

(No Model.)

M. & A. SATTLEY.  
CULTIVATOR.

No. 560,754.

Patented May 26, 1896.

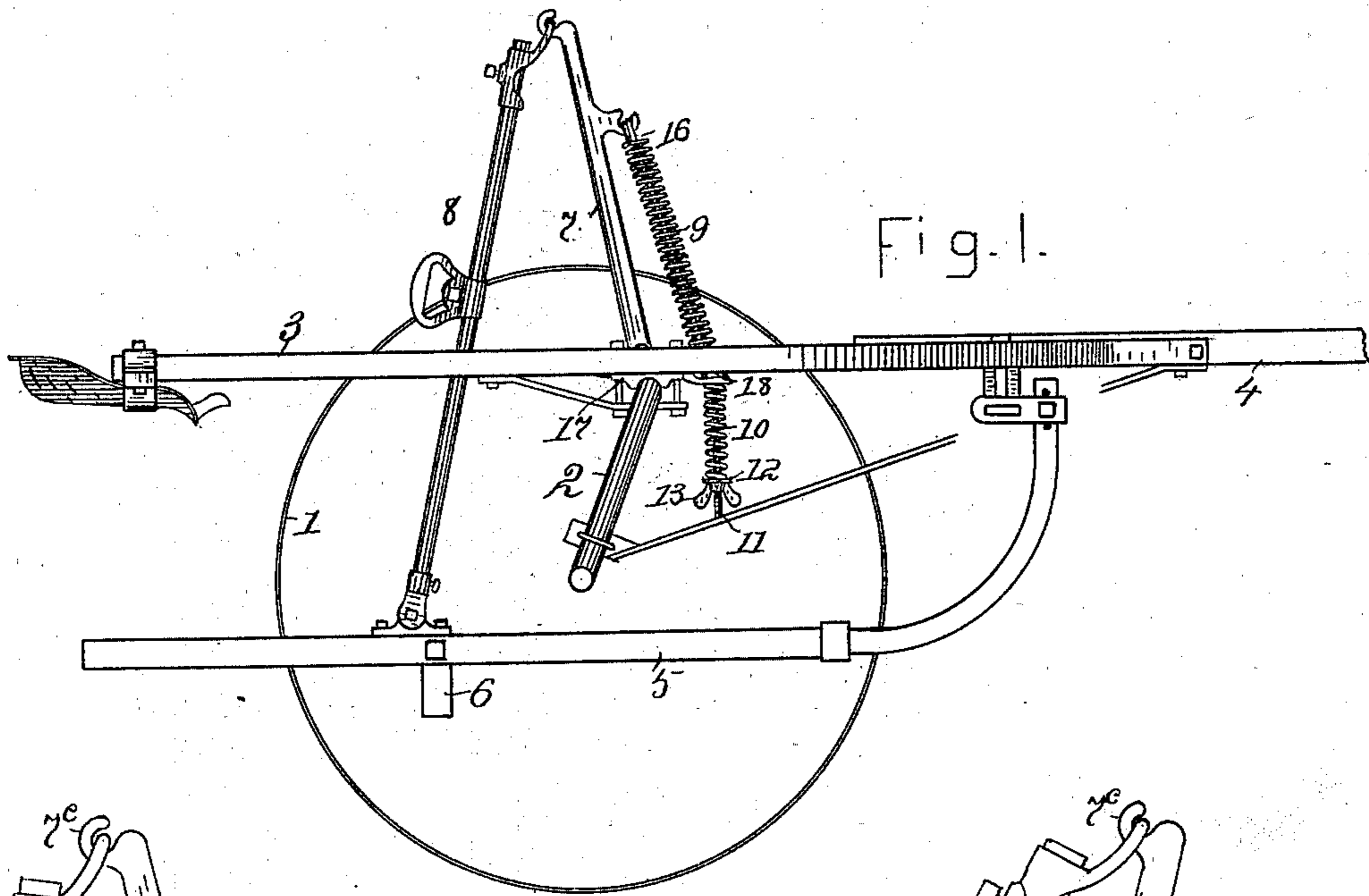


Fig. 1.

