

will thoroughly and perfectly sand-paper *thirty thousand* feet per hour of any style or form of mouldings. The corners of the mouldings are left remarkably clear and sharp—more so even than when sand-papered by hand. The surface of the moulding is left much smoother than ordinary hand work and is preferred by painters. One machine will sand-paper for at least four moulding machines and will not use over ten cents worth of sand-paper per day. A boy can use the machine as well as a man—saving skilled or expensive labor. Of so great value is the machine that until the present time Mr. Loomis has never consented—although often asked—to allow his patent to be constructed for general use; preferring to have the exclusive use and control of his valuable invention. So great has been the desire of parties interested in wood-working to secure machines, that Mr. Loomis has concluded that he will soon allow them to be placed upon the market. So rapid and perfect is the work accomplished by these machines that Mr. Loomis really owes it to the trade that they should come into general use; and we are glad to chronicle the fact that he intends placing them within the reach of the moulding and wood-working mills. The mill belonging to Mr. Loomis employs one hundred hands constantly and does an annual business of \$250,000. Illustrations of the sand-papering machine will soon appear in the WISCONSIN LUMBERMAN, when we shall expect to give a full and accurate description of it.

BURNETTIZING.

The process of "burnettizing" timber and lumber has as yet been little introduced in the west, or indeed but little understood or appreciated.

When we consider the enormous consumption of lumber, with its great variety of uses and frequent exposure to the destructive action of moisture, heat, and imperfect ventilation, the importance of some process to preserve it from decay can hardly be estimated. The value of such a process is not simply in the cost of the material preserved, great as that may be. Its greatest economy consists in saving the expense of reconstruction, as well as the inconvenience and delay of frequent repairs. In bridges, railroad tracks, ships' timbers and spars, sills of houses, &c., the cost of replacing is much greater than the first cost of the lumber. It should be borne in mind, however, that many of the cheaper kinds of lumber, when burnettized, are more durable and much cheaper than the more expensive woods, unprepared.

In the case of bridges, another consideration deserves mention. Of the many terrible disasters occasioned by the giving way of these structures, under a loaded train of cars, most have risen from the gradual and unnoticed decay of the timbers, which might have been prevented by subjecting them to the preserving process. As burnettized stuff is also comparatively unflammable, another danger to which railroad bridges are exposed, that of

taking fire by means of sparks from the engine, is greatly lessened. This last property entitles the process to a careful consideration of its utility in ships and steamboats, where portions of the timbers are extremely liable to take fire by the *continued* action of an elevated temperature from the heated machinery, boilers, and from other causes. The trifling expense of preparing the timber is of little account, when the question is one of even partially diminishing the liability to the terrible consequences incident to the burning of a ship at sea.

Burnettizing also protects wood from the attacks of insects, which, in certain localities, are as destructive of the strength and durability of timber as the most rapid process of decay.

The object of this and other processes is the preservation of wood, cordage, canvas, etc., etc., from wet and dry rot and mildew. The importance attached to this, and the extent to which investigation and experiment have been carried, is shown by the fact that no less than forty-seven patents have been secured for processes to secure this result, most of them within the past century. Of these, besides Burnett's, the most generally known and used, are probably Kyanizing, and the creosote or coal-tar process.

Kyan's process, patented in 1832, though attended with good results, is open to serious objections. Corrosive sublimate, or bichloride of mercury, the substance employed is very expensive, which is a sufficient objection to its general use. It is,

moreover, a virulent poison, and the process requires several weeks for its completion. From the corrosive action of this substance upon most metals, it cannot be used in close iron vessels, the advantages of exhaustion and pressure are thus lost, by which alone can timber be thoroughly impregnated and the process finished in a few hours.

In 1838, a patent was granted in England to Sir Wm. Burnett, for the use of chloride of zinc in the preservation of certain animal and vegetable substances from decay. This process has been extensively used in England, and more extensively in this country than any other. The chloride of zinc has proved to be effectual, and has the advantage of being safe, cleanly, and economical, while at the same time it acts as a purifier.

Burnettizing was introduced in this country by James B. Francis, Esq., agent of the proprietors of the locks and canals on Merrimac river, at Lowell, Massachusetts. This company, the original proprietors of all the water power used by the extensive manufacturing companies of that city, have many uses for lumber in exposed situations, as in bridges, locks, dams, sluices, etc. Mr. Francis, their agent, a distinguished civil engineer, thoroughly examined the various processes for preserving timber, and in the course of his investigations visited some of the largest establishments abroad. Satisfied of the utility of the Burnett process, at his suggestion, and under his direction, the works at Lowell were erected. These works were put up solely for

the use of the manufacturing companies; but finding they had sufficient capacity, large quantities of lumber have been prepared there for other parties.

The points of advantage gained by burnettizing timber and lumber may be, briefly stated. It hardens and improves its texture. It preserves it from the adherence of animal or vegetable parasites and also from the attacks of insects. It completely preserves wood from wet and dry rot and renders it less inflammable. It is free from any odor, and is cheap.

E. ANDREWS' SAW WORKS, WILLIAMSPORT, PA.

The art of manufacturing circular, gang and mulay saws for lumber mills, has reached, in this country, such absolute perfection that in quality of material, shape and finish, it seems as if nothing further could be desired. All the different saw factories have their customers who prefer the saws that they have tried to their satisfaction, and are loth to believe that any other than their favorite brand is of equal value. We find, for instance, that in the great lumber manufacturing centres of the Susquehanna, the saws manufactured at Williamsport, Pa., by E. Andrews, are especial favorites, and that for perfection of finish manufacturers of lumber speak of them with unusual praise. Indeed, as these saws become known by use in other localities, their merits are speedily recognized and their popularity is assured. Mr. Andrews is a man eminently practical both in his labors and his views; therefore he has built up at

Williamsport a saw manufacturing establishment in which nearly all the machinery used is that of his own invention, and is calculated to assist in every particular whereby the saws may be made absolutely perfect in all respects. It would be impossible to give, in so brief an article as this, an adequate idea, by description, of the various ingenious devices patented by Mr. Andrews that tend to make the saws from his shop marvels of exactness and finish. Nor have we space to even enumerate the many valuable machines which Mr. Andrews' inventive genius has created and which are invaluable to all manufactures of lumber. We can only advise our readers to send for circulars that will fully explain and describe the machines built by Mr. Andrews. One of the recent novelties in the saw line is a circular constructed on an entirely new principle, and is one which will soon be brought to the attention of lumbermen. At present we cannot give a description of the new saw for the reason that it is not yet to be placed on the market. When Mr. Andrews is ready to make public the peculiarities of his new invention, the WISCONSIN LUMBERMAN will give its readers the benefit of an illustration and full description of the saw. We mention, however, that the saw is so constructed that the strain of the saw is relieved twice during each revolution by the saw itself. Mr. Andrews' advertisement will be found in this issue of the WISCONSIN LUMBERMAN.

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