

New Inventions.

Implement for Boring in the Earth.

The claims on another page, for an improvement on an implement for boring wells and holes in the earth, for which a patent has been granted to I. J. W. Adams, of Sharptown, Md., embrace a peculiar and valuable feature for boring. To the lower end of the shank of the auger there is secured a bail of a semi-circular form, to the lower ends of which there is attached by pivots a cylindrical vessel, having a spur at the center of its bottom, and a cutter which extends from this spur to the edge of a vessel, also an opening in the same, thus forming a hollow auger or borer. This auger has a semi-circular handle, to one side of which is attached a semi-circular spring, having a projection on its outer surface. This projection sets in a cavity in the under side of the bail, when the auger is in an upright position, and keeps the auger in place. The auger is rotated by handle, and it bores into the earth until it is full, when it is drawn up, then by simply pressing upon the knob of the spring described, the hollow auger discharges its contents, and the auger then re-adjusts itself for action, by simply relieving the spring from pressure, and is fit to continue the boring operation until the hole is completed.

Improved Straw Cutter.

The improved straw cutter of G. L. Squier, of Chicopee Falls, Mass.—the patent claims of which are in this week's list, on another column—is peculiar in its construction and operation. It has two shafts, one of which receives a more rapid motion than the other; upon one is placed circular or disk cutters, but upon the other both circular cutters and finger plates. These finger plates act as follows:—The shafts of the knives have to be made long so as to lay in the straw longitudinally with the shafts, and the fingers whipping round draw down the straw to the action of the rotating knives, which thus cut like circular shears. The cutters can be set by nuts at any distance apart, so as to cut fine and coarse, as may be desired. It cuts straw, cornstalks, &c., with great rapidity, and the cutters can be sharpened with great facility.

Slate Cutting Machinery.

The annexed figure is a perspective view of a machine for cutting and trimming slate, for which a patent was granted to Asa Keyes, of Brattleborough, Vt., on the 2nd of last month.

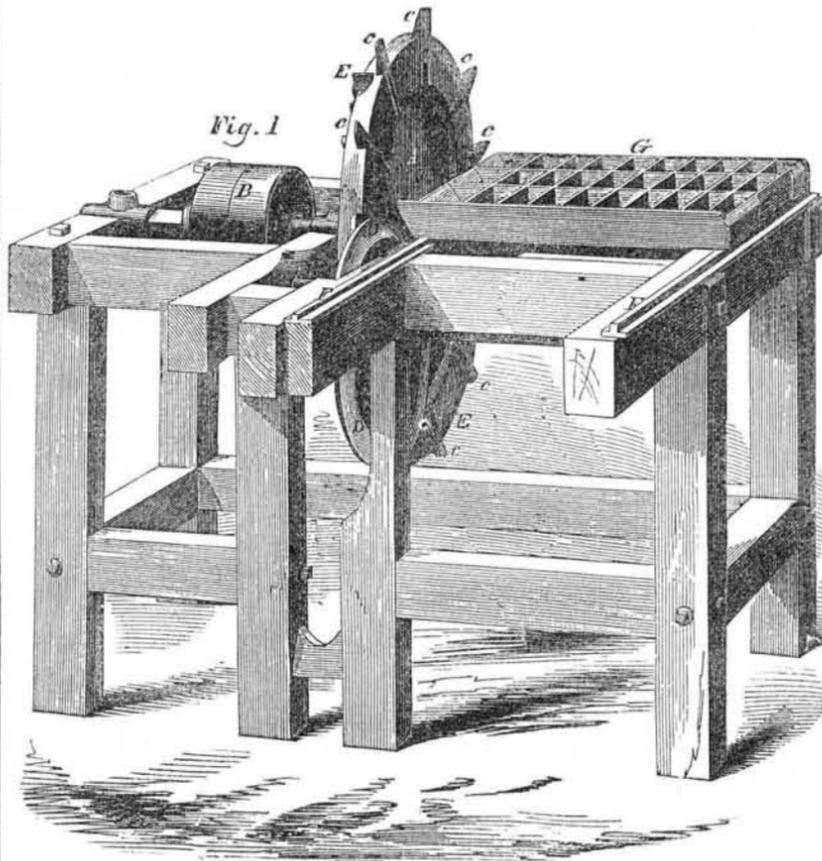
The nature of the invention consists in applying a rapid succession of stone hammer blows, each of which beats off a minute piece of the slate, while it, the slate, is carried along by a carriage on ways.

