodies, on condition of doing Fealty to the Donor from the fourth Degree.

This Tenure arises from the Words in the Gift: Sciant, &c. me T.B. de O. dedisse, &c. concessisse, & specularis certe me confissa. A.B. filio meo, & Merce usuris, eis, filiis eorum in liberum maritiationum munus, Meffigiones, &c. See Tail.

Gualit divides Marriage, Mariitgion, into liberum, and servitio obligament. See Marriage.

Elo, that the reason, why the Heirs do not Service, till the fourth Degree: No donantes vel eorum heredes per hominii receptionem a reverenda religioni: And why in the fourth Degree they shall do Service to the Donor, Song a. B. d. m. t. Gualit observes, terra est pro defectu heredom dotarematorum reverentiae.

Frank Marriage, or Liberum Mariitgion, is more clearly express'd by Bracuton, to be that where the Donor intends this Land to be free from Servitude, both in respect of all succer Service that might be affected to the Fee, so that he who gave it, shall claim no manner of Service from it, until the third Heir, and the fourth Degree, or Donor of the Land, so that no Service is expected from the Heir in the second, the Heir of him in the third, and his, and so forth; in the fourth: But afterwards the same Land to become subj ect to all the former Services, as being then fappp'd to revert back to the Land which was free.

The Lands otherwise given in Marriage, viz. Servito obligament were with a Relavation of the Services due to the Lords, which the Donor and his Heirs were bound to perform; but in Liberum Mariitgion the Donor and Heirs were exempted, till the fourth Degree; when both Service and Homage were to be enj oined for ever.

FRANK PLEDGE, a Pledge, or Surety for a free Man, called also Frank Pledge. See FRANK BOOK.

The ancient Custom of England, for preference of the publick Peace, was, that every free born Man, at 14 Years of Age (regiss Pasons, Clerks, Knights, and their eldest Sons excepted,) should find Surety for his Truth towards the peace of the Realm. When a free born Man was assaulted, when offended, it was preliminantly enquired in what Pledge he was, and then those of the Pledge either brought him forth with in one and thirty Days to his Anwer, or latifly for his Conduct.

This Custom was called Frank Pledge; and the Circuit it extended to Decemna, by reason it usually confined of ten Hourthous, and every Pledge thus bound for himself and Naturall Heirs. See Decemna.

This Custom was fo oblieved, that the Sheriffs at every Coony Court did from time to time take the Oaths of young Persons, as they arriv'd at the Age of 14; and there were then made over to them the Deed of Frank Pledge. Where this Branch of the Sheriff Office and Authority was called Vifus Frank Pledge, &c. View of Frank Pledge. See LEZT, View of Frank Pledge, &c.

Othonis bonus, free liber aliis, free servit, ant est, vel debet offe in Franco Pledge, ant de ducibus manumagant, nisi illi atquis iterum de loco in licem, qui non plus se tenet ad itinera quam ad aulum, vel quod habet quod sufficit pro terram, vel liberae tenementum, vel in civitate rem immobiled. &c. Bracuton L. III. Tract. de Coron. c. 10.

FRANK CLEAR, is liberty of Free Clearage, in a circuit adjoyning the Manor to which all Men, though they have Land of their own within those Combs, are forbidden to cut Down wood, without the View of the Forester, though it be their own Demesne.

FRANK DEED, or INCENT, an odorous aromatic Gum, or Resin, antently burnt in Temples, and still used in Pharmacy. See Gum, and Rasin.

For all the God of this Gum, both in the ancient Romans, and Persians, was called Frank-motion; the Tree that produces it, or even the Place where the Tree grows, is but little known.

The most common Opinion was always that, it was brought from India, as Cincias, and was 반드시 the near the city of Sibra, wherein its Epithet Sambac: And yet the Name Oldhamm, which it sometimes beoms, seems to intimate, that there are of thele tharrifera, or Incent bearing Trees in the City of Oldham, or Oldham, and that the Smellers are posive, that there are others in the East Indies.

Nor are we left at a loss to the Form or Kind of the Tree from which it flows. Pliny conveys himself to lay, that it is fill recall refers the Hay Tree, then the Maple Tree, then the Laurel; but that in reality it is the Turpentene Tree.

Frankensene, is either Male, or Female.

The Male Incent, called oldham, is in fair, white, Bits, or Tears, a little yellowish, of a bitter disagreeable Taffe, and when chew'd, promotes the Flux of Saliva. It is termed Frank mens, in repelus of its Tears, which are larger than the common Frank mens.

That brought from the Indies, is not near so good as that from Arabia, or Mount Libanon. It is usually called Incent of Mecca, or Female Incent; tho' it be not brought from that City, it is usually in Italy, but sometimes in France, Drops or Tears, somewhat reddish, and bitter to the Taffe. Some fell for it the true Adelum. See BEEULLUM.

The Name of Frankensene is only little, round, clear, transparent, Grains, and its Colour, Full the Yellow.

Sec of Incent is the fine Flower, rub'd or ground off the Gum in Carriage, and burnt like Resin, to make Lamp-baskets.

Bank of Incent, is the Bark of the Tree that produces it. It has much the fame Qualities, and the same Smell as the Incent it self.

Turf Incent is only red Suxax. See BEEULLUM.

Arab mens, or Oldhamm, is an Ingredient in divers Galenical, and Chymical Preparations. It is allo used to assist the Tooth each: But it is apt to spoil the found Teeth. This is injurious to it in all respects.

FRANKS, or Oldhamms, or Noteans, Name the Turks, Arabs, Greeks, &c. give to all the People of the Western Parts of Europe.

The Appellation is commonly supposed to have had its rise in the Time of the Crusades, when the French made the most considerable Figure among the Crusadors: From which time the Turks, Saracens, Greeks, Arinyin, &c. seu'd it as a common Term for the whole, of the Christian of Europe; and call Europe it self, Frankish, or Frankilis.

The Arabs and Muscovetes, says Motal, & Herklet, apply the Term Franks not only to the French (to whom the Name originally belong'd) but to the Latin and Europeans in general.
Frauken, or French, primarily denotes a Frenchwoman; and by exception, an European, or rather a Latin, by reason, for to the French a Latin is a term comprehended above the other Nations, engaged in the Holy War. See Latino.

But F. Gozir, in his Notes on Codwars, c. V. n. 43, furnishes another Origin of the Application Frankie, of greater Antiquity, than the latter.

He obliterates that the Greeks at first confound the Name Frank with the French, i. e. the German Nations, who had settled themselves in France, or Gaul: But afterwards they gave it to the French, and so callled Carolinos, Calvarius, after they had been conquered by the Normancs, which at length the Name was further extended to all the Latins.

In this Sense is the Word used by divers Greek Writers, as Grecerolus and others, who, to distinguish the French, call them the Wolfrum Franken.

