B. S. MORGAN.

Wheel-Cultivator.

No. 21,690. Patented Oct. 5. 1858

Fig. 1.

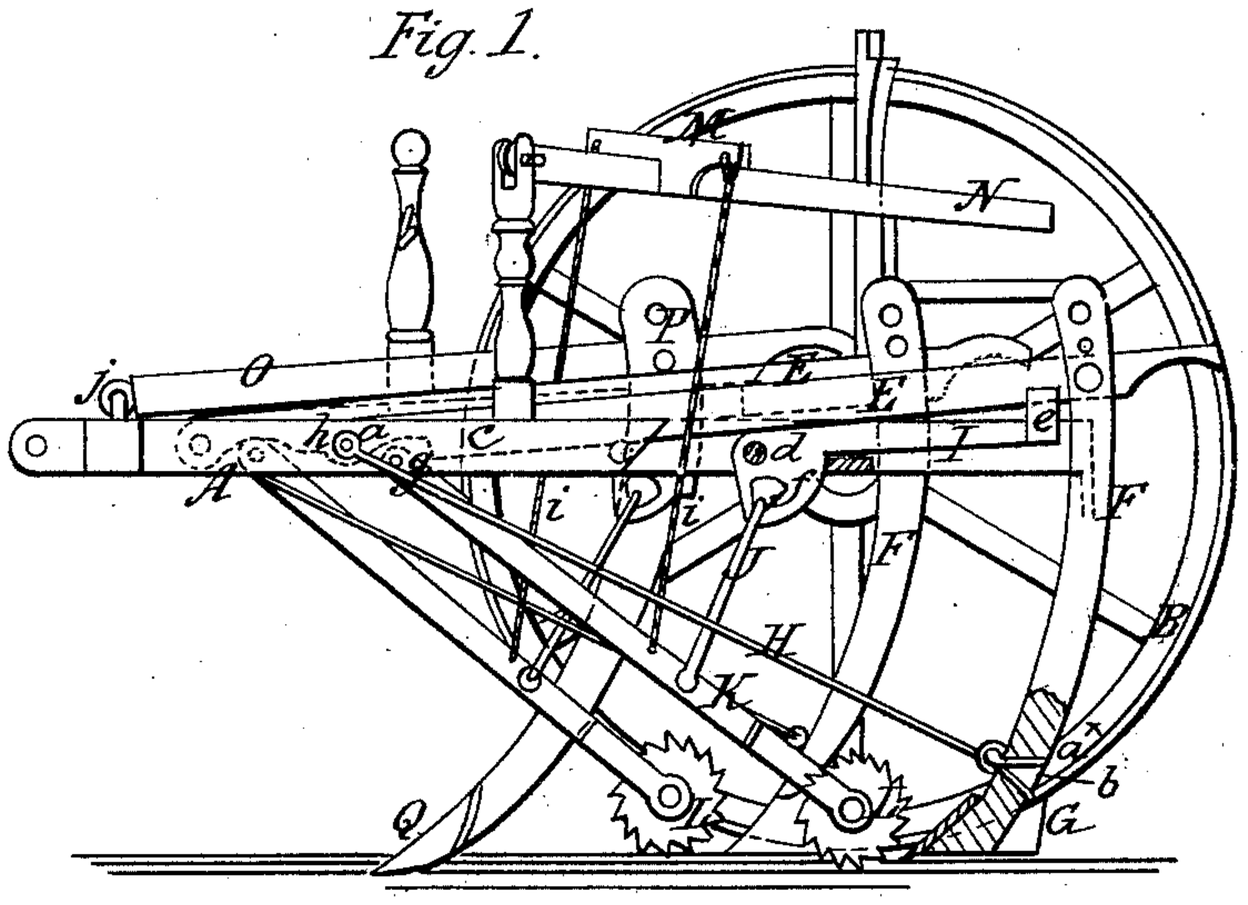


Fig. 3.

