

FRENCH HORIZONTAL FLOUR MILLS.

The mills exhibited at the late Exhibition in Paris by Messrs. Bresson, Fanchon & Co., of Orleans, are novel in several particulars. The stones are arranged so that they lie parallel to each other, and they are arranged so that they may yield when subjected to sudden jars or shocks. This avoids serious damage to the mill, and prevents the heating of the stones and grain. The grain is drawn in through the eye of the stone, and equally distributed between the stones by an apparatus which also furnishes cool air for the spaces between the stones, which cools both the stones and the grain. A cast iron case incloses the stones, leaving an air space all around them, in which air currents are produced by a blower at the top of the casing. These mills are provided with conveniences for removing and replacing the stones, and they are compact and efficient.

The stationary mills shown in Fig. 1 are supported by a strong cast iron frame, and the portable mills, Fig. 2, are supported by a substantial wagon frame. The bolting box is connected with the mill and has no special shafting, but takes its power directly from the shaft that drives the stones.

Wood Pulp Making.

According to *Leffel's News* Newton's pulp mill, at Holyoke, Mass., uses five cords per day of spruce and poplar wood in the making of manila papers. In wood-paper manufacture the split fourfoot timber is fed into a circular fan-like hopper provided with swiftly revolving steel knives, which cut the timber into small chips in very short order, when a fan drives them up into the loft, where they are shoveled into two steel digesters holding from four to six tons each. Soda ash and other chemicals are introduced, a heavy head of steam is turned on, varying in different mills from 100 to 200 lb. pressure to the square inch, and the chips are cooked until the fibers are thoroughly separated. Then the pulpy mass is washed out into vats to drain off the chemicals, and after it has become solid it is again washed out and pumped up into the engines and beaten, and the usual process of paper making is then gone through with.

Some makers, like Superintendent Tower, formerly of the Dexter Company, of Windsor Locks, think evergreen woods far preferable, as having a larger and more hardy fiber. He thinks we are only in the rudiments yet of wood-paper making, just as the rag-paper men were twenty years ago, and believes the time is coming when, by gradually discovered processes, wood papers may be as finely made as rag papers are now.

Quick Forging.

Recently the steamer St. John, of the People's Line to Albany, broke her shaft. A new shaft, 37 feet 6 inches in length, 20 inches average diameter, and weighing 40,000 lb., was made from the blooms, turned, and finished in six days. The work was done at John Roach's establishment, and is pronounced the quickest work of the kind ever done in this city.

CARVING ATTACHMENT FOR LATHES.

The carving attachment shown in the engraving is from the shops of M. Arbey, of Paris, France. It is intended to be affixed to common lathes for the purpose of grooving, channeling, and ornamenting columns balusters, table legs, and similar articles of irregular shape. The carving attachment is placed on a traveling carriage, and supported on an adjustable cylindrical standard, to which the balanced arms of the cutter shaft are pivoted, the latter being revolved by a pulley and belt connection with a traveling pulley of the cutter-actuating shaft. The cutter shaft is movable on its bearings by a lever handle, while the pulley is re-

tained by a clutch connection with a fixed brace of the weighted arms, and it is raised or lowered by means of a curved arm and guide roller passing along the pattern of the form. When a table leg or other object is held in position of rest in the lathe, the cutting tool passes longitudinally along the same, and works out in it a groove or channel. The dividing disk being turned for the distance of one sub-

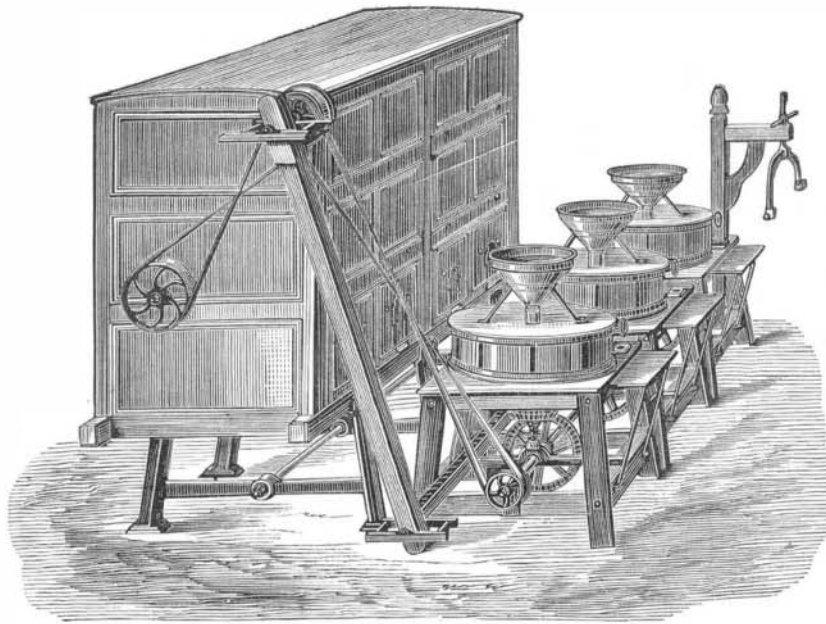


FIG. 1.—STATIONARY MILL.