Du Conga adds, that about the time of Charlemagne, they challd their Latin's, the Northern Nations, as the Eaifer, Wolfrum France, and Wolfrum Frangias; and so callled them to distinguish them from the Gauls, which was the antient France, afterwards call'd Francia.

The French Language, or Lingua Franca, is a kind of jargon, spoke on the Mediterranean, and particularly thro' the Grotts and the Levant, composed of Carian, Spanish, French, vulgar Greek, and other Languages.

The Lingua Franca is the Trading Language; and is thus calld from the Franken, a common Appellation given in the Levant to all the European Merchants and Traders, who come thither to traffick.

In this Language, it may be so call'd, nothing but the Infinitive Mood of each Verb is used; this serving for the fullness of the French, and the Mood of the Conjuctions: And yet this language, mutilated Diction, this barbarous Medley, is learnt and understood by the Merchants and Mariner of all Nations who repair thither.

The German, or Frank, is also an ancient Coin, struck, and current in France; thus call'd from its Impression, which represented a Frenchman, sometimes on horseback, and sometimes on foot. See Coin.

Thus they had indifferent names of Gold, or Silver. The first was worth somewhat more than the Ecu d'Or, or Gold Crown. See Ecu.

The second was a Third of the first: But the Money has been so disdained.

The Term Frank, however, is still retain'd, as the Name of a Money of Account. In this Sense it is equivalent to a Livre, or 20 Sol, or 1/2 of a French Crown. See Livre.

Thus they lay indifferently, a hundred Franks, or a hundred Livres. See Livre.

FRATERNITY, Brotherhood, the Relation, or UNION of Brothers, Friends, Partners, Associates, &c. See Brother, and Company.

FRATERNITY, in a Civil Sense, is particularly us'd for a Guild, Affiliation, or Society, of Persons, united into a Body, for the purposes of Industry, or Commerce, &c. For the Origin, Ue, &c. of Fraternities, see Guild.

FRATERNITY, in a Religious Sense, is a Society of Persons, meeting together to perform some Exercises of Devotion, or Divine Worship.

In the Roman Church, such Fraternities are very numerous and considerable; being most of them established by Royal Patent: As the Fraternity of the Society of St. John of God, at Brussels. Thus the establishment of any such Fraternity in this Diocese. At Rome there is a Fraternity called the Archi-Fraternity, or Grand Fraternity, under the Title of Our Lady of the Rosary, established in the favour of the Souls in Purgatory; approved and confirmed by a Bull of Pope Clement VIII. in 1584.

There are nine different Sorts of Fraternities, or Confraternities, or in France, c. n. 1 of Devotion. 1st Of Charity, 2d Of Devotion, or Gratitude, 3d Of Pious Devotion, 4th Of Pious Devotion, or Pompierisme. 5th Of Merchants, to procure the Divine Favours on their Endeavours. 6th Of Officers of Justice. 7th Of the Sufferings of Christ. 8th Of Arts and Trades of divers kind, &c. for the benefit of the Church.

Fraternities, in that Calld Staitestories, derive their Origin from the Heathen; as is shown by Polydore Virgil, in his Book de Inventione Rerum. The Fraternity, or Brotherhood by the Christians, has et febibly pur'd them of any Impurities, deriv'd from so sourse.

Nuntius Pomplancis is fail to have established Fraternity of Arts and Trades in antient Rome; and to have prefer'd the Sacrifices each Profession was to perform to the Patrons or Turtulian Gods he had appoin'd them. See College.

FRATERNITY is also a Title, or Quality. See Quality.

Kings and Emperors gave it each other; to do Bishops, and Monks. We meet with it frequently in Authors under the Eastern Empire, both Greek, and Latin; Educative, or Fraternal, or Fraternity.

