Of course shirred and tucked velvet or silk can be and often is used over solid frames, but it is not best, and should be avoided if possible; good firm cape net, well braced, is good, but a firm wire frame covered smoothly with thinnest crinoline muslin is of all things the best. In some cases the crinoline covering even may be dispensed with; that depends entirely on the nature of the work, if or not it is needed to secure any part of the tucking or shirring to, as this is the only reason for covering the frame first. In using silk, the under-covering may be even lighter, such as cheap tarlatan.

In all things the worker must use forethought and common sense; the easiest way that will yield the best results is the right way. If the frame is not covered first it will be found of great help to put a double bias band of crinoline one-inch or more wide around the inside of the crown at the headline; it should be sewn to the headwire with a longish buttonhole stitch. This makes a firm foundation to which to sew both brim and crown work, and later the trimming.

To Measure and Cut the Velvet

To measure for the piece required first decide if the upper and under, or outer and inner brims are to be all in one piece. In small hats, toques and similar shapes, the material is frequently in one from the outer headline to the headsize inside the crown; but in large flat shapes this is very rarely the case, the under brim being more usually faced with folds or shirrings of a sheer material. In either case measure the widest part of brim, add to this the necessary turning at headline and edge, then add for whatever tucks you intend putting in and still one inch more for “making.” This last
inch is added even if the work is flat shirrings only; and this measure is taken through the bias, not along the selvedge. To calculate the length piece you need, measure along the edge wire, add half as much again for velvet, or a little more, and double the measure for silk. Now measure your bias material from selvedge to selvedge, and you can easily find how many times that measure you will need to make the strip for the shirred piece.

Importance of Shading and Joins

In cutting have a care that all your pieces have the same slant at the selvedges or they will not join right; cut off the selvedges, and join all the pieces so they form a ring, taking care that all shade the same way, one end of each strip will shade right, the other end wrong (see Fig. 1 showing joined piece); join as for a fold or bind with close backstitch, or better still, baste carefully and stitch on machine.

FIG. 1—SHOWING JOINED BREADTHS

If wires are to be inserted, all seams must be turned one way, and wires pushed in in the same direction, if pushed in against the join they will catch. But if it is just shirrings or tucks the seams are flattened out the same as for binds.

Measuring and Marking for Shirrings

The next step is to mark off for the work to be put in. In flat shirrings this is easily done on the wrong
side. An effective and easy way is to make "blind" shirrings, that is, instead of flat runners, to fold over the material at the desired line, and "whip" the shirring in (Fig. 2); it gives a rather richer effect and shows no stitches on the right side.

FIG. 2—"WHIPPED" FLAT SHIRRING

To return for a moment to the joining; in the case of a toque where the brim is not carried around the back, the strip is left open at one join but usually one or both ends will need a bit joined on to make both straight, or both slant in the same way; the shape of brim at back will indicate which will go on best.

The number of shirrings and the spaces between are matters for the designer to decide, but whatever is done must be accurate, and having decided on this, cut notches in a card to measure by; never do things carelessly.

If tucks are to be made use the same method, decide on the depth of the tucks, the spaces between, and the number (which should have been decided on when cutting the strips); and with the notched card, measure off and pin, and if necessary baste all lines. Having folded the material over for the tuck, pin it with the pins across the work (Fig. 3); then, if you have not an even eye, indicate the line to be shirred with a fine basting thread accurately measured.

All runners must be kept perfectly flat until the entire work is done, therefore cut your threads—which should be strong twist silk for velvet, and machine twist for silk—a little longer than the piece to be
shirred, bringing all joins at the same place, if the piece is long, it makes the drawing up easier to divide the work in half, or even quarters.

**FIG. 3—TUCK PINNED FOR SHIRRING, EDGE TUCK RUN**

The quantities given are the usual rule, but if very fluffy edge tucks are desired, more is to be allowed, but never more than double the length of velvet or three times of thin silk. (See Fig. 4.)

**FIG. 4—DETAIL OF SHIRRRED FACING WITH TUCKS**
To Put on Brim Piece

Having run all shirrings and tucks required for brim, divide the piece in eight equal parts, divide the edge of frame in same way (it is not safe to trust to the eight cross wires of frame as these are seldom accurately divided), and pin section to section. Draw up the thread at the edge first, pin evenly round, dividing the fullness as you pin, do not fasten off the threads, but twist lightly round the pin till after this line is sewn fast to the edge. Sew with tiny invisible stitches along the shirred line, and one-half inch long stitches on the under side, having the stitches come below the edge wire.

