

A NEW FOOT LATHE.

It is an important matter for an amateur or mechanic doing work with small tools to procure such implements as will be a source of profit, pleasure and satisfaction, instead of lasting regret that tools of another make were not purchased. Among such tools a lathe is an important item, and once purchased is not likely to be soon exchanged. A lathe which appears to fulfill all reasonable requirements is shown in the accompanying engravings. The chief novelty of this

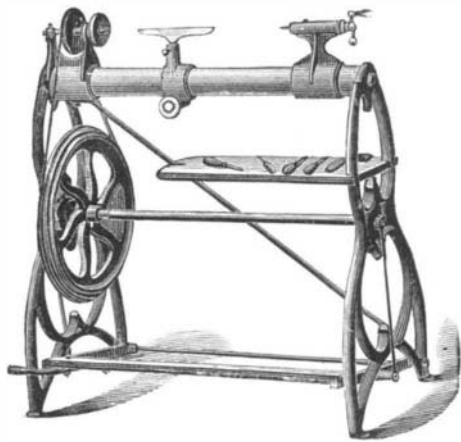


Fig. 1.—MARSH'S CYLINDER BED FOOT LATHE.

lathe is its cylindrical bed, which possesses many advantages which will be apparent to our readers. The bed is 36 inches long, and the head, tail, and tool stocks are bored to fit it. The head stock is fastened permanently with a set screw. The tail stock traverses the whole length of the bed, and is kept in line with front center by a groove in the bed, and is readily fastened at any point by turning a hand screw, which is on the back side of lathe and not shown in cut. The tool stock also encircles the bed, moves back and forth readily, and rocks to and from the work. It is sawed open on the bottom, and provided with a screw, which is sufficient to hold it at any point by a single turn of the hand. It has a steel mandrel, two steel centers, two T rests, and a tool shelf.

It has a brass box in front journal, and true bored iron bearings throughout. It has a three cone grooved pulley, turned up true, and polished. The balance wheel is turned and grooved to correspond with cone pulley, and is weighted to counter-balance the treadle. The crank shaft runs the whole length of lathe, resting in Bab-bitted journals, and has a crank on each end, thus avoiding any unequal strain upon the frame, and securing steadiness. It runs lightly and freely, with high speed.

This lathe has three useful attachments: a circular saw attachment, a bracket moulding device, and a scroll saw. The circular saw attachment, shown in Fig. 2, is easily applied, and the table, which is a light iron one, dressed up true, is supported by a standard set in the tool stock, and admits of being rocked and tipped so as to saw any bevel desired. It has two light running metal gauges for slitting and cutting off.

The scroll saw attachment (Fig. 3) is very simple, and useful for sawing all kinds of scroll and fret work. It is readily attached or detached without pulling the lathe in pieces. The driving attachment of the saw has a perpendicular stroke, which is important in the perfect working scroll saw. The spring and tension are firmly attached to the tail stock without the removal of a bolt or screw. The table tilts 45° without losing its central position, and the swing around under the arm is 25 inches.

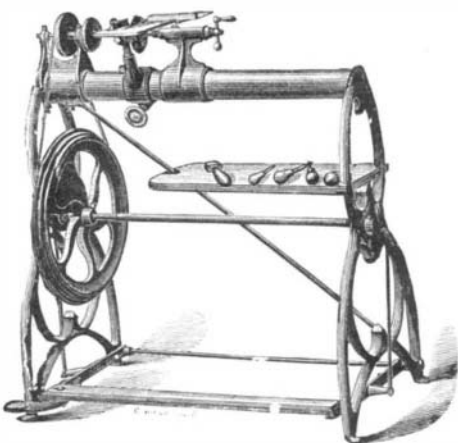


Fig. 2.—LATHE WITH CIRCULAR SAW ATTACHMENT.

The attachment shown in Fig. 4, for moulding and ornamental brackets and other scroll work, adds, with very little expense, a very desirable feature to the foot lathe. The standard of the table is threaded, and is adjusted up and down by turning it around. The capacity of the cutter is such as to follow the scroll saw into very delicate points, and open and mould them so as to give the work a more open and light

as well as a more ornamental appearance. The cutters have double cutting edges, and cut as well when revolving one way as the other.

This lathe is manufactured under the recent patent of E. A. Marsh, by the Battle Creek Machinery Company, Battle Creek, Mich., from whom further information may be obtained.