FRATERNITY of Arms, was an Alliance, or Affiliation in Arms, antiently concluded between two Knights, who there-
Summer, call’d Freebies; which, as they may be figured out by a dexterous Application of the Fingers, many People have been known to sold in the Streets, to Kami, who is a Crane-
skin, whose Head is the little Speck above-mentioned; whereas,
in reality, they are little Pelotons of Sweat, dried in the
Fores of the Skin; the outer Tip, or Extreme thereof is Free-
ble, and the Inner on the Ball, is called Sweat. Hence, in the
Air, arrested by the gushing Matter of the Sweat it self
They are found more about the Nose and Skin, than any
where else; and the Laws of the Body are more free’d
there, and consequently the Fores more patent, to receive the
Dull, &c.
From this Theory follows, that there can scarce be any
Feather, or Procretion made. or Preserv’d of Freebies.
Temporary ones there may be, which shall draw out and
disperse, what Matter is already gather’d: But the Spaces
will fill up again in time.
Blessed is he that is joined with Alum, and after the Alum
has precipitated, expos’d three or four Months to the Sun
in a close Philo, Mons. Hennepin observes, is one of the best
Remedies known for Freebies. It also is a Licitum con-
ering the Pappe, and eludes the Censor, and disfils the
FREI, A Term variously used, but generally in opposi-
tion to confin’d, confined, necessitated. See FRANK.
Thus, a Man is said to be free, who is out of Prison:
And a Bird is free, when let out of the Cage: Free from
the Necessity of doing, or not doing; that is, All things
But in speaking of Things endued with Understanding, the
Word Free has a more peculiar relation to the Will, and
implies its being at full Liberty. See Liberty.
The Stocks main, that their fage or wife Man alone is
Free. See Stock.
Free is also used in opposition to Slave.
The Moment a Slave foots on English Ground, he
becomes free. The first Legaty the ancient Romans
could leave their Slaves, was their Freedom. See Slave.
Servitude, and Manumission.
Free Will, see Will.
Free Speech, see Speech.
Free Self, see Mason.
Free State, is a Republic govern’d by Magistrates
elected by the free Suffages of the Inhabitants. See State.
Free from, is a Term which expresses an absolute
Non-Attachment, are those not sub-
ject to any particular Prince; but govern’d, like Republicks,
by their own Magistrates. See Empire.
There were Free Cities, Liberal Cities, even under
the ancient Romans Empire: Such were those to whom the
Emperor, by the Advice, or Confect of the Senate, gave
the Privilege of appointing their own Magistrates, and
governing themselves by their own Laws. See City.
Franc-Bench, or France-Benoit, signifies that Elate in Cap-
nyhold Lands, which the Wife hath after the Death of her
Husband, for her Dowry, according to the Custom of the Man-
over in England and the Low Countries.
Thus, or at least in the County of Hereford, the Relict
of a Copyhold Tenent is admitted to her Free Bench, i.e.
to all her Husband’s Copyhold Land, during her Life, at
the Death of her Husband, she has the Free Bench.
Freeholders calls Free Benche a Custum, whereby, in cer-
certain Cities, the Wife shall have her Husband’s whole Lands,
&c. for her Dowry.
Common Bench, or different Benchs have different Cur-
om: Thus, E. gr. in the Monos of Earl, and Well Emb-
borne in Berkis, if a culuminary Tenent die, the Widow shall
have her Free Bench in her Copnyhold Lands, demels fos-
ors and houses for her Interest; but if the commit Inconstancy, she for-
tells her Elate: But if she will come into Court riding
backwards on a black Ram, with her Tail in her Hand, re-
hearsed, and in a manner like a Phæbus, the Court is then
bound by the Custum to retore her to her Free Bench.
The like Custums are in the Manor of Chudweardor in
Berkis; that of Tor in Devonshire, and other Parts of the West
side of England.
Free Bond, Free Bond. In some Places three Feet, in
some more, and in others, is claimed by way of Free
Bond beyond, or without the Fence.
Free Bond of Redemption, or Free Bond of Mer-
edowsen, orson Frank Bodo domum pedem, & damnatu,
Free-Capel, is a Chapel founded by the King, and
by him appointed from the Jurisdiction of the Ordinary. See
Chapel.
Thus, a Subject may be licenc’d by the King to build such
a Chapel, and by his Charter may exempt it from the Vi-
bration of the Usus and Taxes.
Free Soil, see Frishtoll.
Free Warren, the Power of granting or denying Licence
to any one to hunt in such and such Ground. See large.
Free Fair, see Fair.
Free Stone, a white Stone, dug up in many Parts of Eng-
land, that works like Ash-batter, but more hard, and
able; being of excellent use in Building, &c. See Stone.
It is a Kind of Greet, but finer sanded, and a Smoother
Stone.
Freebooter, or Freibrot, a Name given to the
Capers, or Pirates, who scour the American Seas; par-
icularly such as make War against the Spaniards. See Be-
caker.
The French, &c. call them Edijngert, deducing the Word
from the English Edijngt, or Edijger; by reason the first
Adventurers of this kind were the People of St. Domingo,
who made their Excurisions with Edijgers, which they had
necessity to do, in a Country so full of Indians.
Freedom, the Quality, or Habit of being Free. See
Free.
Freedom of the Will, a State, or Faculty of the Mind,
which all the Motions of our Will are in our Power; and
we are enabled to determine on this, or that, to do, or
ev, without any Force, or Constraint from any foreign
Cause whatever. See Liberty.
The Schoolmen dillingtly two kinds of Freedom.
1. Freedom of Contraction, whereby we are at our
choice to sell, or not, to love, or not love, &c.
Thus, if I give my Friend a Power to take my Horse;
that Friend has Freedom of Contraction, with respect to
the Horse; for it is in his own Power, to use him,
or let him alone. See Contraction.
2. Freedom of Contract, all Countries, is that where
by we are at our choice to do good, or evil; be virtuous,
or vicious, take a Horse, or a Lion.
Thus, if I offer my Friend a Horle, or a Lion; and give
him this Power to take it, or not take it, as he will; he has
in that respect, Freedom of Contract, over the Horse and
Lion. See Contrary.
But the Logicians charge this as a faulty, or unartful Di-
version; in regard one Member of the Division is contain-
ed in the other, as in the division of the Genus A, in the
free, in respect of Contraction; is also free in respect of
Contrary, and free, in respect of Free; tho’ not vice versa:
For if it be free for my Friend to take the Horse, or the Lion;
it is also free for him to take either both. For he is free to take
one of them, without a Freedom of choosing which to take.
Yet is the Distinction of some use, as it intimates that
the Will is not always poss’d of both kinds of Freedom;
and sometimes of one, and not of the other. See Liberty.
The Will, tho’ free, has not a Liberty of Contrary:
Thus, any evident Truth being propos’d to the Mind, &c.
That the Whole is greater than a Part, we have a Power of
not affirming thereof, by diversing our Attention to some
thing else: But we have not a Power of differing from that
Proposition, and judging that the Whole is not greater than
the Part.
However, the Multitudes commonly hold, that with respect
to the Supreme Good, Mankind has a Liberty of Contra-
exion, inasmuch as he may abmain from the Love, or Per-
formances of that Good; But not a Liberty of Contrary, whereby
to hate Goodness.
Add, that tho’ the human Mind may have a Freedom of
Contraction, with respect to all Objects, even the Supreme
Good, yet it has a certain Power to judge certain Particulars, which either are, or appear to be Good;
The Will having such a natural Propenency to Good, that
it cannot deere evil, but under the Notion of Appearance of
Good. See God, and Evil, &c. see also Necessity.
Freedom of Thinking, see Deem.
Freedom of Conscience, see Liberty, and Tolera-
tion.
Freedom of a City, Town, &c. A Right, or Capacity
of exercising a certain Trade, or Employment in a City, or
Town Corporate; and of being elected to the Dignities and
Offices thereof, procured generally by serving an Apprentic-
ship, for a certain time, or by being admitted, with Money,
and sometimes in confer’d as a Favour or Compliment. See City,
Corporation, Apprentice, &c.
Freind Hol, or Frank Tenement, or Liberal Tenen-
montum, or Town, or City, which a Man holds in Free,
Free Ten, or for Term of Life.
Freehold is of two kinds; in Deed, and in Law.
Freehold in Deed, is a Tenement, or Liberty of Land, or Tenement in
Free, Fee, or Fee Ten, or Fee Tail, or for Term of Life.
The other is, a Liberty which a Man has to such Land or Tenement before his Entry, or Seizure.
Freehold is likewise extended to offices as a Man holds in Fee, Fee Tail, or Fee Ten.
British defines Frank Tenement to be a Possession of the
Soil, or Services issuing out of the Soil, which a Free-man
holds in Fee, or at least for Life, tho’ the Soil be charg’d with
Mortgages.
Freehold is also sometimes taken in opposition to
Vilemage. See Vilemage.
Lambard observes, that Land, in the severest time, was disengaged into Rockland, i.e. holden by Bois, or Writing; and Fakkland, held without Writing.

The former, he says, was holden on a better condition, and by the better sort of Tenants; as Noblemen and Gentle- men; the latter we name Freeholders. The latter was mostly in Reformation of Peasants; being the same with what we now call at the Will of the Lord. See Rockland, and Freeholders.

In Reg. Judic. it is express'd, that he who holds Land upon an Execution of a Statute Merchant, until he hath satisfied the Debt, rent or librum timenctum libri & aflatum ex illo, in the fame Word to the Tenant for Beings; The Measure of which seems to be, not that four Men stand as Free- holders, but as Freeholders for the Time till they have receiv'd Profits to the value of their Debt.

The ancient Laws of Scotland, Freeholders are call'd Mile- Knights, Citizens.

FREEZE, or FREE, in Architecture, that Part of the Entablature of Columns, between the Architrave and Cornice. See ENTRABLE, 185.

The Freeze is properly a large, flat Face, or Member, separating the Architrave from the Cornice. See CORNICE.