Now draw up the next shirrings but not too tight, leave the ends loose, take hold of the piece at the headline and pull down gently but firmly, so that all the little flutes run in an even line from edge to head. Hold the edge of hat against you, inside of crown uppermost, and working from right to left run a shirring thread in the piece just inside the headline, guiding the work with fingers and thumb of left hand; draw this up to fit, and sew inch long stitches inside head and small back stitches outside, if the shirring is a facing; if it is an upper brim do the same around outside base of crown. Now even the fullness of the other shirrings of tucks, and fasten off all ends. This is best done by tying each two ends in a firm knot, then threading each end into a long needle, and passing the thread under the work an inch or two, and cutting close off, it will work inside, and, being long, is not likely to loosen. The intermediate shirring needs no securing to the frame, except in the case of curved frames, where the work must be attached by tiny stitches on the right side and long ones on the reverse. In mushroom shapes the under side must be done first, and in sailors the upper is the first to be set on.

The Double Edge Frill

Some milliners lay two tucks and use only one run-
ner, passing the needle through the four thicknesses of material. We do not approve of this; in the first place it is so thick that it is impossible to make a neat runner, and in the second, the two tucks cling so closely together that the desired effect is lost. Let the tucks be laid and run separately, but with not more than one-sixteenth of an inch space between the two runners. (See Fig. 4.)

**Shirring Velvet and Silk for Wire Casings**

Supposing the hat is to be of silk on both sides, cut your strips double the widest measure from headline to edge, plus any edge tucks; fold this (after joining) through the middle, wrong side out, baste the two thicknesses together, a one-fourth inch from the folded line. Now fold a tuck of the required depth over on each side, so the right side comes outside; be sure they are even, pin carefully with pins across, not along the tucks, and run a shirring thread through the four thicknesses along the basted line, then run a second just below the inner folded edge through the two thicknesses of brim. In this instance the running of the first thread through the four layers can hardly be avoided, as the one casing must hold the tucks, unless they are made to come one on each side of the edge wire, when a separate casing must be run below them, which means four runners instead of two.

Now the spaces are marked off the same as for single faced shirring, the two layers of material carefully pinned and, if necessary, basted together and the shirrings put in in sets of two, with from one-eighth to one-fourth of an inch space between for the wires, and from one to one and one-half inches space between each casing; these must be just wide enough to take the wires nicely, if too narrow the wire will not go in, if too wide, it will look clumsy. Be sure to keep the entire work flat till all is done. In this work it is important that the seams of joins all turn one way.
THE ART OF MILLINERY

If tucks are desired on the upper brim, and the under one is plain shirring, allow extra for these in measuring, and instead of folding the piece through the middle, fold it at the required brim depth, plus one edge tuck, thus leaving the surplus for additional tucks on one side only. Proceed as before directed for edge tucks, then put in first runner of second casing, but before putting in the second runner, pick up, pin and run a tuck, having the shirring line come close against, but not touching, the first runner; now put second runner of casing below tuck runner; on the upper or tuck side three lines of shirring are seen, but on the under side are only the two forming the wire casing. (See Fig. 4.)

How to Put In the Wires

"How do I get the wires in?" is the question of the novice, and it is a most important one. In shirring, be it single or double, three or four inches of the casings and tucks must be left unrung at the back or least conspicuous part of the brim; here the wires are run in, beginning at the edge wire, which must be cut three inches longer than intended measure and the two ends pushed across each other and firmly joined. This is easiest done by a buttonhole stitch around the two wires, beginning and ending with a firm tie knot, then finish the runners across the join, fulling up as you go because it is almost impossible to push fullness over the joined wires. The second wire, then the others in succession are put in in the same way, the head wire being the last. To run in the wires, turn a bit over and pinch it close with the pliers so that it will not catch in the material; thick wire that cannot be turned over, must be firmly twisted over at the end, so it will not ravel.

If a perfectly flat brim is desired the length of the wires can be easily ascertained by laying the work flat on the table and drawing up till the flutes run stretched from the edge in; but if a curved brim is desired, a
The Art of Millinery

buckram frame should be used as a mold to work over; only an expert can shape her wires to artistic lines in eccentric shapes. After the wires are in, draw up and fasten off all threads as before directed.

If it is desired to have a sheer underfacing separately shirred or of folds, use a thin silk or muslin for the reverse of the shirrings, then make and slipstitch the facing on around the edge, after the crown has been set on, then carry the headline, ravelled edge up, inside the crown, and finish with the head lining. Wires are not necessary in such underfacings but cross braces are frequently put in on velvet brims to prevent them sagging.

If soft brims are desired, use in place of wire "shirring cord," which is very stiff but can be cut with the scissors; feather-bone reeds are also used.

