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IMPROVED REBOLTING MACHINE.

The invention herewith illustrated is a sawing apparatus, contrived for rebolting large bolts of timber without quite separating the smaller bolts from each other, so that they will hold together, admitting of handling or dogging in the shingling or other machine, in which they are to be finally cut up. By this means the machine may be supplied with timber to its full working capacity, while, at the same time, cutting the shingles or other pieces as narrow as desired.

In the perspective view, Fig. 1, A is the carriage which moves under the saw, B. The depth of the carriage under the blade is such that the latter does not reach the bottom, so that the bolt, secured in saw carriage, will not be cut entirely through. This will be understood from the sectional view, Fig. 2, in which the bolt is represented by dotted lines, D. C is a tilting rest for the bolt, upon which the sap side of the latter, generally bevel to the other sides, is placed, and held so that the saw kerf will pass down to the axis of the rest, thus leaving sufficient wood to hold the portions together, no matter how much the bottom may be inclined as regards the sides.

At E is a pair of clamps which work upon right and left hand screws, F, Fig. 2, and are operated by the crank, G, Fig. 1. These serve to hold the bolts securely while being cut. A portion of the carriage, H, is elevated, in order to accommodate pieces which are to be divided entirely, as in ordinary sawing machines. The track of the carriage is made in two portions, one above the other, so that the upper part can be vertically adjusted as may be required, for saws of different sizes, or as the blade wears away.

Patent pending through the Scientific American Patent Agency. For further particulars address W. A. Fletcher, Beaumont, Jefferson county, Texas.

THE COMBINATION FOOT LATHE.

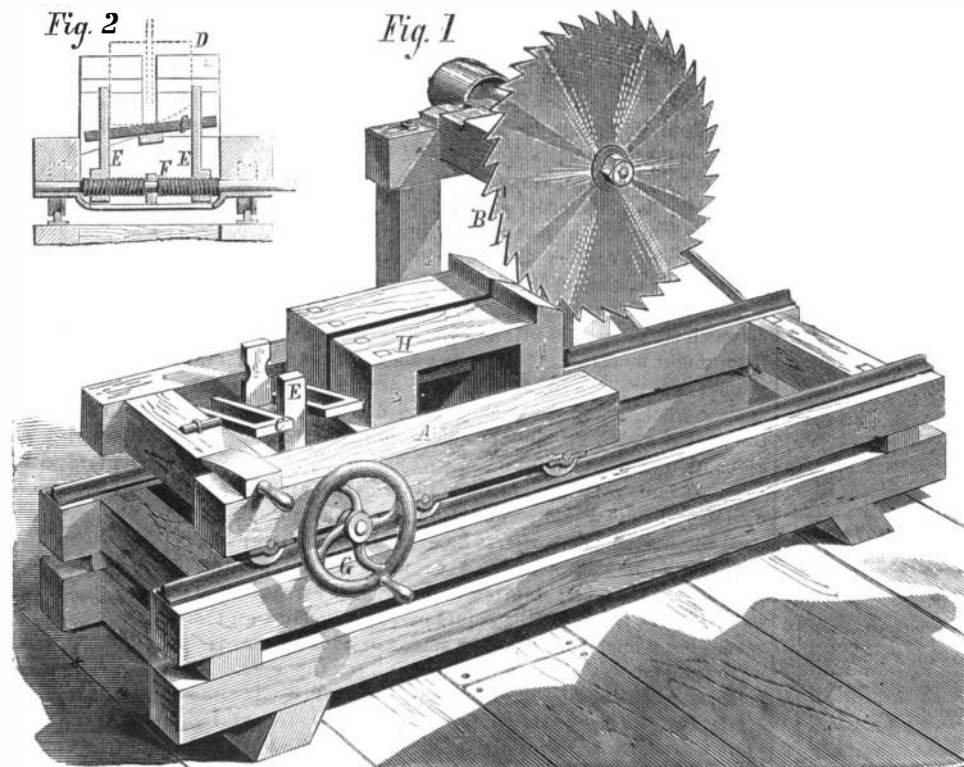
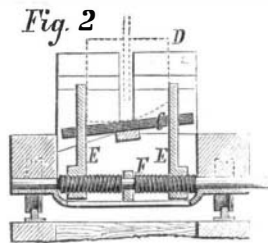
For the use of amateurs, and for mechanics who desire to economize both in the cost of, as well as in the space occupied by, their tools, the novel device herewith illustrated will be found of much utility. It is a simple foot lathe, with which are combined a jig and a circular saw.