The Amiens call it la Zoppor, Zeop, by reason it was usually enrich'd with Figures of Animals; and our Delineation FREEZE has a like Origin, being form'd of the Latin Phryg(o), an Embroiderer, because commonly adorn'd with Sculptures in Basso Rilevato, inimitating Embroidery. The Freeze is laid to form a kind of Bar to the Heads of the transverse Beams that fasten the Roof or Covering.

In the Tufick Order it is quite plain. In the Doric, corn- iced with Tripyles: In the Iotic, 'tis sometimes cornic'd or arch'd, or swelling; particularly in which case 'tis call'd by Friso- trinis, Phintorinis, q. d. pillaw'd: In the Corinthian, and Composite, it is frequently jointed to the Architrave, by a little league of Scallops: The Roman, and Composite Orders it is usually adorn'd with Sculpture, Figures, Compartments, Histories, Foliasges, Festoons, &c. See TUSC, DORIC, IOTIC, &c.

As to the Height of the Freeze, 'tis in the general much the same with that of the Architrave.

The Tuscan FREEZE, Phirostrinis makes 50 Minutes; Vignola, 53; Palladio, who makes it swelling, gives it but 25; and Serlio, who makes it arch'd, without any ornament, gives it 45 Minutes: In Piranesi and Solomon, 50 or 40 Min. In Palladio, Soc. 44. The Iotic, Piranesi makes it flat, adorned with Acrostich Leaves, Lions, &c. and makes it swelling, 45 Minutes; Vignola, who also makes it flat, gives it 45 Minutes; And Palladio, who makes it convex, or swelling, 57 Minutes; and Scamozzi 38. The Corinthian, Piranesi carveth with Acrostich Leaves, human Figures, &c. and makes its Height 37 Minutes: Vignola, 41; Palladio 38; and Scamozzi 54. Lastly, the Composite, which in Piranesi is for with Carnoules, and corn'd between them, is 51 Minutes; Vignola, which makes it like Piranesi, only without Carnoules; and Palladio who makes it swelling, only 50 Minutes: and Scamozzi 53.

From the Variety of Enrichments practis'd on the Freezes, they become variously denominated.

In the Corinthian Order, the Freezes are those whose Profile is a Curve; the best Proportion whereof, is when drawn on the Base of an equilateral Triangle.

In some the Swelling is only 4-top, as in a Conico: In others at Botton, as in a Palladian.

Ruffio FREEZES are those whose Cornices are suffocated, or imbold; as in the Tuscan Freeze of Palladio.--

Plainriffio FREEZES are those orn'd with Flats of imagi- nations; and as the Tuscan Freeze of the Frontispiece of Nero: Or with Natural Leaves, either in Clusters, or Garlandes: Or Continued, as in the Ionic of the Gallery of Apoll(1) in the Louvre.

Historical FREEZES are those representing Sea Horse, Tritons, and other Attributes of the Sea; or Shells, Bathis, Grotto's, &c.

Historical FREEZES are those adorn'd with Basso-Rilevato's representing Histories, Sacrifices, &c. as the Arch of Titus at Rome.

Symbollical FREEZES are those adorn'd with the Attributes of Religion; as the Corinthian, to be believed behind the Camera of the same, which are represented the Instruments and Appurtenances of Sacrifice.

FREEZE of the Capital, see HYPOTRACHIELLUM.

FREEZE, in Commerce, a kind of Cloth, or Stuff; and hence,

FREEZING, CONSOLATION, in Phonology, the Fixing of a Fluid; or depriving it of its natural Mobility, by the Action of Cold: Or the Action of freezing a Fluid or Body, and that one, call'd Ice. See Ice, and Cold.

The Cartellans define Freezing to be the retarding of a fluid Body, harden'd by Cold; which follows naturally enough from their Notion of Fluidity, where the Parts are render'd motionless by the Freezing Motion.

In effect, one may pretty falsely lay with some of those Philosophers, That Water only freezes, because its Parts lose their natural motion, and adhere closer to each other. See

The Principal Phenomenon of Freezing are,

1. That Water dilated or rarify'd, and all Fluids, Oil excepted, in freezing, i.e. take up more Space, and are more Tenacious of their shape, than before.

2. That the Bulk, or Dimensions of Water is increased by freezing, is Matter of abundant Experiment; and here it may be proper to observe the Proceeds of Nature.

Griff is pleased to inform us, That B D full of Water to D, being immerg'd in a Vessel of Water, mix'd with Salt, R T V Y, the Water presently rises from B to F; which seems owing to the Cold of the Earth upon the Surface of the Vessel, being plung'd into so cold a Medium. Soon after, from the Point F it continually descends, condensing, till it arrives at the Point G; for some time, it seems to remain at rest. But it soon recovers itself, and begins to expand and rising from G to H, and from thence, lastly, by one violent Leap, mounts to I. And here the Water in B is immediately feces all thick, and cloudy; and in the very Instant of this Leap, is converted into Ice. Add, that the Surface of the Water is growing harder; and yet the Water in the Vessel B is freezing, the Flux of Water is continued above I, towards D, and it at length runs out at the Vessel E. This proves, that the Water in B is not only of their Specific, but also of their Absolute Gravity, by freezing; so that when thaw'd again, they are found considerably lighter than before.

3. That freezing Water is not so quite transparent, as when liquid; and that Bodies don't perf_per to freely float thro' it.

4. That Water, when froze, evaporates almost as much as when fluid.

5. That Water does not freeze in Vacuo; but requires the Presence and Contiguity of the Air.

6. That Water which has been boiled, does not freeze so quite as readily as that which has not.

7. That Water which is not covered with a Surface of Olive of Oils, does not freeze so readily as without it: And that Nut Oil absolutely prevents it under a strong Froid, when Olive Oil would not.

8. That Spirit of Wine, Nut Oil, and Oil of Tartarine don't freeze at all.

9. That the Surface of the Water, in freezing, all wrinkled, the Ridges, or Wrinkles being sometimes in parallel Lines, and forms, like Rays, proceeding from a Centre to the Circumference.

The Theory of Freezing, or the Method of accounting for their Phenomena, by the Knowledge of their Temperature.

The great Principles different Authors have gone upon, are either, That some foreign Matter is introduc'd within the Pores of the Fluid, by which means it is fix'd, its Bulk esteem'd.

Or, that some Matter naturally contain'd in the Fluid, is now expell'd; by the Abstinence whereof the Body becomes fix'd, &c.

Or, that there is some Alteration produc'd in the Texture or Form, either of the Particles of the Fluid it self, or of something contain'd within it.

To some one of which Principles all the Systems of Freezing are reducible.

I. The Cartellans, e. g. who ascribe all to the Quotailet of the Part of the Fluid, before in Motion; account for freezing from the Freezing of that Quotailet, in order to shut up the Pores of the Water. The Activity of that Ether, or Subtle Matter, they hold to be that which gave the Particles of the Fluid the same Motion; Consequently, upon the Ab- sence of this Matter, the Fluidity must cease.

