

New Inventions.

Mining Machine.

C. A. Chamberlin, of Alleghany City, Pa., has invented a new machine to facilitate the mining of coal. It is principally intended for "undermining" and "side-cutting" seams of coal, but it is also applicable in other mining or tunneling operations. It consists chiefly of a cutter wheel, furnished with an arrangement of cutters, to cut in a direction perpendicular to its axis, arranged in a carriage, which is fitted to travel upon a stationary frame, and a feed screw, or an equivalent device, for moving the said carriage and cutter wheel in a direction perpendicular to the axis of the cutter wheel, for the purpose of moving the wheel forward as it cuts into the coal or other substance. The machine cuts a groove or narrow cavity directly into the walls of a mine, parallel, or nearly so, with the floor or walls, and as close as desirable, in such a manner as to admit of large masses being removed at once by wedges or blasting; thus saving the miners stooping in such unnatural positions as they now do, to pick away the floor, and saving much time. This valuable invention was patented this week in this country, and on January 9, 1858, in England.

Improved Planing and Slotting Machine.

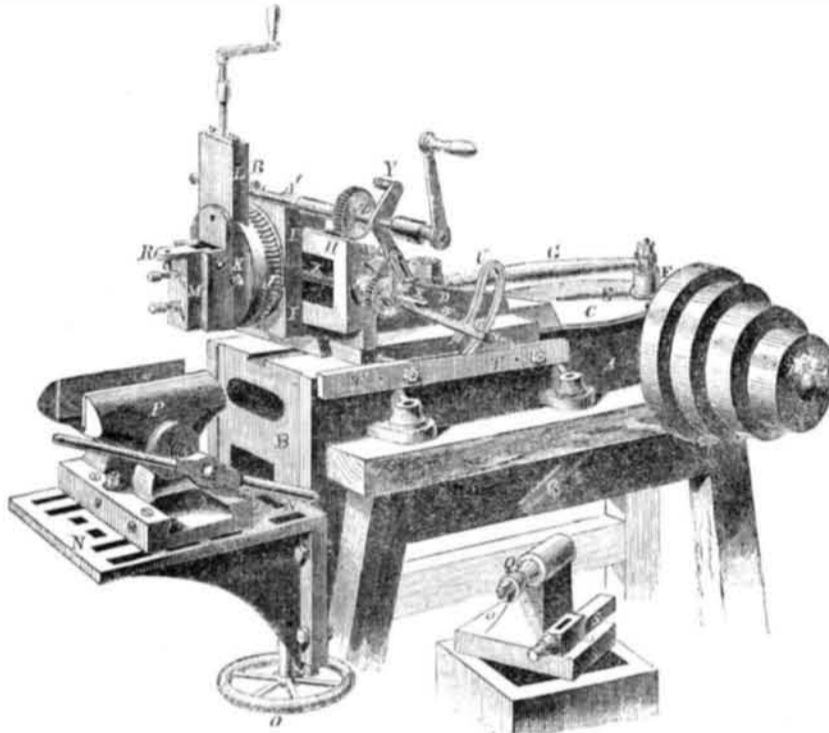
Messrs. Barton & Son, tool-makers, of Derby, England, have sent us a communication in which they give us the following particulars of their new machine, and to render them thoroughly intelligible to our readers, we have added the accompanying engraving:

The extended substitution of machinery in place of manual labor, and the consequent accuracy and rapidity of execution requisite in the manufacture of machinery, have led to the production of many ingenious mechanical tools, and foremost amongst them stands the shaping machine—one of the most valuable aids to the engineer and machinist. Its peculiar object is the production of those parts most difficult of execution by hand labor, and, considered financially, its value is very great. Any additional improvement in this most valuable tool must therefore be received with pleasure by mechanical men.

