

IMPROVED POTATO CUTTER AND PLANTER.

We illustrate herewith two new agricultural implements, one of which serves for cutting seed potatoes into any number of pieces by means of simple mechanism. The other makes the drill, drops in the seed at any required distances apart, and finally fills the soil back into the furrow.

Fig. 1 of the small engraving is a perspective view of the cutter. The potatoes are contained in a suitable receptacle, whence they are removed by hand and placed singly in the tubes, A. These last are of varying diameter to accommodate potatoes of differing size. B is a strap which passes longitudinally across the table, through a guide piece thereon, Fig. 2, thence over a pulley, and is connected beneath with a treadle. On the upper side of the strap are bolted horizontal blades (one of which is shown at C, Fig. 2) which carry one or more vertical cutters on the portions contained within the peripheries of the tubes, A. These tubes, it will be seen, are slotted in order to allow all the blades to be drawn through them, an operation effected through the strap and treadle already referred to. By increasing the number of vertical cutters in any tube, the number of pieces into which the potato is divided is of course augmented. The system of knives is connected by bars underneath the table, secured to vertical arms extending down through slots, D, in the same.

In operation, after the potatoes are deposited, one in each tube, pressure upon the treadle carries the knives through them; and thus divided, they fall, through apertures beneath the tubes, upon an inclined plane, and into any vessel placed for their reception.

The larger engraving represents the planter, into the hopper in the rear of which the cut potatoes are deposited. Secured upon the axle is a cast iron disk, A, around the periphery of which a number of holes are made in order that the cups, B, may be fastened thereon, at any points or at any distances apart. As this disk revolves, the cups, which are turned rearward, enter the hopper from beneath, passing through an orifice protected by bristles, which serve to pre-

As soon, however, as each cup emerges from between the bristles its contents drop out, directly, however, into the drill made by the opening plow, D. Wings in rear of the latter, as the machine advances, replace the soil in the furrow, completing the planting. The knives in the cutter divide the seed into pieces of uniform size, and thus the constant filling of the cups is rendered more certain. Both inventions appear to possess labor-saving capabilities which will doubtless commend them to farmers.

Patented through the Scientific American Patent Agency, October 14, 1873, to Lemuel J. Mewborne, of Kinston, Le-

from specimens of its operation forwarded to us. Two fragments of boughs are before us, one 1½ inches and the other 2½ inches in diameter, each of which has been divided with a clean, smooth cut, apparently at a single stroke. The wood is hard maple, and the length of the cut is greater than the above diameters, owing to its being made at an angle.

For information, relative to the additional advantages of the tool, and descriptive circulars, address Broadbooks & Co., Batavia, N. Y.

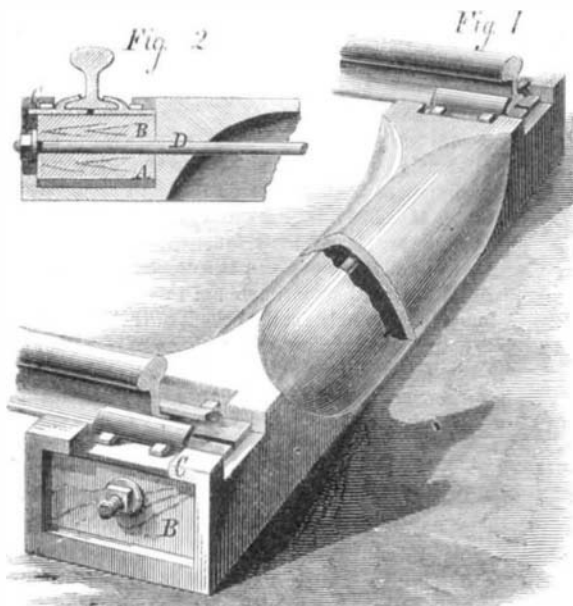
BLAISDELL'S IMPROVED RAILWAY TIE.

The invention illustrated herewith is an iron tie, designed as a substitute for the wooden tie ordinarily employed, and also to provide a strong and elastic support for the rails, while constituting a portion of a permanent way.

The peculiar form of the cast iron body of the tie, clearly shown in Fig. 1, is calculated to give strength and stability, and, at the same time, to insure economy of material. At each end are formed rectangular sockets, open at the top and at the outer extremities. The lower parts of said sockets are flanged in order to retain rubber blocks, A, in the sectional view, Fig. 2, above which wooden blocks, B, are laid. On top of each of the last, the rail chair is placed. The chair is made in two parts, so as to be adjusted readily to grasp the rail between the lip and foot plate. Overlapping portions of the body, C, together with the bolts entering the wooden block, securely hold the chairs in position. Passing longitudinally through the entire tie is a truss rod, D, which is set up outside the

wooden blocks with nuts and washers. The apertures through which this rod enters the metal part of the tie are made sufficiently large to allow the depression of the blocks when the rubber yields to superincumbent pressure.

It will be seen that the rubber blocks give an elastic support to the track, tending to nullify the results of jarring and compression. The wooden blocks serve a similar purpose, and may be used alone when any great degree of elasticity is not required. The chairs may be adjusted to hold rails having flanges of varying width; and owing to the firm bearing afforded by the abutting surfaces, they are retained in position with the least possible number of spikes.



The sloping contour given to the surface of the tie enables, it is claimed, the wheels of a train, in event of running off the track, to mount and pass over the ties, instead of crushing the same, as might otherwise occur.

Patented January 13, 1874. For further particulars address the inventor, Mr. George D. Blaisdell, Cambridge, Vt.

Mining in Massachusetts.

