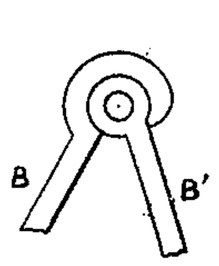
L. HAVERSTICK.

Cultivators.

No. 144,846. Patented Nov. 25, 1873.



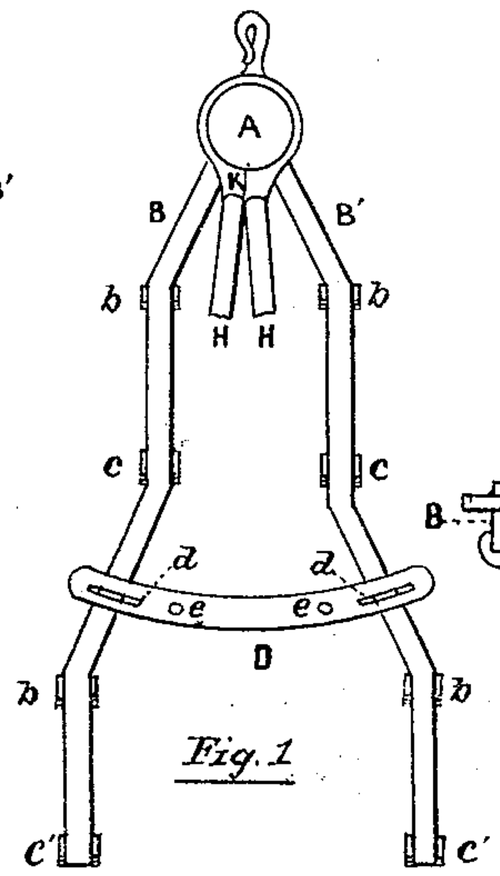


Fig. 1

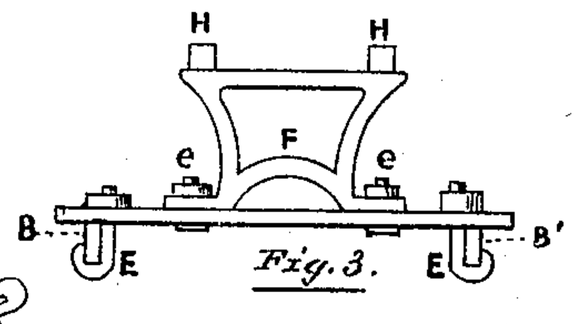


Fig. 3.

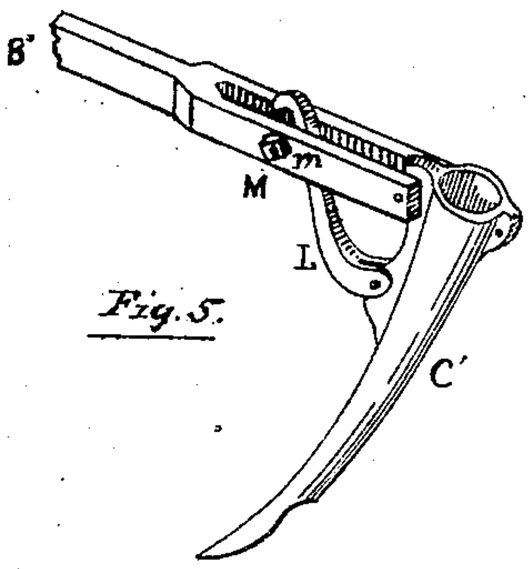


Fig. 5.