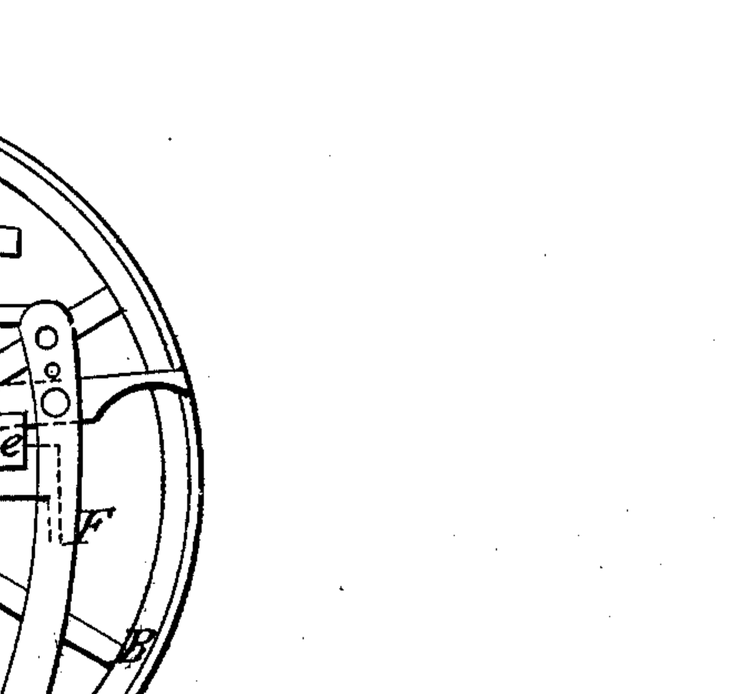
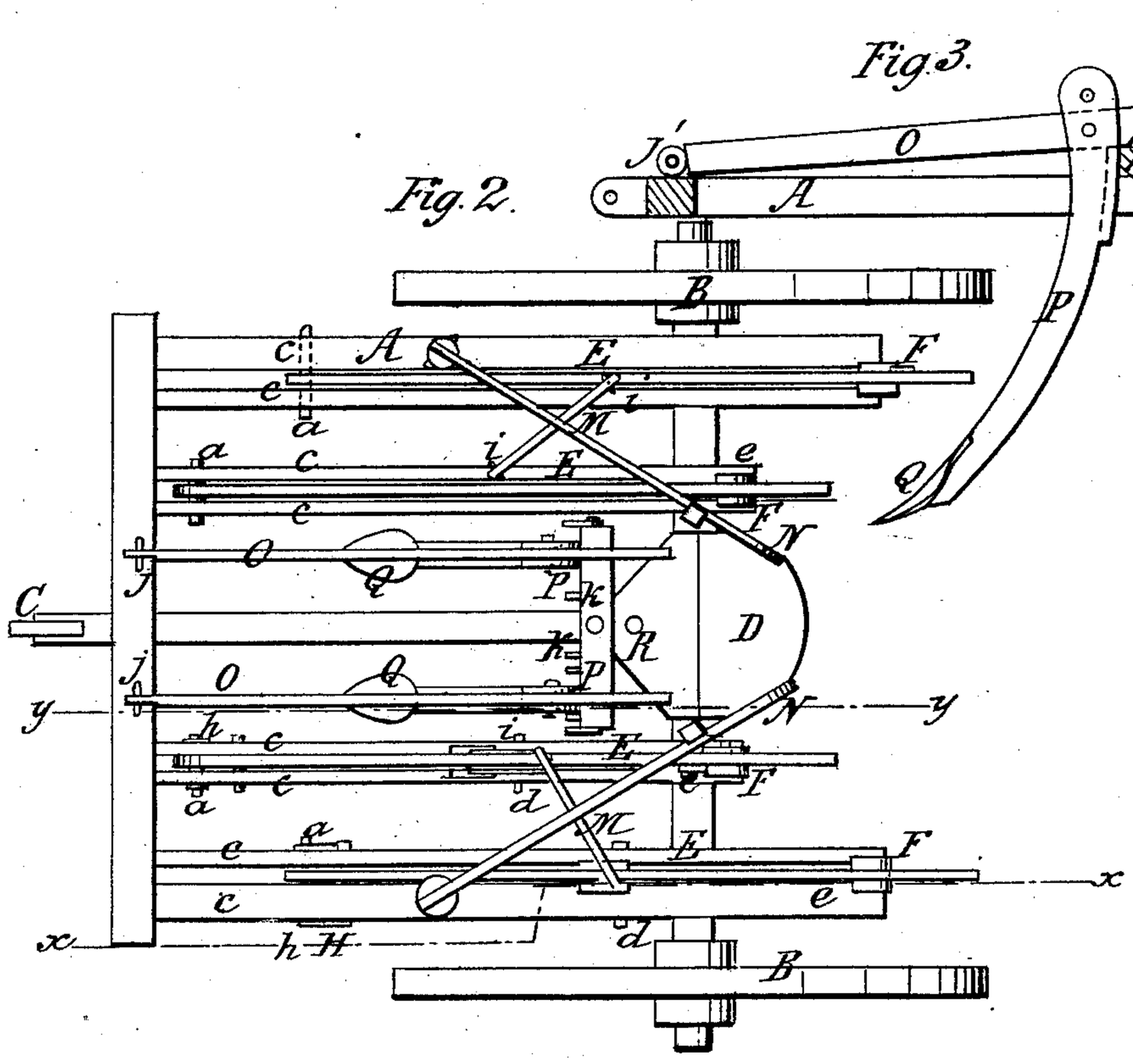


Fig. 2.