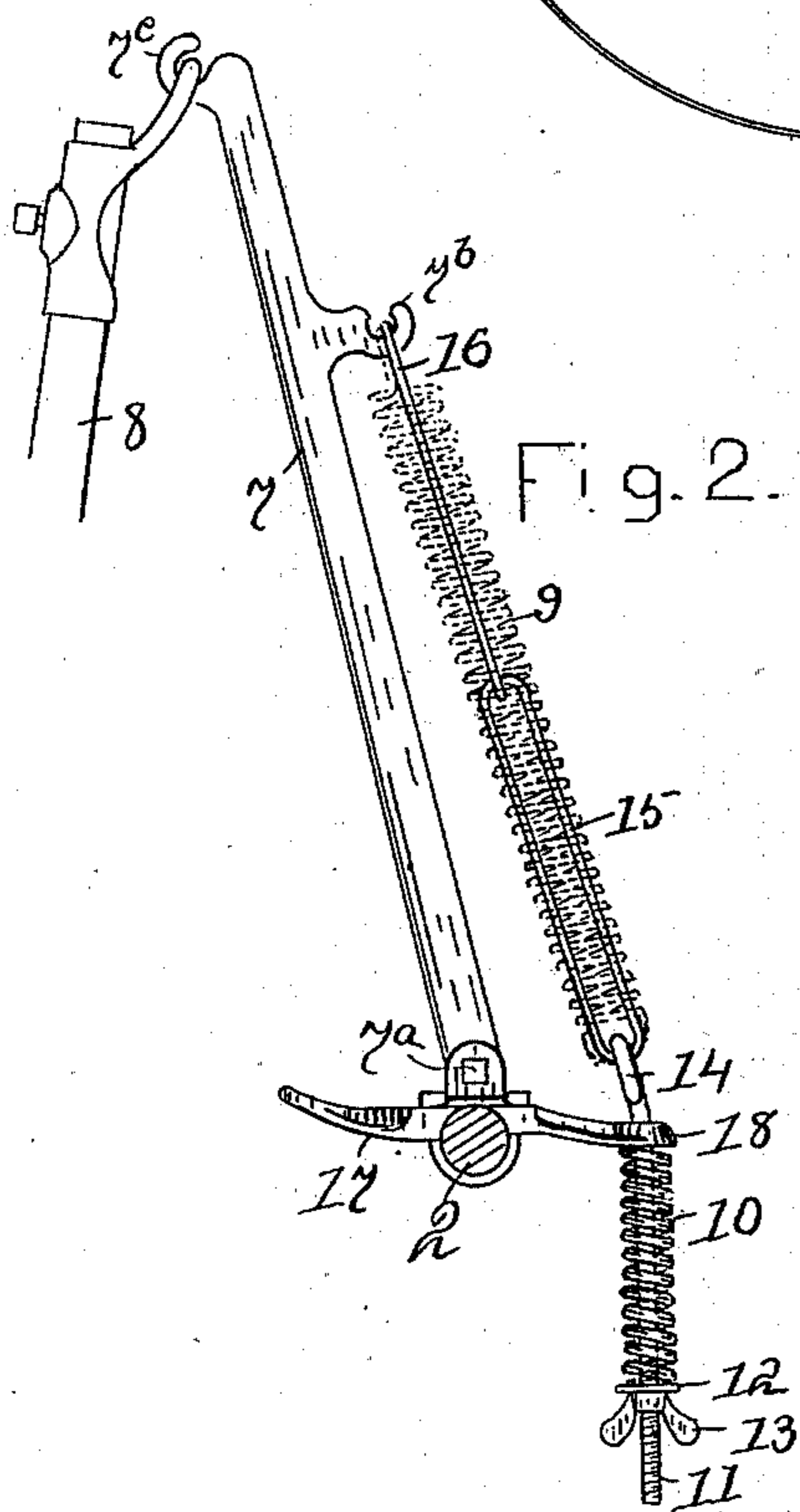


Fig. 2.