Recent Engineering Inventions.

Mr. Erastus B. Kunkle, of Fort Wayne, Ind., has patented an improved Gauge Cock for Steam Boilers, which consists of a tube having its upper end closed by a nut, through which the valve stem passes, and provided with a vacuum chamber between the nut and the discharge pipe, for preventing the steam or water from passing through the threads of the nut and scalding the operator. It has a valve seat at its inner lower end, as near as possible to the boiler, leaving no space for sediment or scale to collect and clog the valve.

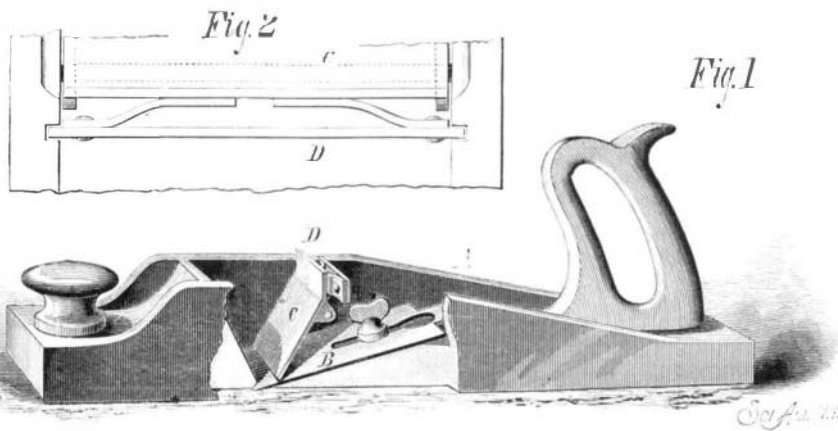
An improvement in Drilling Machines for Artesian and other Wells has been patented by Mr. Jesse Button, of New York city. The object of this invention is to construct the framework and machinery used in boring artesian and other wells in a compact and convenient form, for saving labor and space, and to enable the machine to be conveniently moved from place to place.

A NEW BENCH PLANE.

The accompanying engraving represents an improved bench plane, recently patented by Mr. Patrick Gallagher, of Eureka, Nevada. In Fig. 1 the side of the plane is broken away to show the internal construction, and Fig. 2 is a detail view of the cap supporting device.

The improvement is applicable to either a jack plane, fore plane, or jointer, of wood or iron.

The iron or bit, B, is screwed by a clamp screw in the body of the plane, A, forming a small angle with the bottom of the plane, and it is held in position near its cutting edge by the cap, C, which is pivoted on a pin that runs transversely through the plane. The position of the cap above its pivot is pressed forward by two strong springs that are



GALLAGHER'S PLANE.

supported by a cross bar, D, fitted to slots in the sides of the plane. These springs keep the cover down on the lower end of the bit or iron, holding it firmly in place. As the cutting iron lies more nearly flat than in ordinary planes it will make a smoother surface, and it is more easily adjusted than irons fastened with a wedge in the usual way.

New Inventions.

Mr. Jonathan Miller, of Trenton, N. J., has patented an improved combined Urn and Water Bottom. This is a stoneware receptacle for beverages, provided with a water bottom having communication with two tubes formed upon the outside of said urn, into one homogeneous piece therewith.

Mr. Eliot S. Hunt, of Elizabeth, N. J., has patented an improved Gate Hinge, constructed so that the gate when closed may be in line with the fence, and will allow the gate to be swung back against the fence without straining the hinges.

Mr. Francis Keil, of New York city, has devised an improvement in that class of Cylinder Latch Locks which cannot be opened from the outside of the door without its own especial key. It is simple in construction and not liable to get out of order.

Mr. John S. Birch, of Orange, N. J., has patented an improved Gun Wiper, having a novel device for connecting the wiping head to the rod, whereby the variations in the sizes of the screw shanks of different heads will not interfere with connecting different heads with the same rod.

An improved Device for Forcing Air into and through the Water contained in Wells, cisterns, tanks, and other vessels to purify it, has been patented by Messrs. Jerome S. Higgins and Riverious T. Higgins, of California, Mo.