The former, which is represented on the right of the machine, is actuated by a pitman which connects eccentrically with the end of a shaft, A, passing under the apparatus. Motion is communicated to this shaft by a separate belt from the main pulley. The pitman operates a pivoted lever which, by an adjustable connection, B, transmits its motion to the saw arm. The saw works through a suitable table, and is tightened by a setscrew in the connection, B. We are informed that it penetrates timber an inch and a half in thickness with perfect readiness.

At the opposite end of the lathe, and attached to the main arbor, is a small circular saw. This has an adjustable table which is provided with the usual guides, etc. By turning back the table, and removing the saw, an emery or buffing wheel may be substituted in its place upon the arbor.

Regarding the lathe itself, other than to notice that it is neatly and substantially built, and appears to be an efficient and reliable tool, no particular description is needed.

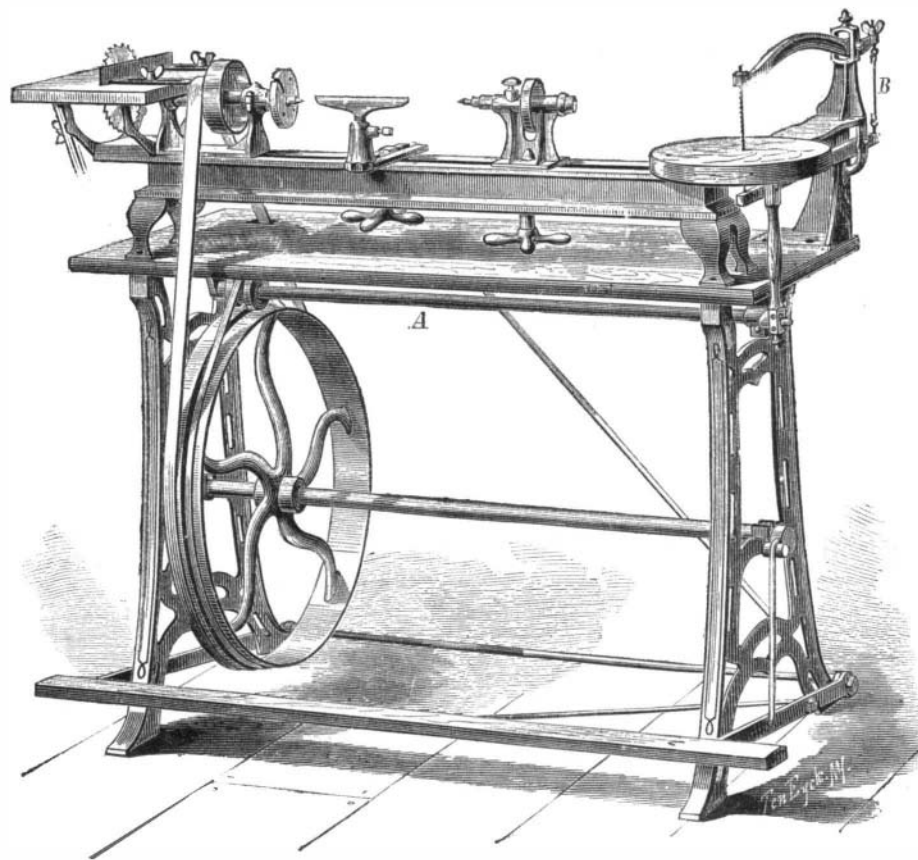
The apparatus is manufactured by Strange's Cylinder Saw Machine Company, of Taunton, Mass. For further particulars address O. W. Leonard, sole agent, 40 John street, New York city. Patent now pending.