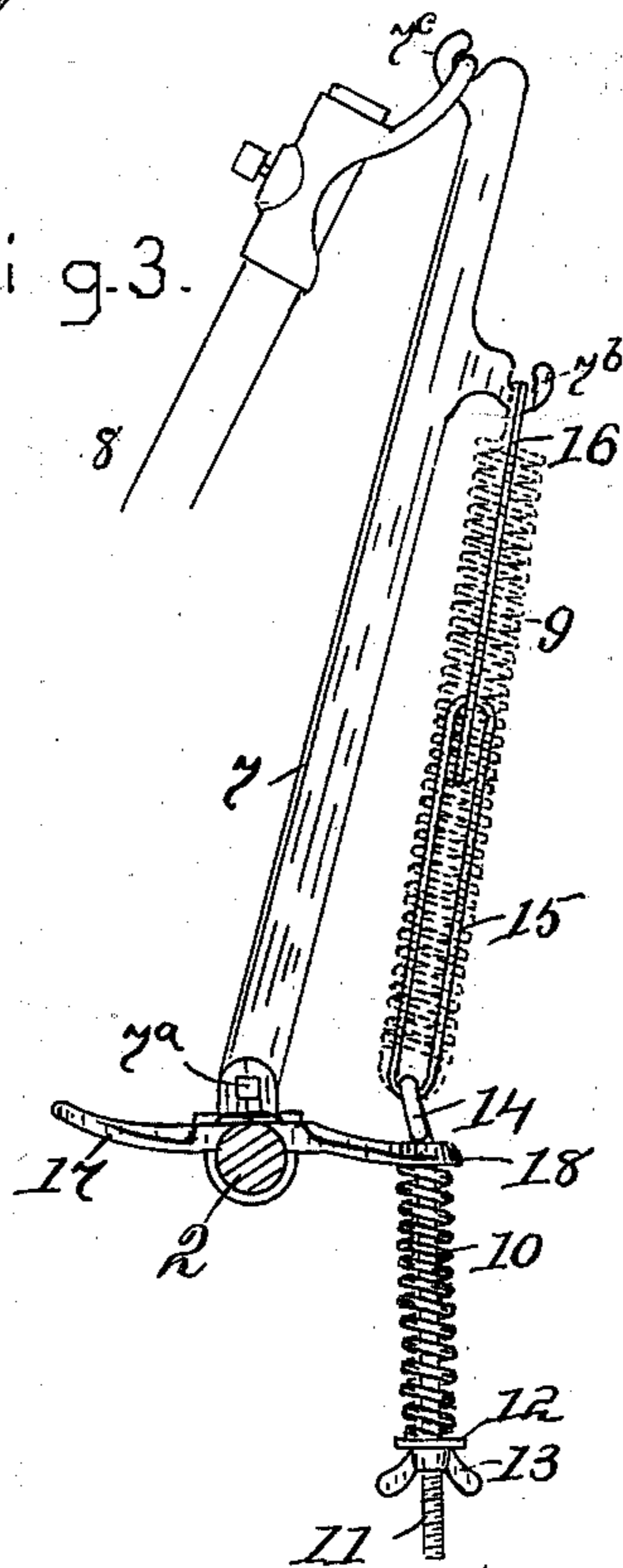


Fig. 3.

ATTEST

Ana. C. Graham  
Nora Graham

INVENTORS  
Marshall Sattley  
Archibald Sattley  
by L. P. Graham  
Atty.

# UNITED STATES PATENT OFFICE.

MARSHALL SATTLEY AND ARCHIBALD SATTLEY, OF SPRINGFIELD, ILLINOIS, ASSIGNORS TO THE SATTLEY MANUFACTURING COMPANY, OF SAME PLACE.

## CULTIVATOR.

SPECIFICATION forming part of Letters Patent No. 560,754, dated May 26, 1896.

Application filed March 23, 1896. Serial No. 584,456. (No model.)

*To all whom it may concern:*

Be it known that we, MARSHALL SATTLEY and ARCHIBALD SATTLEY, of Springfield, in the county of Sangamon and State of Illinois, have invented certain new and useful Improvements in Cultivators, of which the following is a specification.