The subject of the accompanying illustrations, by Messrs. Barton & Son, is of this character, combining great simplicity with readiness of application to various classes of work. The design of it is to combine a planing, shaping, and slotting machine. Fig. 1 is a perspective view. The bed, A, and the vertical slide, B, are one casting. At the end of the bed, A, a circular recess is bored to receive an inverted bevel-wheel, C, which is driven by a pinion keyed on the end of the cone pulley shaft, D, carried by a long bearing cast on the side of the bed, A, so that the main slide, D, can pass over it. Across the top of the bevel-wheel, C, is cast an inverted V-slot, E, to carry the nut and stud, F, from which, by means of a connecting rod, G, reciprocating motion is given to the slide, D. Cast on the end of the slide, D, and at right angles to it, is the horizontal cross slide, H, upon which the tool box moves in ordinary planing. The saddle of the cross slide, I, has on the front side a central stud upon which turns the worm-wheel, J, cast to which are the bevel side pieces, K, between which the front slide, L, and tool-box, M, are fixed. The table, N, is secured to the slide, B, by angular side pieces, and is raised or lowered by means of a screw and hand-wheel, O. On the table, N, may be fixed the parallel vice, P, as shown in our engraving. The vice is fastened to the table by V-headed bolts, which work in a corresponding groove turned in the vice bottom, so as to allow the jaws to be set at any angle. When the machine is to be used for shaping bosses, the casting carrying the cone mandrel, Q, Fig. 2, is fixed on the table, by bolts and steady pins. The table is moved until the top corresponds with the in-

dex on the angle of the vertical slide, B, the cone mandrel will then be perfectly central with the worm-wheel, J. The tool-box, M, is lifted and secured at right angles to the vertical slide, D, by a bolt through a projection, R, cast on the top of the tool-box. The strong wrought-iron toolholder, S, Fig. 2, is then fastened in the tool-box, and the machine is

BARTON & SON'S SHAPING, PLANING AND SLOTTING MACHINE.



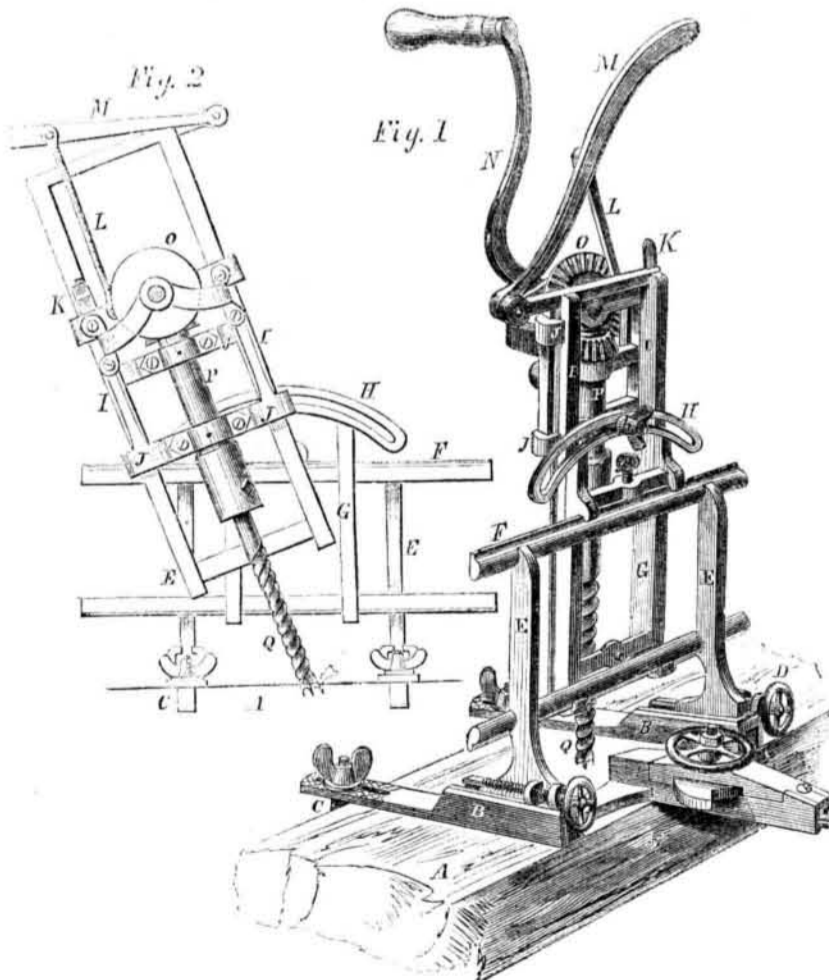
For slotting, the tool-box, M, is held as for shaping, when the slotting tool will be in a line with the working slide, D, as in an ordinary slotting machine. The work may be held either in the vice or on an angle plate bolted on the table, N.

