2 Sheets—Sheet 1.

W. G. BARNES.

CORN-CULTIVATORS.

No. 193,912. Patented Aug. 7, 1877.

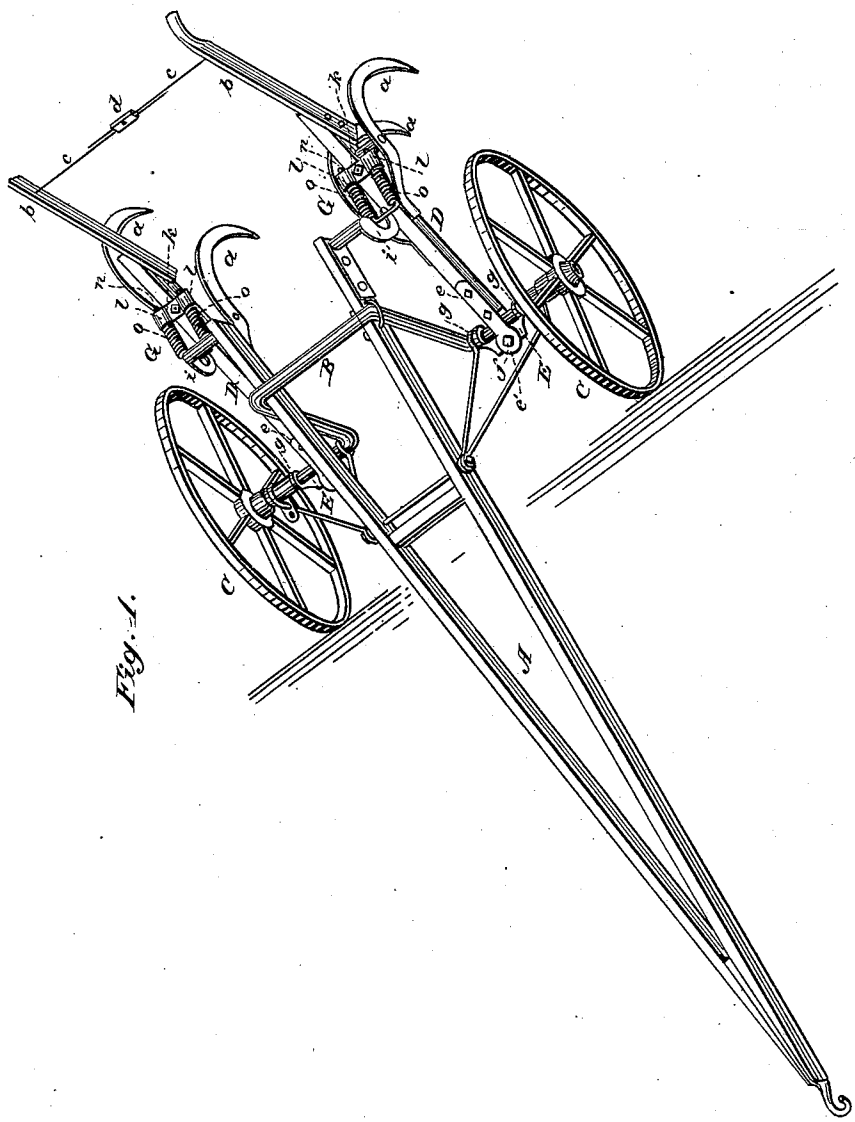


Fig. 1.

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2 Sheets—Sheet 2.

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Fig. 2.

