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C. O. GARDINER.

Cultivator and Seeding Machine.

No. 198,372. **Patented Dec. 18, 1877.**

Fig. 1.

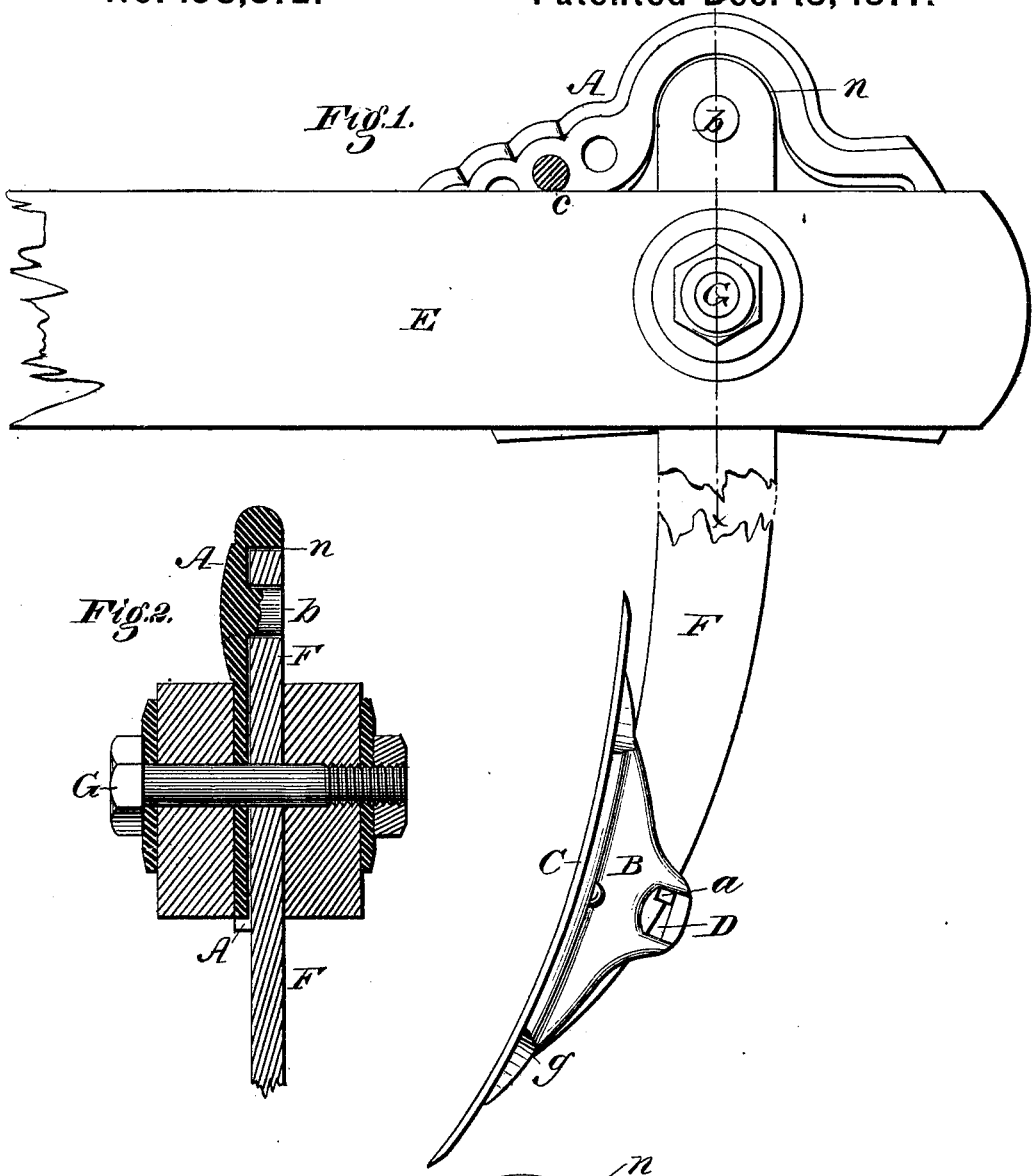
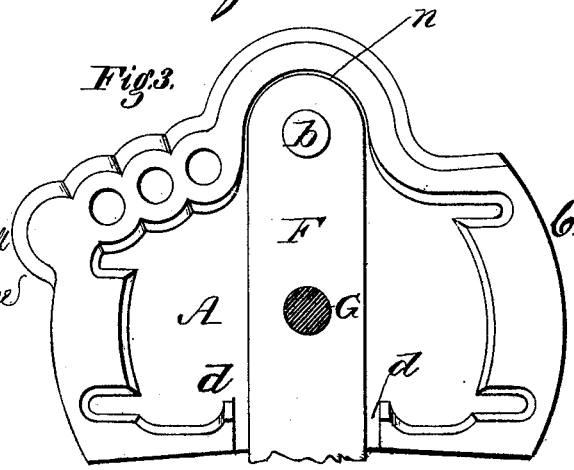


Fig. 2.