II. The others of the fame Socaffle ascribe Freezing to a Di- minution of the ifual Force and Efficacy of the solar heat, occasioned by an Alteration in the Temperature of the Air, whereby Heat is incapacitated for agitating the Parts of the Fluid as usual.

1st. The Gaffondet, and other Correlugators, with more Probability ascribe the freezing of Water to the Indexes of Multitudes of cold or frigorific Parties, which entering the Liquor in Swarms, and differing themselves every way into the Pores of the Water, and binder the wonted Air in the Pores, and lastly causeth, as it were, into the hard and constant Body of Ice. And hence its Incurse of Dimensions, Coldness, &c.
This Introduction of a foreign frigittoric Matter they fap-
pol ite to the Globules of Air, as that which characterizes and
distinguishes it from Congelation, &c; for it is now to be
considered indirectly by a hot, or cold Mixture; but the latter only
by a cold one. See Congelation.
On these frigittoric Particles are, or how they produce their
Effects, is Master of Debate; and has given occasion
to various Systems.
Heldi will have it common Air, which intruding into the
Water, by its Transparentness, &c; with the Particles of the
Fluid, prevents their Motion, produces these notorious
Bubbles obo'ded in Ice; thus expanding its Bulk, and ren-
dering it specifically lighter: But this Opinion is overturned
by the following Experiment: Let a Quart of Water be frozen
in Vessels Hermaphroditically, &c; and into which the Air is
admitted: &c; yet the Bubbles will be as numerous herein as it
were in the open Air. Add, that Oil is condens'd, in freeze-
ing Water; and that Oil is not condens'd in atmospheric Air.

Others, and the greatest Number, will have the freezing
Matter to be a Salt; arguing, that an Excels of Cold will render
Water torpid; but never congeal it, without

The Reason this Effect only arises in severe Winter Wea-
ther, is, that 's then only, that the retarding Action of the
atmospheric Air, is more than equal to the Power or Princi-
ple whereby the Water is resolved in motion, or dif
fr'd and mix'd in a due Proportion, that is the chief Cause of
Freezing; Congelation bearing a near relation to Crystalliza-
tion. See Crystallization.

This Salt, they suppose of the Nitrous kind; and to be
furnish'd by the Air, which is generally allow'd to abound
in Nitre. See Air, and Nitre.
How the Particles of Nitre may prevent the Fluidity of
Water, is very exactly account'd for: These Particles are
suppos'd to be so many rigid, pointed Spicula, which are
easily driven into the Snamas, or Globules of the Water;
which become, by becoming variously mingled and entangled ther-
with, by degrees, considerably smaller.
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This Option is support'd by the known Experiments of
Arrest and Freezing of a new Theory.
A Quantity of common Salt or Petre mix'd with Snow, or Ice pulveriz'd; and the Mixture don't'it by the
Fire; Upon immersing a Tub full of Water in the Solution;
the Mixture is immediately dissolved; and the Water is
perfectly freezes, even in warm Air. Whence it is clear, that the Conduc-
ton of the Salt, by the Gravity of the Mixture, and of the
incumbent Air, are driven thro' the Pores of the Glass, and mix'd with the Water: Consequently, the Salt has the Effect, or
inasmuch as we know expressly that the Particles of
Water cannot find their Way thro' the Pores of Glass. In
this Artificial Freezing whatever Part the Mixture is appli-
ced in, there is perfectly produc'd a Snow, or Laminar of the
Phle-

Against this System the ingenious Author of the Nouvelle
Cours d'Academie des Sciences, a la Nature de la Gace, objects,
That it does not appear, that the water is capable of the Ap-
oposition of Ice; but that if it did, it would come short of
accounting for some of the principal Effects. For how, for
instance, the Particles of Nitre by entering the Pores of
Water, and fixing the Air, prevents the Water to so
and render it specifically lighter? Naturally they should aug-
ment its Weight. This Difficulty, with some others, threw
the Particles of Nitre, by the Authors, into the Air; and
therefore, advances the following one, which seems to solve the

This, indeed, is evident from previous Accounts, but it is not

III. Water, then, freezer in the Winter only, because its
Part is more easily condens'd together, mutually embarras-
se that a foreign Matter might be added, and the
Caufe of this closer Union of the Water, is the Air; or
rather an Alteration in the Spring and Force of the Air.
That there are an infinite Number of Particles of gros &
small Globules of Air included in every Drop of Water, is
sufficiently evident from Experiment: And that each Particule of Air has the Virtue of a Spring, is confed'd: Now, this
Author argues, that the final Springs of gros Air mix'd with the
Water, contain more Air, than can be dissipated, and thus unbend themselves more, than at other times. Hence, these
Springs thus unbending themselves on one Side, and the ex-

duced from the Surface of the Water on the other; the Particles of Water thus mix'd together, must lose their Motion and Fluidity, and form a

This is Frustrated by the Principle on which it

But the System has its Foible: The Principle on which it

Whether Water, or Air, whether it is worth mentioning, what
some Authors have advance'd, to account for the Increase of
Bulk and Diminution of Specific Gravity of frozen Water:
Such the Aquatic Particles, in their natural State, were not in our Power to collect, or to form the Num-
ber of many Peres: But that by Congelation they are
chugg'd from Cubes, to Spheres; whence a Necessity of a
deal of empty Space between them. Cubic Particles are con-
noted to constitute a fluid, than spherical ones; and spherical Particles left disjoued to form a fird, than
cubic ones.

This may much the Nature of Fludder and Firnness early

After all, for a confilling Theory of Freezing, we must
recurr either to the frigittoric Matter of the Corporulation;
confess'd under the Light and Advantages of the Neono-

<br>
be brought nearer together, and thicken'd by the Condensation of the Air; as, on the contrary, a Rarefaction of the Air, and Augmentation of its Fluidity, must divide and separate them.

If now the same Thing happen to all Liquors that have in their nature any Salt; if the Warmth of the Liq.

uid keep the salt out of solution, and, if the Osmosis of a Cellar, or of Ice give occasion to the Molecules of the dif-

sol'd Salt to approach, run into each other, and floot into the Air, for their own Safety, or the Air, which is allow'd a Fluid, be exempt from the general Dispersal of the Liquids.

'Tis true, the Nitre of the Air being greater in cold Weather, than hot; must have less Velocity; But fill, the Pro-

duct of its salt, more into Solution, into the Velocity remaining, will give it a greater Momentum: Now, if the Cold of Winter, and the Freezing of the Air, in Summer time. Those Liquors, in all Probability, from a Diminution of the Motion of the etherial Medium, by its acting against the Ice and Salt together: And the Air, for all its Graciousness of Heat, is not able to present its Concern.