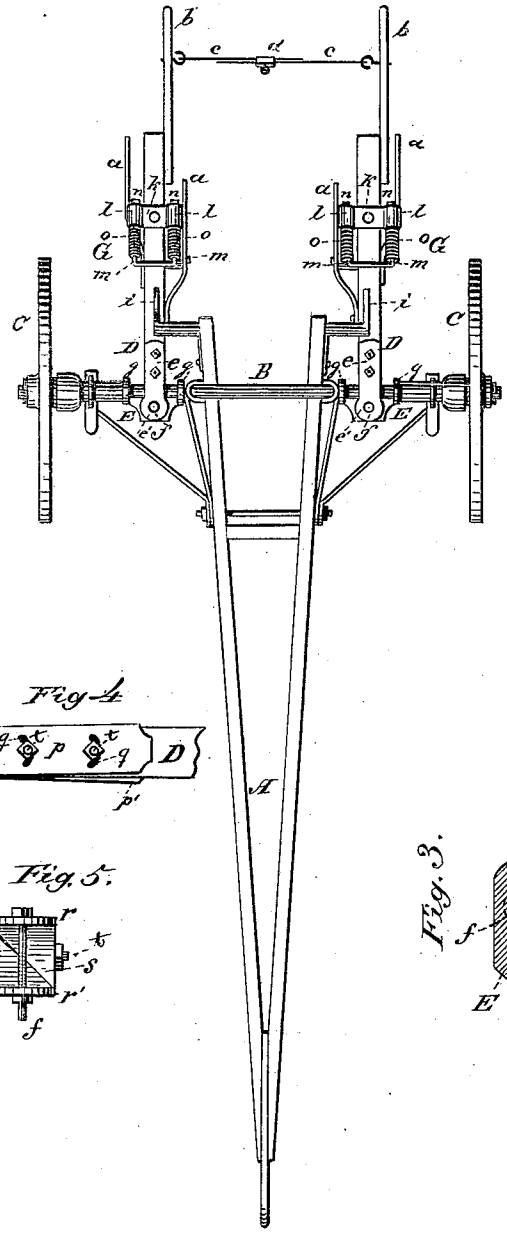
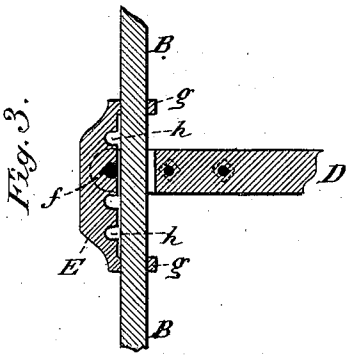


Fig. 4

Fig. 5.

Fig. 3.



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UNITED STATES PATENT OFFICE.

WALTER G. BARNES, OF FREEPORT, ILLINOIS.

IMPROVEMENT IN CORN-CULTIVATORS.

Specification forming part of Letters Patent No. 193,912, dated August 7, 1877; application filed June 19, 1877.

To all whom it may concern:

Be it known that I, WALTER G. BARNES, of Freeport, in the county of Stephenson and State of Illinois, have invented certain new and useful Improvements in Corn-Cultivators; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification, and in which—

Figure 1 is a perspective view. Fig. 2 is a top plan. Fig. 3 is a longitudinal section of the beam-coupling device. Fig. 4 is a side elevation of a portion of one of the beams, showing an improved construction of the clamping or coupling plates used in combination with the coupling device represented in Fig. 3; and Fig. 5 is a front or end view of the beam with the clamping-plates shown in Fig. 4, the axle and coupling-sleeve inserted between the latter having been removed.

Similar letters of reference indicate corresponding parts in all the figures.

My invention relates to walking-cultivators; and it consists, first, in the construction of a spring loop or hook for hanging the beams on the ends of the tongue when the implement is not in use; and second, in the construction and arrangement of adjustable coupling or clamping plates to be used in combination with the beams and with the coupling-sleeve, substantially as hereinafter more fully described.

In the drawings, A is the tongue, B the arched axle, and C C the wheels. D D are the beams, carrying the blades or shovels *a*, which may be of any suitable construction, and having handles *b*, united by rods *c c*, adjustable by means of the clamp-piece *d* in such a manner that their distance from each other may be easily regulated.

Beams D are hinged upon the axle B (one on each side of its arch) in such a manner as to have not only an up-and-down, but also a free lateral motion. This I accomplish by means of the coupling and coupling-plates, to be hereinafter described.

