J. Armstrong, Jr.

Sheet 1, 2 Sheets.

Cultivator.

No. 51,680. Patented Dec. 26, 1865.

Fig. 1.

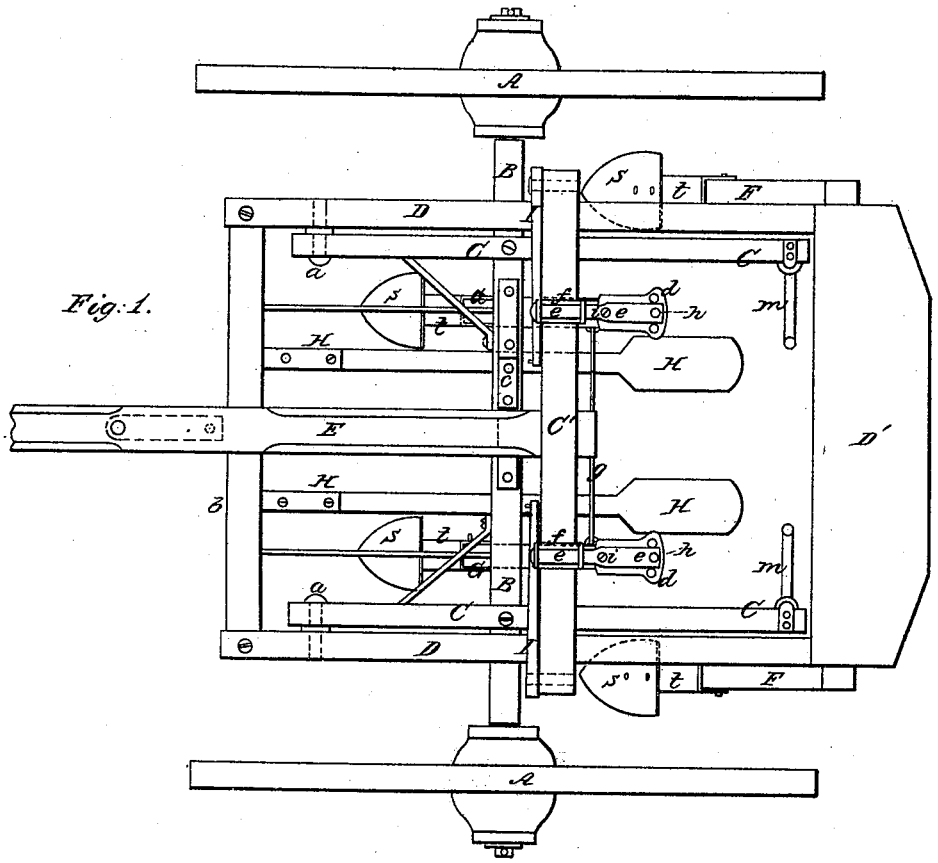
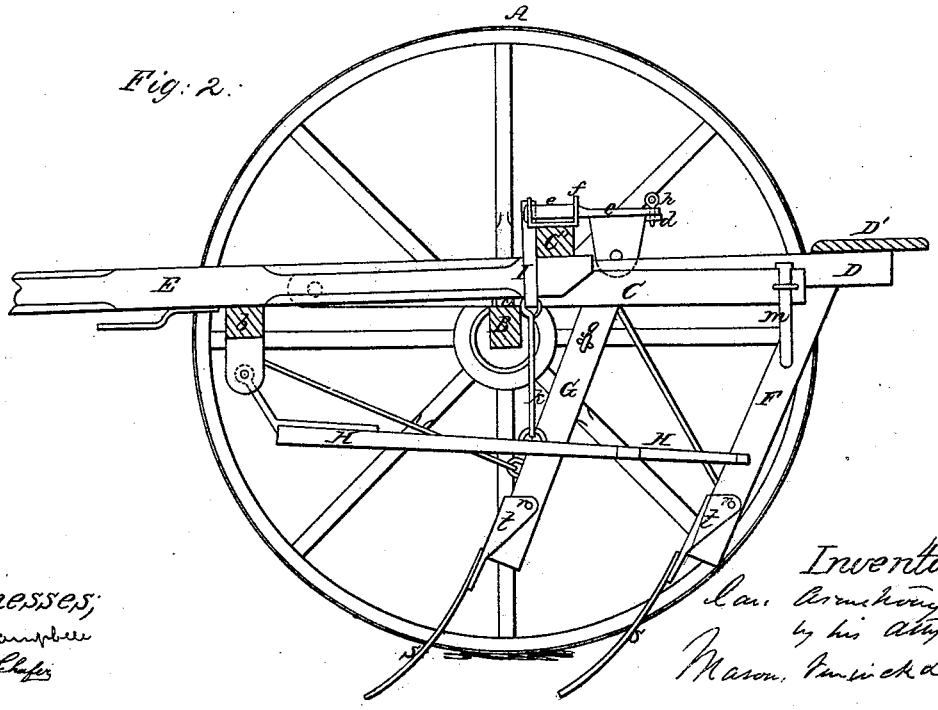