FREEZING, or Raining Ice, a very uncommon kind of Shower, which fell in the West of England, in December, August, September, that has divers Accounts in the Philosophical Trans. This Rain, so soon as it touch'd any thing above Ground, as a Bough, or the like, immediately fet tled into Ice; and by the weight of its own Weight, broke all down with its Weight. The Rain fell that day on the Snow, immediately froze into Ice, without freezing in the Snow at all.

It made an incredible Distraction of Trees, beyond any thing that has ever been known; and it was said that distant fa shions of the Court of Wind, says a Gentleman on the Spot, "it might have been of vast Importance."

I weigh'd the Spring of an Ash Tree, of full three Quar-

ters of a Pound; the Ice on which weigh'd 1 Pound, broke all down with its Weight. The Rain that fell on the Snow, immediately froze into Ice, without freezing in the Snow at all.

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The several Nations who speak Siziliano, do not much speak the same Language, as different Dialects of the same Language. In several Parts of Europe there are as many different Dialects of it as there are Cities, and there are reckon'd no fewer than ten or twelve Dialects, some of which differ as much from the common Italian as from the French, or Spanish. In Holland, the Seamen of Her- teren, who are reckoned the most Engineers of the Dutch Nation, speak a different Dialect of the mother Tongue of Amsterdam, and the Comites of the Zuyder Zee. They who understand Castilian, will not understand the Language of Catalania and Cordova. The High Dutch is quite different from the Low Dutch in Friesland, Frise, and East Fries, Low Countries, as at Leyd. Bohemia, Hungary, Croatia, &c. are Countries belonging to the Emperor; yet speak a Lan- guage different from that spoke at Vienna. The King of Spain understands Castilian, but as to the vulgar Language, will not be understood by his Subjects in Pomerania, Lauen- land, &c. And the like may be observed 'of the King of Denmark, with regard to his Subjects of Norway and Iceland. It is not enough to speak a Language of St. Domingo, Bondebiheri, &c. they speak the same Language as at Paris, and throughout the rest of France.

For a critical Acquaintance with the Languages of the French Tongue, see the Remarks of M. Francisque; and the Observa- tions of M. Corneille have made on those Remarks. The Remarques de St. Domingo; and the Dictionaire de a Breton Gentleman by the same Father. The Conversa- tions de Frigo et Eugene: The Observations of M. Ne- moy, and his Englysiniger, with those of M. Huet: Fe- niger, and his French Grammar; and that of the Abbe Regnier. As to the Vulgar Language of Abbe Dugas, one of the greatest Writers in French, and the other on the Conform. French Bread, a Sort of Bread, valued for its Delicacy. See Bread.

French Butter, by taking half a Bushel of fine Flower, to ten Eggs, and a Pound and half of fresh Butter; and in- to that putting as much Yeit with a Manchet. Then, tempering the whole Milk with new Milk pretty hot, and after a half hour, which done, mix it into Yeit and Roses, and wash it over with an Egg beaten with Milk. The Oven not to be too hot. See Baking. French Man, see Francisca, and Englysiniger.

Frenchman, see Francisca, and Englysiniger.

Frenchman, see Francisca, and Englysiniger.

Frenchman, see Francisca, and Englysiniger.

Frenchman, see Francisca, and Englysiniger.

Frenchman, see Francisca, and Englysiniger.

FRENZY, and FRENETIC, see Phrenics, and Phren- etic.

FRESNO, a kind of Painting, perform'd on fresh Plai- ser, or on a Wall lind with Murar not yet dry, and with Wa- ter Colour. See Painting.

The last form of Painting has a great Advantage: By its incor- porating with the Wall, and dryning along with it, it is render'd extremely durable: it is ever as fresh, and when it is dry, as fresh with the Colors as when it was fresh. See Water. What we borrow the Term, call it a Fresco: Vitruvius, lib. 7. c. 5. calls it Uta Selloria. Painting in Fresco is very antient; having been practis'd in the earliest Ages of Greece.

In Florence, they call their Walls and Vaults, newly paint- ed with Lime and Sand; But the Plaster is only to be laid, in proportion as the Painting goes on; no more being to be done at once, than the Painter can dispatch in a Day, while it is dry.

Before he begins to paint, a Cartoon or Design is usually made upon Paper, to be call'd, and transfer'd to the Wall, a bor-four hour after the Plaster is applied. The Fresco is a Picture, and we may remark in Vitruvius, what infinite Care they took in making the In- crustation or Plat elaing of their Buildings to render them beautiful and lasting. They used to model the plaster, and plastering Sand preferable thereto; both as it does not dry so hastily; and as being a little brownish, it is fitter to lay Colours on, than a Ground so white as Stuck. In this kind of Painting, All Coats of Paint are interwoven, and Colours and mix't in in all its Beauty, the Colours must be laid on quick, while the Plaster is yet moist; Not musty or they ever be retouch'd, dry, with Colours mix't up with the same Water, for they will not work; nor for- merly by reason such Colours grow blackish: Nor do they prefer any preserve, but themselves as were laid on hastily at first.

The Colours used, are White made of Lime, flack'd long ago, and white Marble Dust; Oker, both red, and yellow, Violet Red; Verditer; Lapis Lazuli; Small; Earth Black, &c. All which are only ground, and work'd up with Wa- ter; and most of them grow brighter and brighter, as the

Presa dries. See Colour, White, Black, Verditer, Lapis, &c.

FRESH Water, is that not con'dur'd or impregnated with any of the Saltier Particles, enough to be difcoverable by the Sence. See Water.

Such generally is that of Springs, Rains, Wells, Lakes, &c. See SPRING, RAIN, WELL, LAKE, &c.

But that part of the Water on the Coast or near the Mouth of the Ocean or River is the original and original State of Water to be Salt: The Freswater he happens to be accidental, and to owing to the Vapours of Plants, and the Breath of Animals therin; and to the Exhalations from the Earth.

Others will have Water originally fresh; and take its Salmets to be accidental: To account for which, a Number of Hypotheses have been fram'd. See Saltiness.

The Freswater is of a very light clear Colour; and a bareful Quality. It renders it not only noxious to the Table, but greatly prejudicial to the Body: And it is generally a- greed, that those Waters, extemis partibus, are best, not only for Colour, but also for the table, i.e. Baking, Boiling, Brewing, which are the free'st from Saltiness.

Hence, various Methods have been contrived for examin- ing the Freswater of Waters; and of making fair Water, of which we shall treat hereafter.

Mr. Boyle gives us a Method of examining the Freswater of Waters, by means of a Precipitate, which calls down any fine impurity floating therein.

Into 1000 Grains of well boiled Water, he puts one Grain of Salt; and into the Solution he adds a few Drops of a strong well filtrated Solution of well refrid'd Silver, diffus'd d'le clear Water, which, upon which there immediately appears a whitish Cloud, a precipitate of Silver, settling to the Bot- tom, and there settles to the Bottom in a white Precipitate, which is the inaine Matter of the Fluid.