These methods of shirring are more especially used in children's millinery.

Crowns

Crowns may be made in several ways. They can, of course, be shirred with casings and drawn to shape the same as the brim, using silk or muslin underneath, in which case they will need a support of cross wires buttonholed in after the round wires have been drawn to the required size and shape. But it is easier and more practical to form the crown shape in wire, cover it with thin crinoline and shirr or tuck single ply material to harmonize with the brim. This may be of bias or straight material, or it may be, as in the case of a "Tam" or shirred "mob" crown, made from a round piece three times the diameter of the crown top. From the middle of this cut an even round the size of the crown top, run a shirring thread around this edge, a one-fourth inch in; turn under the outer edge and run a narrow tuck, put in three or four shirrings above this one, with a one-half inch between each. One inch from the other edge runner put in another shirring, and a couple more if the crown is to be flat on top. Draw the rough edge shirring up tight so the ravel-
lings come on the wrong side, sew firmly and flatten out, sew invisibly on center of crown, draw up edge tuck, even the fullness, pin and sew around headline; this neatens the rough finish of brim shirring. Now draw up the other threads to shape and place, pass ends inside crown and fasten off.

**FIG. 5**

**SHIRRING EDGE OVER WIRE RING**

The crown made from bias strips is finished in the same way, but as there is more fullness to dispose of, cannot well be drawn to a center on crown; draw as close as it will allow and finish with a flat button or bit of separate shirring; or sew a flat piece on top of crown and finish top edge on a wire cord as shown in Fig. 5.

**Shirred Plaques**

Entire plaques can be shirred in this way, either drawing a hole cut in middle of round to a center, or sewing
a plain flat round on the middle of a net foundation, and gathering the piece on a wire around this central disk.

**Shirring On Cord**

The same idea is shown in Fig. 6, a shirred plateau of velvet, done over thick cords. This was made over a firm cape net foundation, well braced, the deep bandeau forming the crown. Three bias lengths of velvet were used, reaching from the headsize — under edge of bandeau — to the central ring on top, puffing easily over the edge; of course, in measuring for width of breadths this has to be allowed for, also the cordings,

![Image of velvet hat shirred over cords](image)

**FIG. 6**

**VELVET HAT SHIRRED OVER CORDS**

which is one inch to each, beside turnings at headsize, and last ring; a little puffiness between the two sets of cords, and an extra inch for the "making" of underbrim, although this was done in flat shirrings. After joining and opening the seams, the inner cord was done first, holding the material firmly around it, and running under so as not to catch the cord, but leaving both cord and
shirring thread a little longer than the material. The second cord is laid in as close as possible to the first, shirred in in the same way, bringing the joints and ends at the same place and leaving three inches unrun as directed for the wire casings.

Now we measure off one inch, and if necessary baste the line and put in the set of three cords. Now the material must be placed on the foundation to ascertain just where the first set of three flat shirrings is to go on under brim, probably four to five inches from the last cord; then a space of one inch and a couple more shirrings, and a last one to gather all into the headsize.

**FIG. 7—FRONT VIEW OF HAT SHIRRED OVER CORDS, SHOWING FLAT SHIRRING**

Having sewn a flat piece on top middle of foundation, the first cord is drawn up, cut to size, the ends lapped and tightly wound round; if very thick and firm, cut away half of each end, so that when lapped the join will be no larger than the rest of the cord; this is called "splicing," and is also done with the thick covered wire used in Figs. 5 and 8. Pin this cording in place, and draw up the thread, but do not fasten off till all is done. Now draw up and fasten off the other cords, pinning
and arranging as the work proceeds. The instruction of dividing into eighths given previously applies here, and makes the work of equalizing the fullness much easier. It is not quite easy to push the fullness over the cords, but firm fingering does it.

Only the first, third and last rows of cording are sewn to foundation, the first with one-half inch long stitches on wrong side, invisible ones among the shirring; the other two may have longer stitches on the reverse.

Next the first set of under shirrings are drawn up and attached invisibly in such a way as to ensure the edge puff retaining its effect. (Fig. 7.) Now the lower shirrings; last the headline is drawn up and secured; then the bandeau, previously covered, is sewn on, and a headlining finishes the hat. The curve shown was bent in after the hat was made, and gave it a droop on the right side. The only trimming consisted of two plumes posed on the underbrim, where it turned up, and a handsome ornament outside.

Toques are handsome shirred in this way; it is very

---

**FIG. 8**

FULL EDGE SHIRRED OVER WIRE CORD
effective for crape and crêpe de chine; and big rosettes with corded edges are handsome.