A is a heavy cast iron rotating wheel, mounted in suitable bearings, and propelled by a pulley, B. Into this wheel, and projecting a little beyond its periphery, are fastened firmly the requisite number of hammers or cutters, c c c.

Parallel with, and very near to the wheel, A, is another wheel, D, called the dog, the purpose of which is to support the under surface of the slate opposite and near to the point where each blow is given; this dog wheel turns freely on its axis. The carriage, G, on which the slate is laid, is furnished with friction rollers, which trundle it on ways, F F. The carriage may be of cast iron, and it is well to make it of open work like small window sash, for the purpose of allowing chips and dust to fall freely through it. The dog wheel is also of cast iron. It should rise a little higher than the upper surface of the carriage, to insure its contact with the slate. This dog may be a stationary, fixed segment of iron, over which the slate shall slide when the carriage moves, but a wheel which shall revolve is preferred whenever the adhesion or friction of the slate is sufficient to turn it. The hammers or cutters are made of wrought steel, or of cast iron provided the latter is chilled at the outer end which comes in contact with the slate. As

these hammers or cutters have narrow faces, and might have a strip of waste material which would run against the cast iron wheel and impede the motion among them, two or three flat pieces of iron, E, are inserted, to break off any such tongue of waste slate.—These flat head pieces should not project so far beyond the periphery of the wheel as do the hammers or cutters. The wheel which carries the hammers or cutters is heavy, and this weight of the wheel not only furnishes the momentum of the individual blows of each hammer, but supplies the purpose of a fly wheel to the machine. The hammers are held into mortises cast in the wheel, by bolts and nuts. The carriage may be shoved by the operator by hand, or it may be geared to be carried by the main axis. If this latter mode is pursued, it will be well to so proportion the feed to the revolutions of the main axis that each hammer will strike on to the slate about one-eighth of an inch, or

MACHINE FOR CUTTING AND TENONING SLATE.



one quarter, when the stone to be cut is of the thickness of roofing slate.

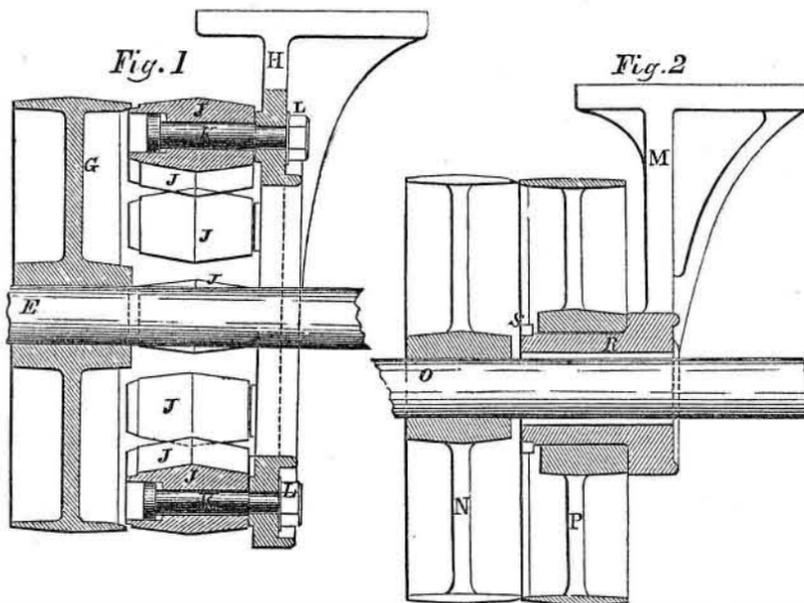
The advantages of the circular dog wheel are important, for if the slate in process of trimming bears upon a level rest, the unevenness of the slate will occasion it frequently to break and waste the material, but in this machine, the slate, however uneven, is always in contact with the circular dog at

the point where it receives the blow of the hammer or cutter, and thereby the frequent breaking of the slate is avoided.

Fifteen of these machines are used by the New England Mining and Quarrying Co., at Guilford, Vt. They have greatly reduced the cost in trimming and cutting of slate.

More information may be obtained by letter of Mr. Keyes, at Brattleboro', Vt.