FLETCHER'S REBOLTING MACHINE.

ies of palm which secretes in its cuticle a very considerable amount of silica, while its inside is made up of tough and fibrous filaments. The outside with the smooth natural varnish, when stripped off by particular machinery, is used for seating chairs. The inside of the rattan is employed in a variety of ways. It is shaped by machinery either round or flat, and so worked up into innumerable articles. Baskets, brooms, mats, matting, are all made from the inside of the rattan, and an immense quantity of it is worked around demijohns. Split rattan is made up into some half dozen different sizes, and

to introduce, twelve are erected and in operation. The stones are each 4 feet 3 inches in diameter by 12 inches thick, and the cost is about \$150. They are made of French burr, an interesting and not very common form of silica, of a cellular texture, which, for industrial purposes, is almost entirely derived from the mineral basin of Paris and a few adjoining districts. Considerable care and skill are required in their preparation. The revolving stone usually makes about 120 revolutions per minute. Four movable balance weights are set in its upper surface, so fitted that by the motion of a screw the stone can be made to lie perfectly level when in motion, this being a most essential condition in good grinding.



THE COMBINATION FOOT LATHE.

is then sold by the 1,000 feet. The finest qualities of rattan are used by whip makers. This large and constantly increasing business may be estimated by the fact that one factory in New England alone employs 1,000 operatives, and that the total number of people working in rattan (the schoolmasters excluded) is fully 1,800. The capital used in the manufacture of rattan is about \$2,000,000,

tion to the grinding stones, a number of steel rollers, similar to those used in the mills of Hungary for the production of that superior class of flour known in the trade as Hungarian whites. When the mill, as at present designed, is complete, the making power will not be less than 3,000 sacks per week. The steam power for these varied operations is generated in a pair of horizontal multitubular boilers, 12

A Great Flour Mill.

Glasgow has long been noted for the number and improved structural and mechanical arrangements of its flour mills, and Messrs. John Tod & Co. have just erected in the Govan road a new mill, which, so far as grinding power is concerned, is second to none in the great port of the Clyde. Altogether, apart from the care which has been exercised in the erection of the building so as to prevent the origin and spread of fire, the grinding machinery is of the most complete description. By means of telescopic pipes, for instance, passing down to every floor, it is possible, should the wheat get out of order at any time by overheating or otherwise, to shift it from one floor to the other. Another interesting arrangement is one by which the central portion of the store may be converted into a hopper from top to bottom, communication being easily made with all the elevators and screws in the store, which itself is so substantially constructed that it would be perfectly safe, although filled quite solid with grain. With regard to the cleaning machinery, the grain enters, by means of a hopper, into the wheat separator, in which the accidental grains of Indian corn and straw, and the greater portion of dirt accompanying the wheat, are removed from it. The scrubber is a machine of complicated construction, which next removes the feather end of the grain and a large portion of the bran. The wheat is then conveyed by a spout to an elevator, which takes it to the top story of the mill. Of the twenty-five pairs of millstones which it is intended

of a screw the stone can be made to lie perfectly level when in motion, this being a most essential condition in good grinding. The opposite surfaces of the stones, from the peculiarity of their dressing, act upon the grain like the blades of a pair of scissors. The white meal, being carried to the uppermost floor, enters a cooler, which is a circular vessel, about 9 feet in diameter, and about 27 inches high, the sides being formed of galvanized sheet iron. There is a vertical spindle in the center, and at the bottom of this a horizontal arm provided with twelve wooden blades, so set that they spread the meal as evenly as possible, and gradually move it out to the circumference of the cooler. At one part of the latter, there is a hopper opening into a spout, by which the meal is conveyed to the floor below, where it is subjected to the first dressing process, the object of which is to separate the bran. The dressing machine may be described generally as a large wooden case, in which revolves horizontally a six-sided framework of wood, having a peculiar kind of silk fabric stretched over it. Inside the silk covered framework there are a number of wooden blades set obliquely, so as to carry the bran forward to the further end of the machine, the coarse dressed flour meanwhile passing through the silk into the screw elevator, which conveys it to another cooler in the floor above. There are four of these coolers, all in the fifth or upper floor of the mill. Messrs. Tod & Co. are also preparing to erect, in addition to the grinding stones, a number of steel rollers, similar to those used in the mills of Hungary for the production of that superior class of flour known in the trade as Hungarian whites. When the mill, as at present designed, is complete, the making power will not be less than 3,000 sacks per week. The steam power for these varied operations is generated in a pair of horizontal multitubular boilers, 12

IRON HAIL.—Professor Eversman has had occasion to examine, at Kasan, hailstones containing crystalized iron pyrites. The cause of this rare phenomenon, no doubt, was that small crystals of pyrites, proceeding from the disintegration of a rock, had been transported by a tempest into the clouds, where they were iced and converted into hailstones.

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