When the cultivator is not in use, or in going to and from the field, the hinged beams D D are turned up, and hung upon hooks *i i*, which are bracketed to the sides of the tongue (so that the shovels *a* will be lifted out of and above the ground) by means of the spring-loops G. Each of these consists of a short cross-piece, *k*, bolted to the beam, and having two parallel tubular slots, *l l*. In these slots work the parallel arms of a loop or bail, *m*, which are prevented from coming out of the tubular slots or recesses into which they are inserted by nuts *n*. Coiled around each arm of the loop or bail *m* is a spring, *o*, the ends of which will, therefore, impinge upon the piece *k* and the front or cross-piece of the loop, so as to force the latter out from the sockets *l l*. After work is over, and it is desired to hang the beams upon their respective hooks, all that is necessary is to lift them by their handles *b* up vertically until the loops strike the hooks *i*, which will force the bails *m* back into their sockets until they slip over the hooks, and the beam will be in place. To lower them into their working position they are lifted a little to one side, which permits the loops to slip off the hooks.

It is obvious that instead of having the spring-loops secured upon the beams and the hooks on the tongue or frame, this arrangement may be reversed, and the hooks may be placed on the beams, and vice versa; and also that instead of having the loops or bails *m* pass through sockets in the piece *k* the two parallel arms of the loop may be secured rigidly in this piece, and the cross-piece (which strikes against the hooks) made with eyes, so as to slide upon these arms and work against the spring *o*, in which case the hooking of the beams is effected by forcing the sliding cross-piece back on the arms, when it comes in contact with the hook far enough to let it slip over.

The device for coupling the beams to the axle consists of a block, E, projecting from one side of which, parallel to each other, are two sleeves or eyes, *g g*, which fit around the axle B. The piece E has a series of vertical notches or perforations, *h*, for the insertion of the coupling pin or bolt *f*, by which the beams are united to the axle. *e e* are plates, screwed or bolted, respectively, to the upper and under side of each beam, and having projecting ends

so as to form jaws which fit over the axle and are secured by pin or bolt *f*, which passes vertically through the jaw, in one of the notches or perforations in the coupling-piece E. By this combination of the notched coupling-piece E with plates or casting *e* and bolt *f*, the distance between the two beams may readily be adjusted, and the beams will have sufficient lateral play to be at all times kept close to the row, even if, during the advance of the machine, the line of draft should change somewhat.

The second part of my invention relates to the castings or plates by which the beams are secured upon the coupling E. These may consist of flat strips *e*, bolted to the upper and lower sides, respectively, of each beam, and projecting from the ends, so as to form jaws, as already described. An improved construction is, however, represented in Figs. 4 and 5, consisting of two side plates, *p p'*, bolted one to each side of the beam, and having segmental slots *g*, instead of ordinary bolt-holes. Each of the plates *p p'* has an arm or bracket, *r r'*, projecting at a right angle, these two plates or brackets forming the coupling-jaw, and having vertical perforations for the insertion of the coupling-pin *f*. Plates *p p'* and *r r'* are united and strengthened by diagonal braces *s s'*, which also serve as a cap, preventing the front end of the beam from wearing against the axle.

The advantage of this construction is that it will take up any slack or wear in the axle or coupling by simply loosening the nuts on bolts *t* and tightening the nut on bolt *f*, which will tip or turn plates *p p'* in opposite directions, bringing arms *r r'* closer together obliquely, thereby preventing the coupling from being too loose, so that the beams and shovels may be firmly moved laterally.

Having thus described my invention, I claim and desire to secure by Letters Patent of the United States—

1. As an improvement in cultivators, the combination of the hinged beams D, having spring-loops G, axle B, and tongue or frame A, having hooks *i i*, substantially as and for the purpose herein shown and described.

2. In combination with the beams D and axle B, the adjustable coupling-jaw herein described, consisting of the plates *p p'*, having segmental slots *g*, projecting lips *r r'*, and diagonal front caps or braces *s s'*, constructed and combined to operate substantially as and for the purpose herein shown and described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

WALTER G. BARNES.

Witnesses:
WILLIAM BARNES,
RUDOLF HEFTI.