Some extremely rich mines of lead, silver, and gold have recently been discovered near Newbury, Essex county, Mass., which are now being worked with profit and with the prospect of an extraordinarily valuable yield. A single shaft 25 feet deep is now giving ten tons per 48 hours, the ore containing all three of the above metals. The net proceeds are \$110 per ton. A second shaft lately opened is being worked, and preparations are in progress for extended operations. The mine is supposed to extend for six or seven miles.

Although the above comes from the New York Tribune, we fear it is an over-statement.

Finely rubbed bichromate of potassa mixed with twice its bulk of sulphuric acid and an equal quantity of water will clean the dirtiest brass very quickly

MEWBORNE'S IMPROVED POTATO PLANTER.

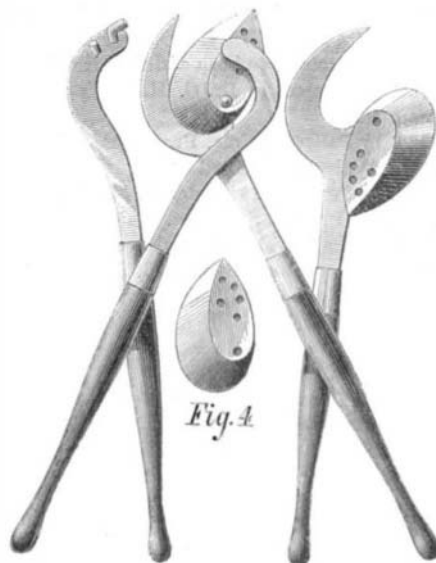
noir county, N. C., by addressing whom further particulars regarding sale of rights, etc., may be obtained.

BROADBOOKS' EXCELSIOR PRUNING SHEARS.

We illustrate herewith a novel pruning shears, the feature of which is a cam-shaped blade adapted for giving a very powerful drawing cut.

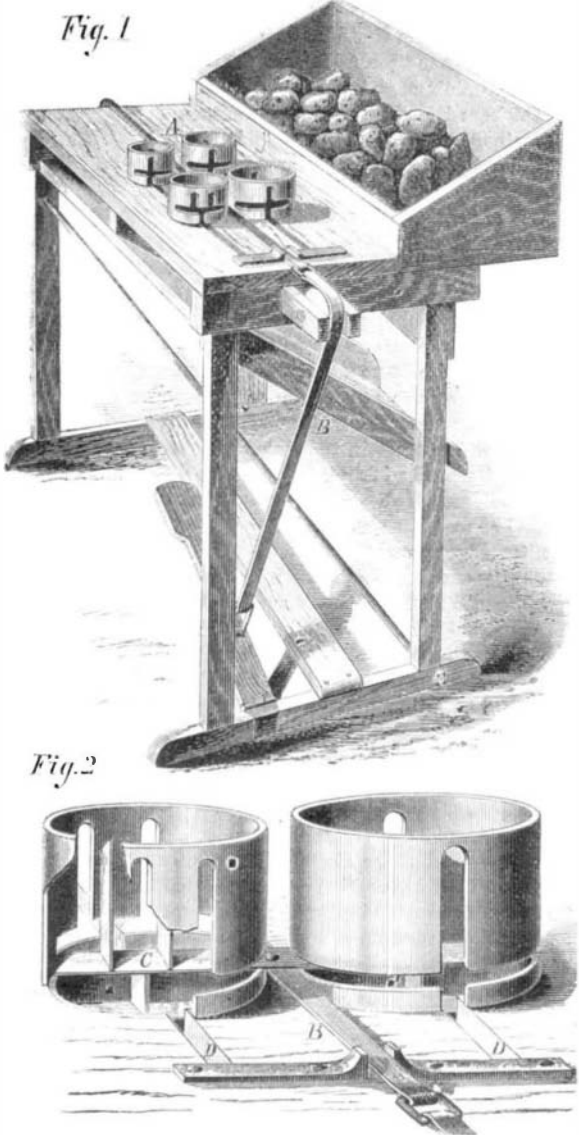
Fig. 1 represents the shears partially open, showing how the drawing cut is secured. Fig. 2 is the wrench or lever, provided with a hook and stud that drop in perforations on the blade, Fig. 4. Fig. 3 is the other handle, with the blade turned back against the shank, forming, when used singly or without the lever wrench, a hatchet or knife, for trimming small limbs, sprouts, or shrubbery. The cam-shaped knife blade is provided with a series of perforations to receive the hook and stud of the lever wrench. When the handles, Fig. 1, are brought toward each other, as is evident, the drawing cut is produced. The point of contact of the knife edge with the limb, where the power is to be ap-

Fig. 2 Fig. 1 Fig. 3



plied to do the cutting, is inside the pivot or bolt that holds the blade. The shape of the hook, Fig. 3, is such as to bring the limb to be cut directly under the fulcrum or pivot on which the blade operates. When the knife blade is applied it holds the limb firmly until cut, and prevents its slipping on the hook. Injury to the bark is prevented, also any crushing of the limbs, the ends being left smooth enough for grafting. In other pruning shears, where the power is applied outside of, and at a distance from, the fulcrum or pivot which holds the two jaws together, slipping of the limb often occurs, thereby mangling the bark. The very long handles also employed frequently crush the branches. The handles of the shears represented in the engraving are only eighteen inches in length, so that the power is in the shears itself instead of in long handles.

The efficiency of the device is very remarkable, judging

**MEWBORNE'S POTATO CUTTER.**

vent the escape of the seed. The cups thus become filled. As they are carried out of the hopper by the disk, they pass through a box, C (also shown larger, in Fig. 2). The sides of this attachment are fitted with bristles, which, while offering no resistance to the passage of the cup, retain the seed in the same as it is reversed by the rotation of the disk.