Fig. 2.



Witnesses;
R. F. Campbell
Edw. S. Shafer

Inventor;
Jas. Armstrong Jr.
by his Atty;
Mason, Fenwick & Lawrence

J. Armstrong, Jr.

Sheet 2
2 Sheets.

Cultivator.

No. 51,680. Patented Dec. 26, 1865.

Fig: 3.

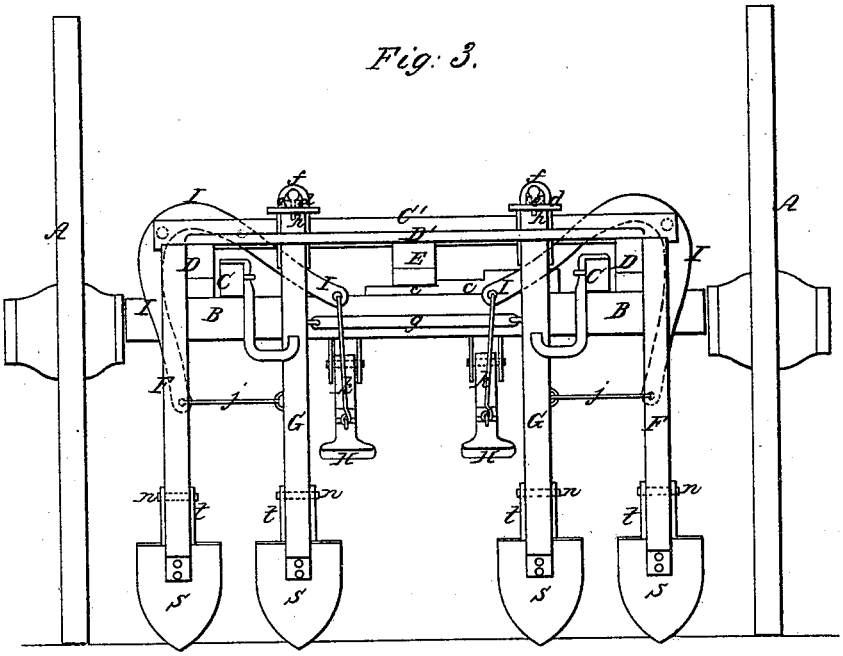


Fig: 5.

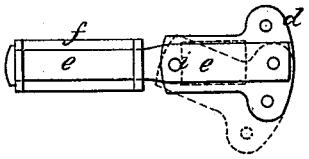


Fig: 6.