Fig. 3.



Witnesses:

Wm. P. Twitchell

Will H. Dodge

Inventor:

C. O. Gardiner

By his Attys.

Dodger & Son

2 Sheets—Sheet 2.

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Fig. 4.

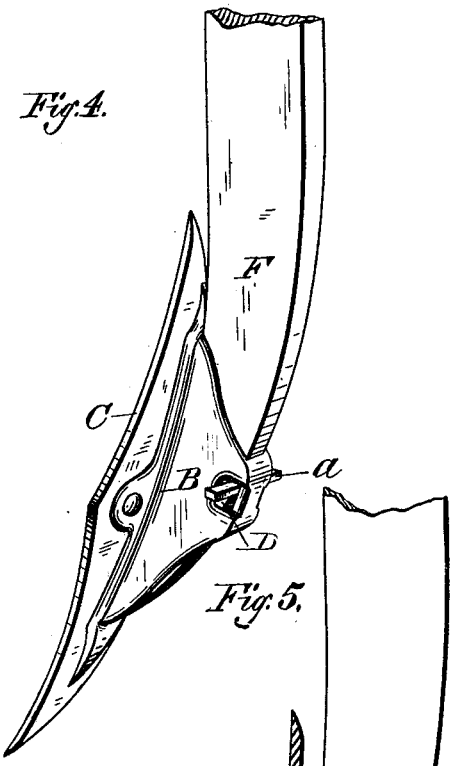
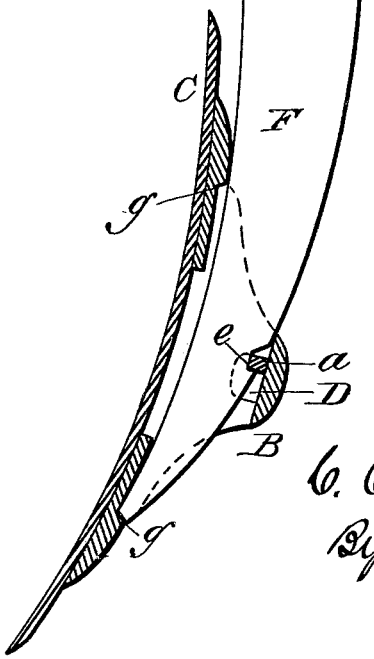


Fig. 5.



Witnesses:
Will W. Dodge
Donn P. Twitchell

Inventor:
C. O. Gardiner
By his attys.
Dodger & Co

UNITED STATES PATENT OFFICE.

CHARLES O. GARDINER, OF SPRINGFIELD, OHIO, ASSIGNOR TO P. P. MAST & CO., OF SAME PLACE.

IMPROVEMENT IN CULTIVATOR AND SEEDING-MACHINE.

Specification forming part of Letters Patent No. **198,372**, dated December 18, 1877; application filed September 6, 1877.

To all whom it may concern:

Be it known that I, CHARLES O. GARDINER, of Springfield, in the county of Clarke and State of Ohio, have invented certain Improvements in Cultivator and Seeding-Machine, of which the following is a specification:

My invention relates to that class of friction-blocks which are clamped in the slotted ends of drag-bars to carry and hold the upper ends of shovel-standards, and to reversible shovel-blocks and means of attaching the same to said standards; and the improvements consist in so constructing the friction-block that the standard has a bearing therein only above the clamping-bolt, from which it receives the remainder of its support, and in providing the shovel-block with a longitudinal mortise or opening to receive the standard, to which the block is secured by means of a key passing transversely through said block, and seated in a notch in the standard, as hereinafter more fully explained.

Figure 1 is a side elevation of my improved friction-plate and shovel-block; Fig. 2, a vertical cross-section on the line *x x* of Fig. 1; Fig. 3, a side elevation of the friction-block and upper end of the standard removed from the drag-bar; Fig. 4, a perspective view of the lower end of a standard, with my improved shovel-block applied, and Fig. 5 a vertical section of the same.

In the drawings, A represents the friction-block, consisting of a thin vertical plate, having a heavy flange or rib projecting laterally from its face across the upper side and ends, and partially across the lower side. This rib or flange is bent or curved upward on the upper side of the block, about midway between the ends, to form a socket, *n*, of sufficient size to receive the upper end of the standard F, and is omitted at a corresponding point on the lower side to permit the standard to pass through, the space thus formed being made of a width greater than that of the standard F, as clearly shown in Fig. 3, in order to prevent the standard from bearing against the rib on the lower side of the block A. The block is provided with a laterally-projecting stud, *b*, which is located centrally in the socket *n*, as shown in Figs. 1 and 3, and with a central perforation or hole, as shown in Fig. 2, through which the clamping-bolt G passes when the parts are in position.