BEARINGS FOR LOOSE PULLEYS.



The annexed engravings represent an improvement in bearings for loose pulleys, for which a patent was granted to the inventor, Wm. Campbell, and to E. W. Shippen, as an equal partner in the patent, on the 24th of last October.

Figure 1 is a vertical section, and figure 2 is also a similar section, the two figures representing the two modes of attaining the same object.

The object of the invention is the placing of a loose pulley and hanger beside a driving pulley on a line shaft, or on any intermediate shaft bearing the same relation to a lathe or other machine, to be detached as a

line shaft, whereby is obviated the continued wear attendant upon the loose pulley, shafting, and belts, when a lathe, or loom, or other machine, driven in from the line of shafting, is not running. The loose pulley and hanger having an axis may be made to revolve independent of the shaft. The improvement obviates the necessity of throwing belts off the pulley in order to prevent the wear of machinery while the engine is in motion, also making it more safe for the operatives.

Figure 1 shows one mode of attaining the object. H represents the hanger; E the driving shaft; G is a driving pulley fast to

the shaft, E; J J are a series of rollers or pulleys revolving upon their respective axes; K K are a series of bolts passing through the hanger, H. The bolts are made smaller and square or flat at the part passing through the hanger, H, thereby making a shoulder, which, together with a nut, L, on the end of the bolt secures it firmly to the hanger, H. The peripheries of the rollers or pulleys, J J, are adjusted to the periphery of the driving pulley, G. The length of the ark of the hanger, H, and the number of rollers or pulleys being governed by the bearings that a belt would have upon the driving pulley, G. Now by moving a belt from the driving pulley, G, to the rollers or pulleys, J J, a lathe or other machine attached to the pulley, G, is instantly detached, and has no connection with the moving machinery.

Figure 2 represents another mode. M R represents a hanger; P is a loose pulley; O is a shaft; N is a driving pulley fast to the shaft, O. The hanger, M R, is constructed so as to let the shaft, O, pass through the part, R, without being connected, while at the same time the part, R, forms an axis or journal for the loose pulley to revolve upon. S is a collar put upon the journal, R, to keep the loose pulley, P, to its place. Now by moving a belt from the driving pulley, N, to the loose pulley, P, a lathe or other machine attached to the driving pulley, N, is instantly detached, and has no connection with the moving machinery.

The loose pulley, P, may be thrown in motion by means of friction at the peripheries of the driving pulleys, N, and loose pulley, P, and a lever to throw them together when passing the belt from one to the other, may be given to the loose pulley, P, by any known method.

Then again a hanger bearing a driving shaft may be constructed with an axis independent of the shaft for a loose pulley.

The claim is for a "loose or suspension pulley or pulleys and hanger having an axis whereby a loose pulley may revolve independent of the shaft.

More information may be obtained by letter addressed to E. W. Shippen & W. Campbell, West Philadelphia, Pa.

Lubricator of Machinery.

Self-acting greasers have now become a necessity, hence a number of improvements on such apparatus have recently been secured by patents. Among the number was one granted to John Sutton, of this city, on the 16th ult., which deserves honorable mention. The improvements in his lubricator for machinery embrace two parts; one consists in the arrangement of the cylinder and piston, which is employed to inject the oil or grease into that part of the engine requiring oil, the piston being placed within the grease cup, thereby rendering the apparatus more simple and compact, than others acting on a similar principle. The other part of the improvements consists in a certain arrangement of valves, whereby the feeder is charged with oil, and discharged into the engine, by simply moving the piston once back and forth.

New Seeding Machine.

The machine of Job Brown, of Lawn Ridge, Ill., whose claims are published in this week's list of patents, is for sowing seed broadcast, and not in drills. A series of oblique cups are placed upon a rotating cylinder underneath the hopper, in combination with distributing plates which convey the seed from the hopper in such a manner that it is sprinkled (sown broadcast) with perfect regularity and evenness over the whole ground traversed by the machine. It requires considerable practice, a nicely balanced hand, and a good eye to sow broadcast so as to distribute the seed evenly, in the common way; this machine makes this business mechanical, and easily performed by a boy.

Burglar Alarm.

The Philadelphia Ledger speaks highly of the burglar alarm of D. Wells, which has been put in operation in that city in the house of Mr. Paul, Fifth street.