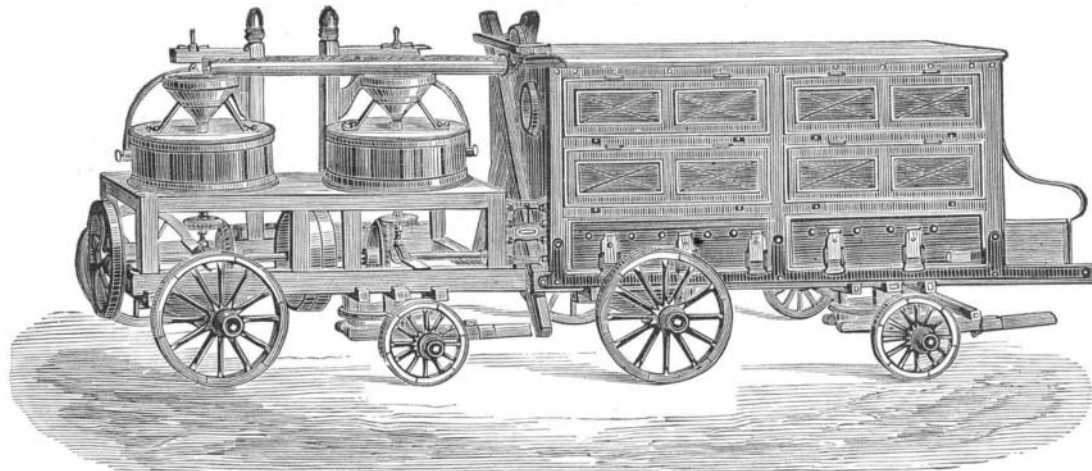
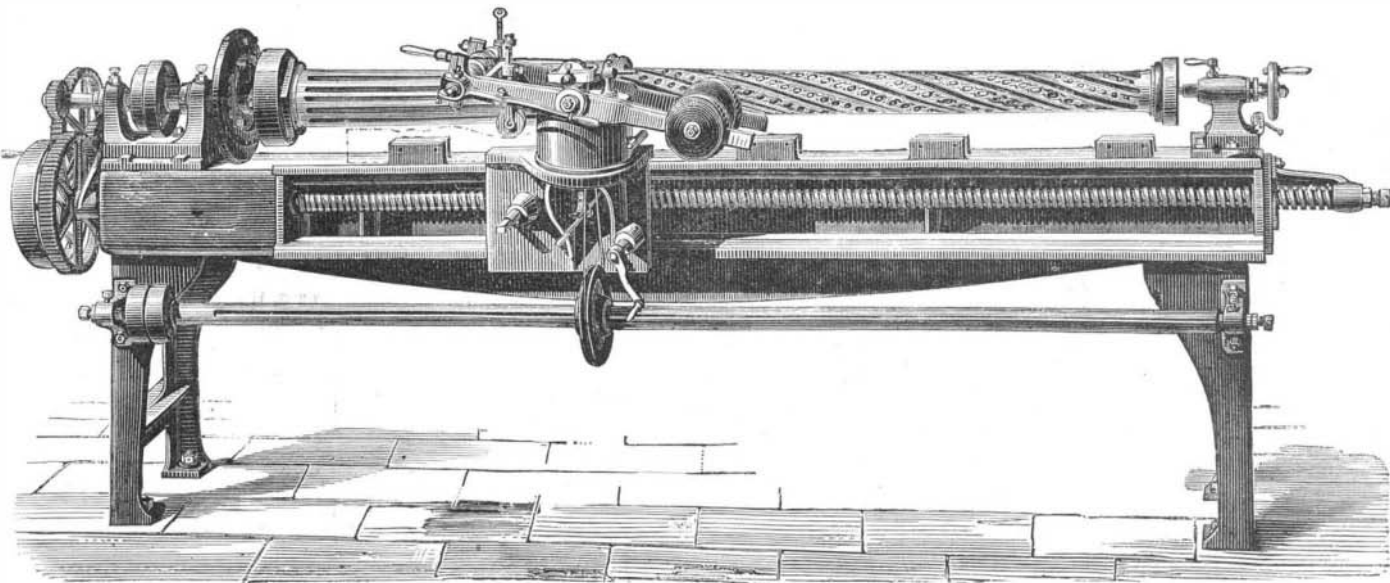