Also this cording may be done in flat tucks; i.e., the velvet finely run over the cords and not full ed up.

Returning to the wire cording, this is a good method of finishing full edges on either straw, felt, velvet, or silk hats, and equally so for crape. The strip is gathered along, one edge divided into eighths, the same with the hat, and sections pinned to sections, the thread drawn up, and the bind sewn on the brim, rough edge towards the edge, and, of course, wrong side up. Now cut a cord or cable wire ring the size required, ravel the ends and "splice," turn the other edge of the bind over the wire, shirr along, fulling, and drawing up the thread; hold the work on the side of brim where the cording is to go, as you cannot slip it over after it is done.

To sew to hat, use an invisible stitch among the fullness and a longer one underneath. (See Figs. 5 and 8.)

Sheer Materials, Fancy Coverings and Facings

Sheer materials are used as a rule in fancy ways, shirrings, tucks, plaitings, or folds. The simplest of these is the shirred or gathered underfacing, which is suitable for either a straw, felt, velvet, silk, or lace hat; next comes a tucked shirred facing. Folds are put in in three ways, and as a rule the brim must be first faced plain with some matching material, such as thin silk, crêpe Française or tarlatan.

In a straw the facing may come right out to the edge, or the edge may be finished with one or more rows of straw braid, the underfacing meeting this.

To Allow for Fullness

Of tulle, four times (or more) of circumference of hat.
Of mousseline de soie, three times of circumference of hat.
The Art of Millinery

Sheer chiffon, three times of circumference of hat.
Heavier chiffon, twice circumference of hat.
Crêpe de chine, twice circumference of hat.
Silk, twice circumference of hat.
Formerly such materials as tulle or maline, mousseline de soie, crêpe lisse, crêpe Française, or aerophane, crêpe de chine, chiffon, Liberty gauze, silk blond (so called from the blond hair formerly used in its manufacture), Brussels net, besides the various veilings and laces, were used only in summer wear, but these are now employed equally for winter wear, the dressy evening and "restaurant" hats being as airy in design as the most dainty summer chapeaux.

Tulle, which is the lightest of these fabrics, has not the softening effect to the face as have some of the other materials; hence it needs making up with special care to give the effect which in itself it lacks. Plain covered white tulle hats are like a piece of marble against the face; done in soft folds or fluffy puffings and shirrings it can be made becoming, but its immense popularity is due to its judicious use as a setting for soft trimmings such as feathers, and dainty color effects in flowers or

FIG. 9—FLY RUNNING

other garnitures; a touch of velvet or fur in winter gives a touch of real fascination to this beautiful material.
The beauty of tucks and shirring depends on their
being evenly spaced and finely run, and it is safest to mark the first line by measurement and pins. It is best to make all joins before beginning to shirr, but in very long lengths of tulle it is permissible to keep the work flat, and fold the ends neatly in when putting the piece on the hat.

The best way to shirr all light goods is by "fly running." (See Fig. 9.) The cut shows how the work is held, but the method is to propel the needle with the thimble and wave it back and forth in a quick tiny stitch through the material; when mastered this is a very neat and swift method.

In putting on a facing with a cluster of tucks at the edge, it is best to draw up the threads and pin in place, twisting the threads around a pin as one does in plain sewing gathers, for the reason that in sewing on a little more is often taken up, necessitating the letting out of the draw threads.

A cluster of deep edge tucks of tulle may be laid and pinned, then secured with one runner, but in silk, crêpe de chine, or chiffon, they must be run singly, leaving a one-sixteenth of an inch only between. (See Fig. 4.) A more fluffy effect is secured by running each separately.

Sheer Hats Made Direct on Frame

In hats made of tulle or gauzy material over a frame, the web is cut double the width of brim, two inches extra for the head inside and out, one inch for "take-up" in making, and allowance for tucks. The measure for fullness is as given in table.

If tucks are desired at edge these are first run, the piece is then folded over the frame half on each side, the tucks at the edge wire, or if no tucks, the middle of piece is pinned in place. This must be evenly divided in half back and front, half again each side and again each section halved and pinned to the brace wires, as when shirred the work cannot be pulled over these. (Fig. 10.) Now run a shirring thread under the
edge wire, forming a casing of upper and under layers, drawing up the thread and evening fullness as work proceeds. Next draw both sides in level flutes down

FIG. 10
MOUSSELINE SHIRRED OVER FRAME

taut and shirr together under second, then under third wire, then under head wire. The work may be left

FIG. 11—CORDED MOUSSELINE FACING, SHIRRED ON FRAME

at that, but many put a second shirring above the wires, which gives the effect of wire casings. Parisian milliners make tulle frames in this way, using them as foundations for lace hats. (See Fig. 11.)
FIG. 12—SHRRED AND TUCKED FACING IN PLACE

This kind of shirring over frames may be varied in many ways; the shirring may be done on one side only, folding edge of material over edge wire, and encasing

FIG. 13
FIG. 14
TWO METHODS OF SHIRRING
each successive circular wire by one row of running; then the other side is covered with lace, or in any way desired.