The standard F is provided with two transverse perforations or holes, as shown in Figs. 2 and 3, the upper one arranged to receive or fit around the stud or pin *b*, thus steadying and holding the extreme upper end of the standard, and the other arranged to come opposite the perforation in the block A when the parts are in place, and to receive the bolt G, as shown in Figs. 2 and 3.

The parts being thus constructed, the pin or stud *b* is inserted into its hole or perforation in the standard F, and the two shoved into the slotted end of the drag-bar E together. The standard is moved to the proper position to bring the bolt-holes of the block A and standard F in line with each other, when the clamping-bolt G is passed from one side of the drag-bar E through the same, and through the block A and standard F, as shown in Fig. 2. When in this position, it will be observed that the upper end of the standard is held firmly against moving by the stud *b*, and that all other movement of the standard independently of the block is prevented by the clamping-bolt G.

It will also be noticed that when thus constructed and arranged a space, *d*, is left between the standard F and the ends of the flange or rib of the block A, as represented in Fig. 3, thus causing the standard to bear only on the stud-pin in the upper part of the block and on the clamping-bolt G.

When the standard is adjusted to the desired angle, the clamping-bolt G is tightened, which causes the sides of the slotted drag-bar to bear against the sides of the friction-block A, and hold the same to whatever position it may be adjusted.

If desired, a wooden pin, *c*, may be passed through one of a series of perforations formed in the flange or rib of the block A forward of the standard F, and arranged to bear upon the upper side of the drag bar or beam E, in the usual manner.

I am aware that friction-blocks have heretofore been made in which the standard was caused to bear both at the upper and lower

side; but it is found in practice that when thus constructed the blocks are liable to be fractured in use, while with the block constructed as herein described no such trouble is encountered, the strain coming on the stud only where it is strengthened by a heavy and continuous rib or flange, and the balance of the strain being taken by the wrought-iron clamping-bolt.

The next feature of my invention is the construction and means of attaching the shovel-block B to the standard F. The object of this device is to form a ready means of attaching and detaching the shovel-block to and from the standard, which shall admit of the block being reversed and used either end up, the block in such case being provided with a double-pointed or reversible blade.

To this end I construct a block, B, in the form shown in Figs. 1, 4, and 5, with a long curved bearing surface or face to receive the blade C, and with ears through which to pass rivets for securing the blade and block together, as clearly represented in Fig. 4. The rear side of the block is extended backward, and is provided with a longitudinal mortise or opening, at each end of which is formed a shoulder, *g*. This opening or mortise is to receive the lower end of the standard F, the point or extreme end of which bears against the shoulder *g*, while the front face of the standard F bears against the face of the mortise at top and bottom, and thus gives the block a very firm bearing on the standard.

Passing transversely through the block D, and bearing against the rear wall of the mortise, is a tapering pin or key, *a*, which has also a bearing on its upper face against the sides or edges of an opening, D, which is formed in the side walls of the block B, as shown. It will thus be seen that as the key is driven in its tapering form causes it to draw the block B backward and upward against the standard F, the key being seated in a notch in the rear face of the standard F, as shown at *e* in Figs. 1 and 5.

The opening D is made of such form and size that its edges shall give the proper bearing to the key, regardless of which end of the block is turned up.

It is obvious that the stud or pin may be omitted, and the upper end of the standard be supported by the walls or sides of the socket *n* and the bolt G only, though the form indicated is considered preferable, as being stronger, and as holding the beam steady in the block, even though the socket *n* should be a little enlarged or badly formed in casting.

In order to strengthen the attachment of the stud and plate, the metal is thickened on the back of the plate opposite the stud *b*, as shown in Fig. 2.

Having thus described my invention, what I claim is—

1. The friction-block A, provided with the side flanges and the stud *b*, in combination with the bolt G and the standard, perforated to fit upon the stud and bolt, as shown.

2. The pivot-block A, having the side flanges, in combination with the standard sustained therein, in the manner shown, without the assistance of the flanges.

3. The shovel-block B, cast in one piece with the shoulders *g*, and the key-seat D, substantially as shown.

4. In combination with the notched standard F, the reversible shovel-block B, having the shoulders *g* and the key *a* inserted, as shown.

5. In combination with a notched standard, F, a hollow reversible shovel-block adapted to fit upon the end of the standard, and a transverse tapering key, *a*, passed through the block and seated in the notch of the standard, substantially as shown.

6. In combination with a notched standard, a hollow shovel-block adapted to fit thereon, and provided with a shoulder to abut against the end thereof, and a tapering transverse key bearing in the block and standard, and serving to hold the block firmly against the front and end of the standard, substantially as shown.

CHARLES O. GARDINER.

Witnesses:
J. D. HURD,
CHAS. A. HARRIS.