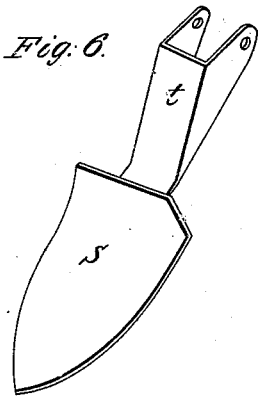
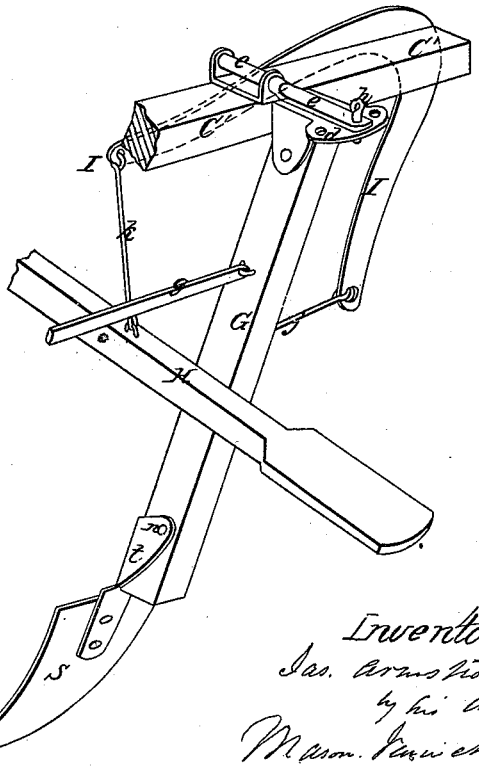


Fig: 4.



Witnesses;
R. F. Campbell
Edw. Schafer.

Inventor;
Jas. Armstrong Jr.
by his Atty.
Mason, Fenwick & Lawrence

UNITED STATES PATENT OFFICE.

JAMES ARMSTRONG, JR., OF ELMIRA, ILLINOIS.

IMPROVEMENT IN CULTIVATORS.

Specification forming part of Letters Patent No. **51,680**, dated December 26, 1865.

To all whom it may concern:

Be it known that I, JAMES ARMSTRONG, Jr., of Elmira, in the county of Stark and State of Illinois, have invented a new and Improved Cultivator; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1, Sheet 1, is a plan view of my improved cultivator. Fig. 2, Sheet 1, is a longitudinal section taken in a vertical plane through the cultivator. Fig. 3 is a rear end elevation of the machine. Fig. 4 is a perspective view, showing the mode of attaching one of the treadles to one of the shovel-standards. Fig. 5 is a top, viewing the mode of attaching and adjusting one of the swinging standards. Fig. 6 is a perspective view of one of the shovels and its attaching-iron.

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

This invention relates to a new and improved machine which is intended for cultivating corn and finishing the rows by once passing over them. Its object is to enable the attendant, while riding upon the machine and managing his horses, to conveniently control the movements of those shovels which are nearest the plants by means of his feet; also, to enable him to elevate all the shovels free from the ground at pleasure by means of his feet, as will be hereinafter described.

Another object of my invention is to provide for pivoting those shovel-standards which are nearest the plants to the frame of the machine in such manner that the shovels can be adjusted and set so that they will either throw the earth about the roots of the plants or throw it from the plants, as may be required, as will be hereinafter described.

Another object of my invention is to provide for adjusting the frame of the machine upon its axle, and supporting such frame at different heights for regulating the depth at which it is desired the shovels should run in the ground, as will be hereinafter described.

To enable others skilled in the art to understand my invention, I will describe its construction and operation.

In the accompanying drawings, A A represent two transporting-wheels which turn loosely upon the axle B.

C C are two longitudinal parallel beams, which are secured rigidly upon the axle B at an equal distance on each side of its center, and D D are two beams which are somewhat longer than the beams C C, and which are arranged outside of the latter and pivoted to them at *a a* by means of horizontal transverse pins, as shown in Fig. 1. The forward ends of the longitudinal beams D D are connected together by a transverse brace, *b*, and the rear ends of these beams are connected together by a transverse board, which serves as the driver's seat D′. At an intermediate point between the two braces *b* and D′, and slightly in rear of the axle B, is a transverse brace, C′, to which and the front brace the draft-pole E is rigidly secured. The two longitudinal beams D D and their cross-braces constitute the supporting-frame for the shovel-standards, which are four in number, two outer standards, F F, which are secured rigidly to the rear ends of said beams, and two inner standards, G G, which are connected by a pivot-joint to the intermediate cross-bar, C′, as will be hereinafter described.