Fixed on the side of the bed, A, is a bar of iron, T, carrying a movable slotted cam, U, into which, as the working slide, D, moves,

ready. In shaping external curves, the necessary motion to the tool is given by means of the worm and worm-wheel, J. For shaping internal curves, the work (either held in the vice or on the cone mandrel) must be lowered until the distance between the center of the worm-wheel and the work corresponds to the radius of the circle required.

runs a small roller, V, attached to the end of the bell-crank lever, W, axled on the end of the screw, X. On the short arm of the lever, W, is carried a double pall, Y, which gives motion to the screw, X, by means of the pinion, Z, keyed thereon. A similar motion is given the shaft, A', which carries the worm, B'. The motion is reversed by throwing the pall to the contrary side of the pinion.

BOSENBURY'S BORING MACHINE.



The great number of mechanical tools which have, and are, daily taking the place of the rude hand tools used by our ancestors, is a demonstration of the progress of the age; and although many are but mechanical con-

trivances attached to the old tools, and still intended to be operated by hand, yet they have gained much in convenience, accuracy, and speed. One of these is the tool we are about to describe, invented by Jonas Bosen-

bury, of Cherryville, N. J., and patented by him April 14, 1857.

Fig. 1 is a perspective view of the tool, set so as to bore a hole perpendicularly. A is the stuff to be bored, grasped by clamps, C, and the movable rack operated by the wheel shown in the foreground. D are two fractional screws, which move the boring frame to any position on the stuff, and E is the frame, having ways, F, running at right angles to it. On these ways fits the piece, G, provided with a quadrant, H, in which the tool is held at any angle by the set screw, b. This piece, G, can be secured to any position on the ways, F, by set screw, g. I I are two uprights, having cross pieces, J J, provided with journals, in which the auger-holder, P, rotates, carrying the auger, Q. These journal pieces, J, can slide up and down I, and can be pressed down to keep the auger in the stuff, by the lever, M, and link, L; and when not required, or not in use, the tool is kept up by the spring catch, K. N is the handle which rotates the bevel wheel, O, and so gives motion to the auger. The advantages of this machine are, that it can bore at any angle, it can be easily and accurately adjusted to any position on the stuff, and by means of the lever, E, great power can be given the tool. Fig. 2 is a front view, with the handle or crank removed.

The inventor will furnish any further particulars, if addressed as above.

Machine for making Plated or Covered Cord.

The cord known as "plated cord," which is manufactured by this machine, is composed of strands of cotton, which have first a separate covering of silk or worsted wound upon each, and are afterwards laid together in the same way as the strands of ordinary rope. The process of covering the strands with silk or worsted is termed "plating" them. This invention consists in the employment of certain means of producing the strands, and covering them with silk or worsted at the same operation, and by the same motion, whereby the threads constituting the body of each strand and the threads of silk or worsted covering the same, are caused to have the same twist, and consequently the covering is not likely to become loose upon the body of the strands. There are also "regulators" for preventing too great a strain upon the twisted and plated strands before they are laid together to produce cord, and they thereby insure the softness of the cord. There is an arrangement of the strand-twisting and plating contrivances and the laying mechanism, by which the whole are combined so as to form a machine of compact and convenient form, in which the strand-twisting and plating and the laying operations are effected in a very perfect manner. It is the invention of Charles Feichert, of New York City, and was patented this week.

Grinding and Polishing Glass.

This is a valuable invention and improvement, for the purpose of grinding and polishing glass surfaces. The inventor is Alexander Lindsay, of Malone, N. Y., and it was patented this week in this country, patents having been previously obtained in England, France, and Belgium. It consists in a method of producing a combined rotary motion, either of the grinding and polishing surface or surfaces, or of the surface or surfaces being ground or polished, through the agency of friction; and a simple rotary motion that is imparted to the opposed surface or surfaces, whereby an almost infinite permutation is produced between the different points in either of the surfaces relatively to the opposed surface or surfaces, and hence the grinding or polishing is enabled to be performed with a high degree of perfection.

PATENT EXTENSION.—Mr. Edie, from the Committee on Patents in the House of Representatives, has reported a bill for the extension of the patent of Edwin M. Chaffee for an improvement in the manufacture of india-rubber. It is now before a committee of the whole House.