UNITED STATES PATENT OFFICE.

B. S. MORGAN, OF DELHI, IOWA.

IMPROVEMENT IN CULTIVATORS.

Specification forming part of Letters Patent No. **21,690,** dated October 5, 1858.

To all whom it may concern:

Be it known that I, B. S. MORGAN, of Delhi, in the county of Delaware and State of Iowa, have invented a new and Improved Cultivator; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is a side sectional view of my invention, taken in the line *x x*, Fig. 2. Fig. 2 is a plan or top view of same. Fig. 3 is a detached side view of one of the central shares, the frame of the machine being bisected, as shown at *y y*, Fig. 2.

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

This invention consists in a peculiar arrangement of levers and share-stocks, as hereinafter fully shown and described, whereby the shares may be raised above obstructions with the greatest facility, also allowed to yield or give to obstructions in case they are brought in contact with them, so that the parts cannot be injured thereby.

To enable those skilled in the art to fully understand and construct my invention, I will proceed to describe it.

A represents a horizontal rectangular frame, which is supported by two wheels, B B. C is the draft-pole, and D is the driver's seat at the back part of the frame A. In the frame A, and at each side, two bars, E E, are pivoted, as shown at *a*, and to the back end of each bar E a curved or segment-shaped bar, F, is attached by a pivot, the latter serving as stocks for shares G, which are attached to their lower ends. In the lower part of each share-stock F a spring, $a^{\times}$, is fitted, said springs being merely forked pieces of steel distended by their own elasticity and fitted in taper-recesses *b* in the stocks, as shown clearly in Fig. 1. The springs *a* are attached to rods H, connected with the frame A, as shown clearly in Fig. 1. The bars E E′ are fitted between longitudinal strips or bars *c c* of the frame A, as shown clearly in Fig. 2, and between said strips or bars and below the bars E E levers I I are placed and secured by fulcrum-pins *d*. To the back ends of the levers I I sockets *e* are attached to receive the bars E, and the front end of the levers, below their fulcrum-pins *d*, have triangular openings *f* made in them, as shown clearly in Fig. 1, and a link, J, is fitted in each opening *f*, the lower ends of the links being connected to a bar, K, the front ends of which are attached by pivots *g* to the frame A, as shown at *h*. To the back ends of the bars K toothed rollers or colters L are attached. The bars K K, at each side of the frame A, are connected by cords *i i* to the ends of a bar, M. These bars M are attached transversely to levers N at each side of the frame. (See Figs. 1 and 2.) O O are two bars, the front ends of which are attached by universal hinges or joints *j* to the front cross-bar of the frame A. To the back end of each bar O a curved or segmental stock, P, is attached, said stocks having each a share, Q, at its lower end. The stocks P are grooved at their back ends, so that they may receive either of a series of projecting guide-plates, *k*, which are attached to a bar, R, in the frame A, just in front of the driver's seat D, as shown in Figs. 2 and 3.

The operation is as follows: As the machine is drawn along, the shares Q Q may be adjusted nearer together or farther apart, as occasion may require, the universal joints *j j* of the bars O O permitting such movement, and the shares are secured in the desired position by fitting the stocks P on the proper guide-plate *k* on the bar R. The shares G of the stocks F are suddenly raised in case obstacles lie in their path by raising the ends of the levers N, and the shares G and colters L L are raised rapidly at the first movement in consequence of the links J bearing against the front upper part of the edge of the openings *f*, the links gradually passing to the front parts of the openings, and the movement becoming gradually slower and the power increasing. The object of this movement is to clear obstacles with certainty, a quick movement at first being essential, as when a share is somewhat raised they will most generally clear themselves or pass over obstructions—such as rounded rocks (bowlders) and the like—without difficulty. In case, however, the shares G catch against obstacles, the stocks F will be only forced out or backward from the rods H, the strength of the springs $a^{\times}$ being overcome. The bars O O being directly in front of the

driver, the shares Q Q can be operated without danger of being obstructed, and therefore it would not be necessary to apply such device to them. The colters L penetrate the ground and ease the work of the shares.

The invention is not only applicable for eradicating weeds and cultivating crops generally, but is also applicable for covering many kinds of seeds, such as small grain.

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

1. The arrangement of the bars E, with share-stocks F attached, the levers I, with links J fitted in the triangular-shaped openings *f* in said levers, and attached to the colter-bars K, which are connected to the levers N, substantially as and for the purpose set forth.

2. In combination with the above, the brace-rods H, attached to the share-stocks F by means of the springs $a^{\times}$, fitted in the recesses *b* in the stocks, and arranged substantially as and for the purpose set forth.

B. S. MORGAN.

Witnesses:

WM. H. GILLES,

LAWRENCE MCNAMEE.