Mr. John H. White, of Huntsville, Ala., has patented an improved Match Splint, which is triangular in form. The advantages claimed are a saving in material, producing with a minimum expenditure of material a strong splint. The sharp angles of the splint afford a ready and effective medium for rapidly communicating the flame from the head to

the body of the splint, and, as a larger number of splints can be cut from a given quantity of wood, it follows that for purposes of transportation a given number of splints can be packed in a smaller space.

An improvement in Adjustable Sieves has been patented by Mr. John Dildine, of Milton, Pa. The object of this invention is to furnish an improved sieve for sifting flour,

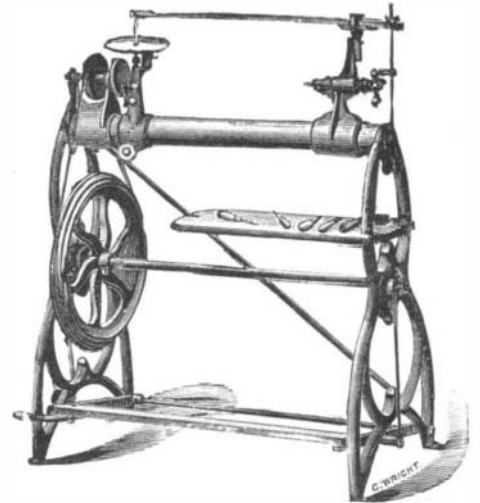


Fig. 3.—SCROLL SAW ATTACHMENT.

meal, seeds, and other things requiring to be sifted or separated. It is so constructed that it may be readily adjusted to make the meshes smaller or larger, as may be required.

Mr. Henry Hardick, of Liberty, N. Y., has patented an improved Fence. This invention consists in a metallic post having an anchoring cross bar or foot cast upon its lower end, and buttons upon one of its vertical sides, for the attachment of the wire rails; an intermediate stay post is also provided, which anchors a vertical cross tie connecting the longitudinal wire rails.

Mr. Louis R. Sassnot, of New Orleans, La., has invented an improved Portable Furnace. This invention is designed for portable clay furnaces to provide a basket frame that will at the same time serve as a permanent support.

Mr. Simon H. Wiesedeppe, of Seneca, Kan., has patented an improved Animal Trap, which is simple in construction, inexpensive, and reliable, catching the animal and holding him securely without hurting him, and without alarming other animals that may be near.

Mr. Heinrich Baum, of Höchst-on-the-Main, Germany, has patented an improvement in Coloring Matters to be used as Dyes. This invention consists in manufacturing red, yellow, and brown colors from the two disulphobetanaphtholic acids by means of diazo compounds of xylo-dine.

Mr. Benjamin Landon, of Canton, Pa., has devised an improved Mouth Piece for Mail Bags, that can be easily and quickly opened and closed, and that will remain

open when matter is being taken from the bag without being held, but at the same time can be securely closed and locked.

A Hose Cart, which may be used to transport hose from place to place, and in which the motion of the cart is made available for winding or unwinding the hose rapidly without straining it, has been patented by Mr. John Wilz, of Santa Cruz, Cal.

Mr. Andrew Sheridan Burt, of Omaha, Neb., has patented an improved Tent, having a double row of eyelets or grommets along the edges of the sections of canvas which form

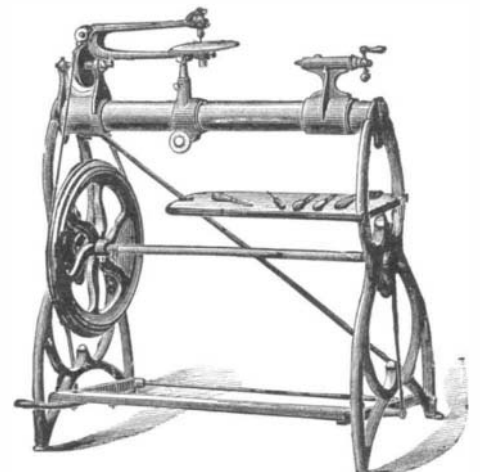


Fig. 4.—BRACKET MOULDING ATTACHMENT.

the ridge, and having flexible knotted chain loops adapted to be laced diagonally.

Mr. Paren England, of Lincoln, Neb., has devised a combined Sash Lock and Weather Strip, designed to both lock the sash in any position, and at the same time to tightly close the joint between the sash and the framing, to prevent the entrance of cold air, dust, or snow,