The supporting-frame for the standards rests upon a stepped block, *c*, consisting of three or more stepped elevations, and this block is secured upon the axle in any suitable manner which will admit of any one of the stepped surfaces being secured beneath the draft-pole, so that said frame may be sustained at any desired height above the axle upon one or the other elevation of the stepped block. By means of this movable block the frame of the machine can be set so that the plows or shovels will run deeper or shallower in the ground, as may be required.

On the upper ends of the shovel-standards G G perforated segments *d d* are secured, which are formed on the rear parts of caps that have ears formed on them to receive and secure in place said standards. These caps are pivoted at *i i* to longitudinal rods *e e*, the forward ends of which are pivoted to bearings *f f* on the cross-bar C′, as shown in Figs. 1, 2, and 5. These rods *e e* allow the lower ends of the two standards G G, which are connected together by a cross-bar *g* to vibrate laterally,

and the vertical joints at *i i* allow said standards to be turned either to the right or to the left, as occasion may require. An outward direction or an inward direction may be given to the shovels on the standards G G by adjusting them about the pivots *i i*, and they may be fixed in such positions by the pins *h h*, which pass through the ends of the rods *e e* and through the perforations through the segments *d d*.

The standards G G, which are intended for running nearest the plants, are connected to two treadles, H H, by means of connecting-rods *j j*, curved levers I I, and connecting-rods K K, so that by depressing one of the treadles H the lower ends of the standards G G will both be moved laterally in one direction, and by depressing the other treadle H these standards will be moved in an exactly opposite direction. The levers I I are pivoted to the front side of the cross-bar C′ and curve over the longitudinal beams of the main supporting-frame, as shown in Figs. 3 and 4. The two treadles H H are pivoted to hangers beneath the front cross-brace, *b*, and extend back beneath the axle a sufficient distance to be convenient for the driver to operate them with his feet while sitting upon the seat D′.

The rear ends of the longitudinal beams C C are carried out in rear of the axle B a suitable distance and provided on these ends with hooked stirrups *m m*, upon which the driver presses with his feet when he desires to elevate the standard-frame and the standards, and thus lift the shovels free from the ground.

Each one of the standards carries a shovel, *s*, which is bolted to a casting, *t*, that has two wings formed on it, which embrace the lower end of the standard and receive through them a transverse pivot, *n*. By thus connecting the shovels to their standards it will be seen that they will remain stiff while the machine is advancing; but when the machine is backed or turned these shovels will swing forward on their pivots *n*, instead of being bent or broken, which would be the case if the above provision were not made.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The shovel-carrying frame D D, with the driver's seat D′ secured to its rear end, said frame being pivoted by its forward ends to two levers which are secured rigidly to the carriage-axle B, and are provided with foot-stirrups *m m*, substantially in the manner and for the purpose described.

2. The movable stepped block *c*, applied to the axle B of a cultivator-carriage, for adjusting the shovel-frame of the cultivator, substantially in the manner herein described.

3. The longitudinal laterally-rocking rods *e e*, in combination with the pivoted cap *d*, applied in a cultivator, substantially in the manner and for the purpose herein described.

4. The compound pivot-joint *e i*, for connecting the shovel-standards G G to their supporting-frame and allowing the lateral vibration of the standards, as well as permitting the desired adjustment of the same either to the right or left, substantially in the manner described.

5. Constructing the shovels *s* with an embracing-extension, *t*, which is pivoted to the standard in the manner described and represented, for the purpose set forth.

6. The combination of the shovel-frame D D C′, with the levers C C, vibrating standards G G, curved levers I I, and treadles H H, substantially as described.

JAMES ARMSTRONG, JR.

Witnesses:
J. W. HEWITT,
ROBERT ARMSTRONG.