Another way is to have the upper side of silk, and the under of some sheer material such as chiffon or crêpe de chine, and shir the two together. It looks best to finish such edges with cord wire in the silk, as described above, this being sewn down by an invisible, slanting slipstitch.

**Specimens of Shirred Hats**

Figs. 13 and 14 show a shirred tulle hat; the brim shirred as shown in Fig. 10; the crown is first covered plain, then a strip shirred on a ring of wire is fitted on edge of crown, gathered to center, and around headline; the tulle being four times circumference of brim and crown.

![Image of shirred hat](image-url)

**FIG. 15—CHILD'S HAT OF SHIRRED TUCKED MOUSSELINE DE SOIE, GRADUATED BRIM**

Fig. 15 shows a hat of shirred tucks of mousseline de soie; there are two deep tucks at edge of brim and
crown; three one-half inch tucks on the upper brim; the under brim being shirred in rows of whipping stitch, the edge treated as described in Fig. 4.

The crown tucks are a one-quarter inch deep, finished at center by a tuck drawn to a ring over a bit of the mousseline basted on the center top.

When finished the hat was bent to Empire bonnet form and trimmed with ribbon and baby roses.

Graduated Spacings

In Fig. 15 it will be seen that the brim is wider in front than at back; for such a brim the spaces must be proportionately graduated. This is done by measurement, the tucks folded and pinned, and a clipped card used to mark off widths of tucks and spacings. If the brim is six inches deep in front and three at back, the spaces between tucks are just double the width in front of that at back, and graduated from one to the other. The same is to be done with the single lines of shirring under the brim, or vice versa.

Facings of Fold

There are three methods of putting in folds of sheer materials. The first is of cut bias folds, run singly round and round on a previously fitted plain foundation of the same material or thing matching silk, and each fold lapping the previous one enough to hide the line of stitches. Such folds are cut bias from two to three

FIG. 16—FACING OF BIAS FOLDS

80
inches wide, folded double and run on a little full, only enough, however, to insure their being quite flat, not curling over at the folded edge. It is well to pin or baste the necessary quantity, all joins being made first, and the folds run round and round without cutting till the brim is filled in, from edge to headline. (See Fig. 16.)

Another way is to cut off a length of tulle on the straight (other gauzes on the bias) the length of circumference of brim, plus nine inches for every forty, or in that proportion, for ease, not fullness. In tulle it is best to cut the breadth through at the fold; moussetine de soie and chiffon are cut on the bias, about nine inches along the selvedges, which must be joined if necessary to get the requisite lengths, the selvedges cut off, of course. Lay the tulle flat on the table and fold over two inches along one edge; on this fold a tuck one and three-quarters inches deep; fold up as many tucks as the breadth will do, each one-quarter of an inch below the previous one at the top, but all level at the lower part; pin the folds in place as you work, taking out and replacing the pins at a few inches spaces; when all is pinned up, baste one thread through all the folds at the base, draw up just a little, pin in place on the brim, run down just above the line of basting and when secure draw these out by clipping at short intervals; use 200 thread. Repeat this process with as many breadths as required to fill in the brim.

Sets of deep tucks to fill in spaces between the crown and brim of turbans, etc., are made in this way.

The third method is called a "rucked" facing and is made of the entire breadth of tulle. Cut as before directed, turn the edge over and pin to edge of hat, push up the tulle to form one deep fold around the edge, and secure with a "slide" stitch, that is, a long needle is passed under the foundation, and a tiny stitch caught in the tulle at about one and one-half inch spaces. Push
up a couple more folds, pin in place, and secure, and so fill in the brim. The extra long milliners’ needles known as “straws” are best for this work, or a very fine long darning needle.

Draped effects of tulle or mousseline on brims and crowns are done in the same way as the rucked facings. If the brim is transparent numerous “tie-stitches” are employed in place of the slide stitch.

Once the milliner understands the nature and possibilities of her materials, a multitude of ideas for their use and best and easiest methods of handling will present themselves; as modes change, so methods change, and the quickest are always best, as much depends on these fragile webs retaining their first freshness and beauty.