If these were required, would examine Water to a greater Nicety, we here preserve it. He has discover'd Salt in Water, where there was but one Grain of the Salt in 2000, say 5000 times the Weight of Water in it.

The Experiment was tried before the Royal Society, in 1692. by Dr. Sloman, where it was likewise found that a Drop or two, even of Spirit of Salt, mix'd with common Water, would not be discover'd by the same Method.

Dr. Hook, in the same Year, a Letter before the Royal Society, on a Method of his own, for discovering the finall Quantity of Salt contain'd in Water, on a Principle of the same Kind.

The Operation was perform'd by means of a large Pois of Giess, of the Shape of a Bot Head; the Ball thereof three Inches in Diameter, and the Neck 4/ of an Inch. This being to pass, with red Lead put in it, as to make it very lighter than fresher. Water; and then finall by the small Stem, which was graduat'd, to the End of a nice Beam of a Balance; and the Degree of Division of the Beam was placed against a Line in the Glass. Upon infusing a Quantity of Salt, only equal to the two thousand Part of the Weight of the Water, the Neck of the Pois sink near half an Inch lower in the Water.

Water is very fair to be called Freswater, if, a Ser- ceter, and has been long fought with great Attention. Dr. Light takes the most easy, safe, and natural way of procuring Freswater from the Sea, to be by putting Sea Plants, as Alga Marina, or common Sea Weed into a Quantity of the Water, in a Glasses Body, with a Head, Stop, and Re- ceiver: From which a fresh, sweet, and potable Liquor will continually dillill.

The Naso at length declared his Secret of making Sea Water Freswater.

It consists first, in a Preparation, made with Oil of Tur- tor, which he can prepare at a small Expence. Next he makes a Furnace contriv'd to take up little Room, and which, with very Cheap, and in 24 French Quarts of Water in a Day. For the Cooling thereof, instead of making the Worm puts thro' a Veffel, that is fill'd with a Wax that is cold. The Worm puts thro' a Hole made on pur- pose out of the Ship, and carried on again at the Bottom of the Sea Water does the Office of a Refrigerator. To the two proceeding Operations he joins Frituration, which is the roasting of Worms in dry Earth, which he does with the distill'd Water, and at length furnish'd to fettle. This Frituration leaves it perfectly fabulous. Phil. Trans. N° 67. A Freswater, is that which was levd within a Year's Past. Wett. 2. c. 45. See Fres.

FRESH Force, Fresca Fortis, in Law, is a Force done within Forty Days. See Force.

The Fresca Fortis, or the Law of Force, is that done by Lands or Tenements, within any City or Borough; or deferr'd from them after the Death of his Anceser, to whom he is Heir; or after the Death of his Tenant for Life, or in Tall; he may, within Forty Days after his Tale accrue, have his Remedy by an Action, or Bill of Fresca Force. See Fres
FRI

FRIAS, Sicut, Recent Jesuitae, is such a present and active Prosecution of an Offender, as never ceases, from the Time of the Sentence committit, or discover'd, till he be apprehended. See SUTE.

The Benefit of such Perficit of a Felon, is, That the Party persuing shall have his Goods restor'd to him, whereas otherwise they are the King's Goods. Frist-Sute may continue for seven years.

Frist-Sute is either in the View, or without. Man-dants say, That upon frist-sute within the View, Tref-paupers in the Parish may be attacked by the Officers pur-sing them, without the Limit of the Parish. See Frist-Spell, in the Sea-Language, a fresh Gang, to receive the Rovers in the Longboat. See Spell.

Frisia Proper, or Frisia Major, signifies the falling down of any great River, into the Sea; and we may salve the Sea hath frisfer Water a good way from the Mouth of the River. As when a man is more or less, they call it a great or small Frisfer Shot.

FREI, or Frey, in Architecture, a kind of Knot, or Ornament, consisting of two Lifts, or small Ellets variously interlaced, or moves; and running at parallel Distances, equal to their Breadth.

A necessary Condition of these Freis is, that every Return, and Intersection be at Right Angles. This is so indis- pensable, that they have no Beauty without it; but become perfectly Gothic.

Sometimes the Frey consists but of a single Ellet; which, if well managed, may be made to fill its Space exceedingly well. A great Number of these were executed; but they were chiefly applied on, when were, flat Members, or Parts of Building, as the Faces of the Corona, and Eves of Cornices; under the Roof, Soffits, &c., on the Piths of Barges, &c.

The Appellation was occasion'd only, that the Word Freis literally signifies the Timber Work of a Roof, which consists chiefly of, Beams, Rafter, &c. laid in a crook each other, and are the first put in, and are the last to be pulled out.

Frey-work, an Embellishment of Freis; or a Place adorn'd with something in manner thereof. See Fret.

Fret-work is sometimes used among us, to fill up, and enclose, a great Number of Cavities; but its principally practiced in Roofs, which are fretted over with Plater Work.

The Italians also apply it to the Mantlings of Chimneys with great Figures: A Cheap Piece of Massif-arras, and as desirable almost in Doors, as harder Materials in the Weather.

FREI, or Frey, in Heraldry, is a Bearing consisting of six Bars, crois'd, and in-terlaced, or frey-work, as in the adjoining Figure. He bears Diamond a Fret Topaz. The Coat Armor of the Lord Master-vizards, and now quarter'd by the Duke of Norfolk.

When it consists of more than six Frets, the Number must be specified.

Some call this the true Lover's Knot; others, Har-rington's Knot, because 'tis his Arm, and Notusformis the Meaning of the Word. Gibbon is for calling it Herauld-Finian Notus Ana- taris.

FRETTY, or FRETTER, in Heraldry, is where there are divers Bars laid a crook each other.

Fretee is of six, eight, or more Pieces. Azur, Frete of eight Pieces Or: The Coat of the Lord Willinghuy.

Colombiere observes, that Frettedly absolutely wad, without Addition, is supposed to be of five Pieces; that is, so many Bars or Crossed, but it's principally practiced in Roofs, which are fretted over with Plater Work.

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LOUIS OF FRICTION.

1. At the Weight of a Body moving on another, is increased, as it is the Friction.

This we see experimentally in a Balance, where when one end is loaded with a weight, and the other is left empty, cally turns; but with a greater, a greater Force is required.

Hence, if the Line of Direction of a moving Body be oblique to the Surface on which it moves, the Force on that side is greater, and the other is less. The Friction is the greater, as we have seen, that is the Line of Direction approaches nearer to a Perpendicular.

It is easily observable, and especially in the Teeth of Wheels, which are frequently broke on this very account. The Friction, therefore, is taken away, if the Line of Direction of the moving Body be parallel to the Surface.