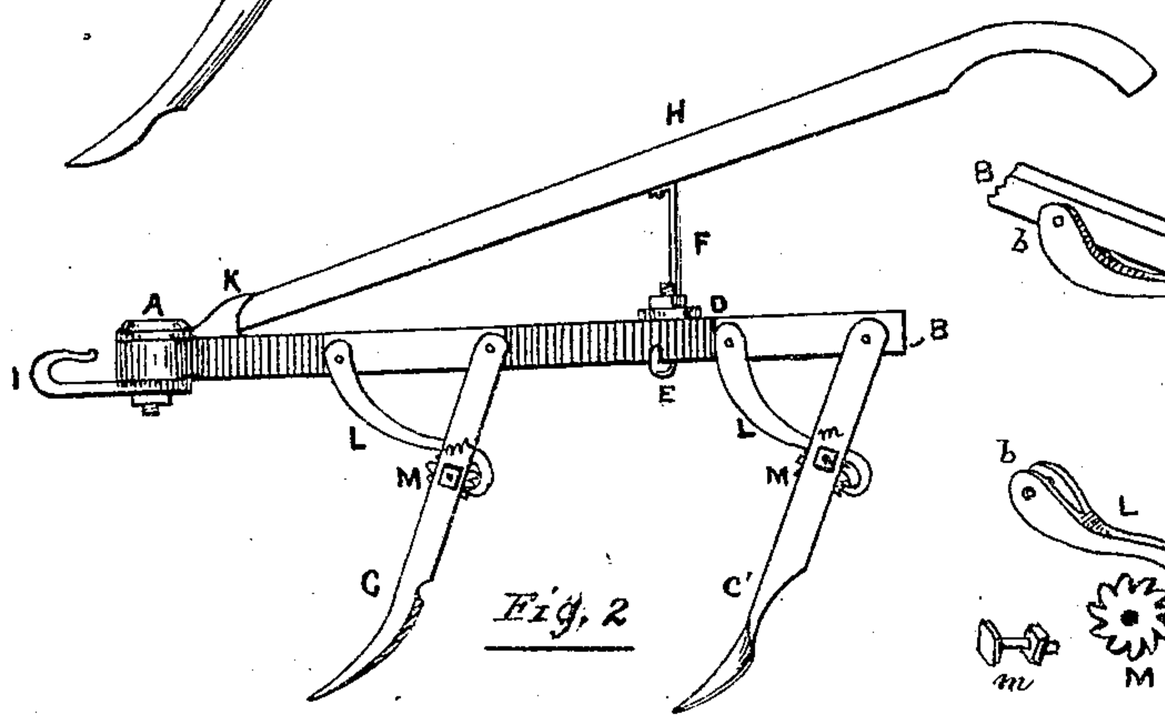


Fig. 2

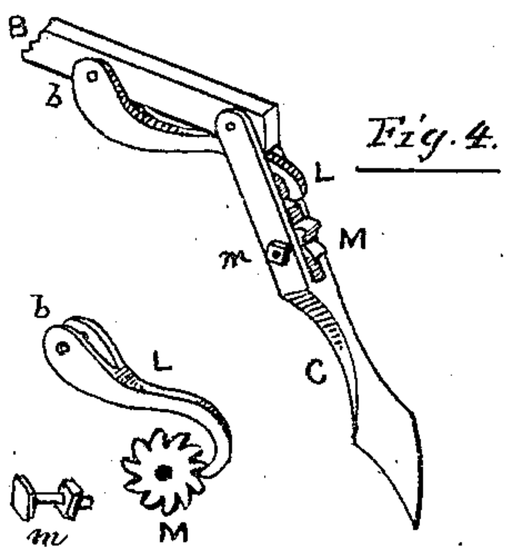


Fig. 4.

Witnesses.

W. B. Giles

Jacob Stauffer

Inventor.

Levi Haverstick

UNITED STATES PATENT OFFICE.

LEVI HAVERSTICK, OF MANOR, PENNSYLVANIA.

IMPROVEMENT IN CULTIVATORS.

Specification forming part of Letters Patent No. **144,846**, dated November 25, 1873; application filed April 23, 1873.

To all whom it may concern:

Be it known that I, LEVI HAVERSTICK, of Manor, in the county of Lancaster and State of Pennsylvania, have invented certain Improvements in Cultivators, of which the following is a specification:

This invention relates to that class of cultivators having iron beams made adjustable on pivots, and by a cross-section or curved bar, differing, however, in the manner of hinging the two beams on a common pivot or center-bolt which also holds the socket of the handles and draft-hook in front. The beams are also somewhat zigzag—that is, the portions to which the shovels and their slip-braces are connected are made straight, in a line with the draft, and sloped outward from the front and centrally. The handles can be set to the one side of the machine by adjusting the central support. The object is twofold—to give the shovels a straight forward position, and to prevent breaking when an obstruction is met.

The accompanying drawings illustrate the parts, in which—

Figure 1 and side figure show the union and form of the two beams and handles; Fig. 2, a side elevation, showing the slip-braces, shovels, draft-hook, and handles. Fig. 3, the adjustable handle-supports and cross-plate attachment. Fig. 4 and side figure show the slip-brace, the shovel thrown back. Fig. 5 simply illustrates a modification of the beam and shovel.

The beam B′ has its end forged into a circular head, with an eye for the pivot-bolt A. The other beam, B, is forged in like manner, so as to embrace the circular head of B′, forming a hinge-joint on the single pivot-bolt A. The head of this bolt is sufficiently large to cover the combined circular ends of the beams B B′. There is a socket, K, which receives the ends of the handles H, forged out to form a washer under the head A. The draft-hook I is, in like manner, formed into a washer beneath, the whole secured by a nut on the screw end of the headed pivot-bolt A. The beams B B′ diverge from the head to near the point *b*, where the slip-braces L are attached; thence, or those portions of the beams occupied by the first and second pair of shovels and braces, are made parallel to each other, or nearly so, the intermediate space again diverging, thus throwing the hind pair of shovels further apart, as shown by Fig. 1, which also shows the ordinary curved and slotted cross or adjusting bar D, (shown by Fig. 3,) with the hooked screw-bolts E and nuts in place. The chair F, which supports the handles H, has two feet, each perforated for a bolt or nut, *e*. This chair may be so adjusted as to bring the handles to the left side of the machine, the socket-washer K turning readily on its pivot to any point the chair with the handles attached may be fixed, holes being provided for such change.

The shovels C and their supports can be forged by welding two pieces together, so as to leave an open space or slot for the reception of a ratchet-wheel, M, or a bolt with an adjusting screw-nut only, and also to receive the beam above between them, to which they are secured by a pivot, on which they turn. The slip-brace or pawl L is, in like manner, forked at *b*, and secured to the beam by a pivot-bolt, and carried through the open space of the shovel-support, terminated by a tooth, to engage into the ratchet-teeth of M when used, to hold the shovel so adjusted by the screw-nut as to resist any degree of force short of causing too great a strain or injury to the shovel when an object is struck.

I also illustrate, by Fig. 5, the same elements reversed, but do not so use nor claim them in my cultivator.

The same may be simplified by dispensing with the ratchet M and hook on the end of the braces L. Said braces can be clamped sufficiently tight to resist all ordinary strain by means of the headed adjusting screw-bolt and nut *m*, the two sides acting as springs upon the braces to hold them by lateral pressure, the object being to avoid making the stocks or beams so heavy as to prevent their breaking by striking a rock or root sufficiently hard to produce that result.

What I claim as my invention, and desire to secure by Letters Patent, is—

The beams B B′, held on a common center-pin or pivot-bolt, A, in combination with the shovels C, ratchet M, and slip-brace or pawl L, all arranged and operating substantially in the manner and for the purpose described.

LEVI HAVERSTICK.

Witnesses:
W. B. WILEY,
JACOB STAUFFER.