FIG. 2.—PORTABLE MILL.

division after each channel is completed, the next channel is then produced by the return motion of the carriage. By turning the object slowly in the lathe, simultaneously with the revolving and traversing motion of the cutter, helicoidal channels or grooves are formed. For grooving conical parts, the cutter shaft is guided along an inclined guide pattern, or its axis is placed at an angle to the longitudinal axis of the lathe. The cutter adjusts itself to the shape of the object, and carves, by its uniform forward motion, an ornamental

groove of equal depth throughout the entire length. For the purpose of pearling or doing other ornamental carving, the cutting tool is guided to the work by a handle, while the object is turned in the regular manner by the dividing disk, so that the pearls may be formed at uniform distances.

The adjustability of the cylindrical standard, in connection with the balanced cutter shaft and handles, admits of the convenient and accurate handling of the carving attachment, so that a large variety of ornamental work may be accomplished on this machine quickly and economically.



ARBEY'S CARVING ATTACHMENT FOR LATHES.

MISCELLANEOUS INVENTIONS.

Mr. Richard R. Jones, of Remsen, N. Y., has invented a simple and economical arrangement for fastening the covers of butter tubs, so as to make them perfectly secure and airtight. It consists of crossbars applied to the top or cover at right angles to each other, the ends of which are adapted to enter under the flanges of ears projecting above the top of the tub, and thus fasten the cover securely in place; it also consists of a key for preventing the cover from becoming disconnected from the ears, and which also serves, when drawn out, as a lever for turning the cross pieces under or out from the ears, as may be required.

An improvement in bricks has been patented by Mr. Effingham L. Schieffelin, of East Chester, N. Y. The object of this invention is to provide bricks to be used in the inner walls and partitions of houses as a substitute for laths in holding plaster, stucco, etc., the bricks having rows of grooves or indentations sunk on a downward incline in one face, into which the plaster or stucco will enter and be held fast.

Mr. Emil Hunziker, of South Bergen, N. J., has invented an improved safety faucet holder. The object of this invention is to provide a method of tapping barrels of beer and other liquid, and entering a faucet therein without permitting the escape either of gases or liquids therefrom.

Mr. James P. Crutcher, of Bethesda, Tenn., has patented an improved horse detacher for disconnecting the traces from the singletree, and thus allowing the horse to free himself from the vehicle in case of accident or danger requiring it. The traces are secured to the singletree by sliding spring bolts, which are held in a retracted position out of engagement with the traces by means of spring catches.

An improvement in concrete pavements, patented by Mr. John Murphy, of Columbus, Ohio, relates to pavements having a base of cobble stone; and it consists in combining with the cobble stone, for filling up the interstices and giving a smooth upper surface, a mastic composed of pulverized iron slag, pulverized stone, dried sand, oxide of iron, lime, and pitch or asphaltum and coal tar.

Mr. William Beeson, of Eagle Rock, Idaho T., has patented an improved automatic table waiter to take the place of the waiters in restaurants, saloons, and other places for carrying the orders from the tables to the cook room or counter, and the articles ordered back to the tables.

An improvement in linchpin holders, patented by Mr. Benjamin Goodyear, of Carlisle, Pa., is designed to prevent the misplacement of the linchpins of wagons and other vehicles, and it consists in a band or ring attached by a hinged joint to the hub, so

as to encircle the spindle and cover the ends of the linchpin. The holding ring can be raised for relieving the pin when desired, and when in place, for further security, is held by a spring catch.

Mr. Constantin Lazarevitch, of Brooklyn, N. Y., has patented an improvement in devices for preventing the shifting of grain in vessels. Vessels carrying grain in bulk have their holds provided with a ceiling or lining to keep the grain dry, and having, running lengthwise through the center of the hold, partitions called "shifting boards," which divide the cargo into two portions, for the better protection

of the vessel; yet these boards do not always prevent the grain from shifting, so that the vessel may be thrown on her beam ends. This invention consists in arranging on each side of the hold of a vessel, and securing to the cross and deck beams, a series of triangular box frames, with bases uppermost, closed at the ends with strong partitions, and reaching from the deck above to supporting joists or timbers below, and in hinging to the upper longitudinal pieces of each