2. 38.-and suppose a Wheel D, to move along it, with its Teeth perpendicular to the Circumference. If one of the Teeth were to slide, the Tooth F, when it touch'd the Ruler, would describe a Right Line on the Surface thereof: And, as the Tooth of the Ruler, F, refills the fame; it cannot advance or break off from the Tooth H, or that F. And the same will hold in the sliding of any rough Surface upon another; where all the Teeth will take place, than can any way arise from the Restitution of the first Tooth, if that by the Gears or the Tooth along the Ruler, then the Tooth H will no longer refill its Motion, only as it is to be heisted out of the Cavity Fever the Eminent of the Tooth H: And the fame holds in the polishing of any rough Surface upon another.

Hence, in Machines, left the Friction should employ a good Part of the Power; Care is to be taken, that not Part of the Machine slide along another; if it can be avoided: But if any Motion is to be employed, the Power must be placed in the moving Part, and the Friction in the other, and with this View it may be proper to lay the Axes of Cylinders, nor, as is usually done, in a Groove, or Converge Matrix; but between little Wheels, A B C D Fig. 39. moven on the other Surface by the teeth of the Tooth H, or that F; and the Diameter of the Axis of the Wheel should be as small as possible, with regard to that of the Tooth, that as the latter the axis, the power will be the Motion of the Surfaces of the Friction, and the other the Loss of Power; but that for the Motion always goes diminishning from the Circumference to the Centre. And for the fame Reason the Teeth of dented Wheels should be as small and thin as possible: For a Tooth catching on a Tooth, or the like, is as a Surface equal to its own, and is to be digged out in a certain time by pulling over a Space equal to the Surface: Consequently, the less the Surface, the less Space it has to move; the littleness of the Surface diminishing the Resistance of the Friction, not as it is a less Surface that rubs, but as there is a less Space to move.

Calculation of the Quantity or Value of Friction.
The Friction is a Point of the utmost Importance in Machines; and by all means to be considered, in calculating the Force thereof; Yet it is generally overlook'd in such Calculations: But this, principally, by reason its precise Value is not known.

It is not yet reduc'd to certain, and infallible Rules: The calculation of Friction is one of the complex and difficult branches of Mechanics, a which a moving Power has from the Machine, either on account of its Distance from a fixed Point, or of the Direction in which it acts. And in all the Demonstrations it is supposed that there is a certain Motion, as constant as possible; and posisth. Indeed the Engineers expected, that in the Practice they should lose part of the Advantage of their Force, by the Friction: But how much, it is supposed nothing but the Friction will suffer in the Practice, where an Attempt to fertile, by Experiment, a Foundation for a precise Calculation of the Quantity of Friction; and M. Parent has been adduced, from Reasoning, and Geometry: But their Theory, however warranted, is not generally, and fully received.

M. Amontons's Principle, is, that the Friction of two Bodies is as the Weight of them, and the Frictional Force whereby they bear on each other; and only increases as the Bodies are more firmly press'd, or applied against each other; or are charged with a greater Weight: But that it is a veger Error, that the Quantity of Friction has any Dependence on the Bigness of the Surfaces rubbed against each other; or that the Friction increases as the Surfaces do.

Upon the first Proposal of this Paradox, M. de la Hire had recourse to Experiments, which succeeded much in favour of the new System. He laid several Pieces of rough Wood, on a rough Table: They Show'd nothing unequal but that the Body had to render them a certain Resistance heavy. And he found, that the same precipice Force, or Weight, applied to them by a little Pully, was requir'd to push each in Motion, nowise differing in Quantity of the Sound Body. The Experiment succeeded in the same manner in Pieces of Marble, laid on a Marble Table.

Upon this, M. de la Hire besought himself to the Rationale of the thing, and gave the following Experiment: He supposed a Calculus of the Value of Friction, and the Lossful thereby in Machines, on the footing of the New Principle.

And from this, and others, which are the principal Materials used in Machines, he finds the Resistance caused by Friction, to be nearly the same; when those Materials are asoned with Oil, or other fatty Matter: And this Re- sult he interprets as respecting the Quantity of Friction, he makes it to be nearly equal to a third Part of the Force wherewith the Bodies are press'd against each other.

Before the Friction, the Magnitude whereof determines that of the Friction, there is but one Circumstance to be consider'd, viz. the Velocity. The Friction is the greater, and the more difficult to surmount, as the Parts are rub'd against each other with the stronger Swiftness: So that this Resistance is increased both by the Power of the Body, and by the contrary Force of the Friction, by one half, and reduces it to a Fifth Part of the Weight or Friction. But this Velocity M. Amontons only considers as a Circumstance that augments the Resistance, the Quantity of the Friction being in the first Part of the Motion: So that the Friction will follow the Proportion of the Weight. Only, we are hereby directed to dis- place the Parts of Machines that rub against each other, in proportion to this Ficriction; and not otherways.

And thus the Diameter of the Axis of a Wheel should be as small as possible, with regard to that of the Teeth; that as the latter the axis, the power will be the Motion of the Surfaces rubbing against each other; and the other the Loss of Power; but that for the Motion always goes diminishning from the Circumference to the Centre. And for the same Reason the Teeth of dented Wheels should be as small and thin as possible: For a Tooth catching on a Tooth, or the like, is as a Surface equal to its own; and is to be digged out in a certain time by pulling over a Space equal to the Surface: Consequently, the less the Surface, the less Space it has to move; the littleness of the Surface diminishing the Resistance of the Friction, not as it is a less Surface that rubs, but as there is a less Space to move.

But notwithstanding all the Confimations and Illustrations of the Physics and Mathematics of the Publick, even the Acadamy in its first time, was to be acquainted with this Prophecy: But there is no farther, and the Shape of the Surface always excluding the Confusion of the Surface. In ef- fect, the Contrary seems capable of a Metaphysical Demon- stration.

If two Bodies with plain Surfaces, supposed infinitely hard, and poss'd, be moved along each other; the Friction will be none, or infinitely small: But, if in lieu of such Suppo- sitions, if Motion has no Place in Nature, we suppose two Bodies with rough Surface, the Difficulty of moving one of them on the other, must either arise from this, that the rift is to rub'd, in order to disengage the Parts caught to each other; or that the Parts must be broke and wore off, or both.

In the first Case, the Difficulty of raising one of the Bodies, makes that of the Motion; and of confluence, the Resistance of the Surfaces, and the Quantity of the Friction, and the Surface has nothing to do.

In the second Case, the Magnitude of the Surface would be all; were it possible this second Case could be absolutely finished, the Surface made of Wood, or of any other Body, and the Surface be rub'd and wore against tho' of the other, without raising one of them; it is being vitiable that a greater Number of Parts to be broke would make a greater Resistance, than the Surfaces can oppose to the Rubbing, or Wearing off the Body, the Resistance arising from the伟大的 of the Surface is always combined in the second Case with that from the Friction: Whereas in the former Case that arises from the Surface of the Body, and is unalterable; and that from the Friction is nothing, and may be added to each, which the Body must have been raised to.

Hence,