This invention relates to that class of riding-cultivators in which rock-levers are mounted on the frame and are connected through vertical rods with the cultivator-beams. Its object is, first, to provide an improved arrangement of springs for the purpose of resisting foot-pressure when the cultivator is in operation, and, second, to combine such springs with the beam-lifting springs in a novel and desirable manner. It is exemplified in the structure hereinafter described, and it is defined in the appended claims.

In the drawings forming part of this specification, Figure 1 is a side elevation of essential parts of a cultivator embodying our improvements. Fig. 2 is a side elevation of the springs and parts connecting therewith, the foot-pressure-resisting or cushion springs being shown under pressure. Fig. 3 is a similar view of the parts shown in Fig. 2, the connection between the rock-lever and the cushion-spring being slack or broken.

A cultivator-wheel is shown at 1, an arch-axle at 2, a side bar of the frame at 3, a tongue at 4, a cultivator-beam at 5, and a foot-rest thereon at 6. The parts enumerated are in duplicate, the tongue and axle excepted, and the beams are, in practical operation, equipped with suitable shovels or blades. Brackets 17 are fastened one to each side of the arched part of the axle, and they each have a forward extension 18, in the forward end of which is a vertical hole. Rock-levers 7 are pivoted at their lower ends in lugs 7<sup>a</sup> of the brackets, and they have hooks 7<sup>b</sup> and 7<sup>c</sup> at or near their upper ends. Rods 8 connect with hooks 7<sup>c</sup> of the rock-levers and also connect one with each cultivator-beam. Rods 11 extend one through each bracket. They are threaded on their lower ends and they have eyes 14 on their upper ends. Compression-springs 10 are placed on the downward extensions of rods 11, washers 12 are set against the lower ends thereof, and wing-nuts 13 are screwed up against the washers until the desired degree of tension is

developed in the springs. The eyes 14 of the rods are connected with hooks 7<sup>b</sup> of the rock-levers through long links 15 and 16, which are loosely joined together. Extension-springs 9 (shown in solid lines in Fig. 1 and in broken lines in the other figures) also connect eyes 14 with hooks 7<sup>b</sup>. The springs 9 are weak as compared with springs 10. They are used to aid in lifting the cultivating devices clear of the ground, and the limit of their extension is the combined length of links 15 and 16.

When the rock-levers are thrown forward as far as possible, the beams are raised to an extent to carry the shovels or blades clear of the ground, the links 15 and 16 slide together, as shown in Fig. 3, but to a greater extent, and there is little, if any, tension on spring 9. As the rock-levers are swung backward preparatory to putting the cultivator into operation, the springs 9 are extended until the cultivating-beams reach an operative position, when the slack in the links 15 and 16 will be taken up, further extension of springs 9 will be prevented by such links, and further downward motion of the beam will be resisted by the compression-springs 10.

Such is the embodiment and mode of operation of the invention; but to fully explain the essence of the improvement it must be stated that many of the elements specified are merely typical of the classes they represent. For instance, it is necessary that the upper bearing of the compression-spring shall be fixed with relation to the frame; but it is not essential that it be formed in the particular bracket shown. It is essential that the connection between the rock-lever and the rod of the compression-spring shall be operative when the beams are in cultivating positions and be slack or broken at other times. In other words, it is essential that the connection shall be of the make-and-break character; but it is obvious that such connection may easily be made by means other than the links described. It is desirable that the extension-spring shall encompass the links connecting the rock-lever with the rod of the compression-spring; but it is only essential to the mode of operation that the extension-spring shall act during the rise and fall of the beam and be held against further extension while the compression-spring is under tension. In-

deed this requirement is not essential when the cushion-spring is separately considered, as it may perform its function in entirely different environments.

5 An advantage of the location of the compression-spring is that it occupies particularly-available space, and an advantage of such spring without reference to location is the facility with which its tension may be ad-  
10 justed.

Having thus described our invention, we claim as new and desire to secure by Letters Patent—

1. In a riding-cultivator, the combination  
15 of a rock-lever pivoted on the frame and connected from the rear with a cultivator-beam, a compression-spring below a fixed bearing in front of the pivot of the rock-lever, and a  
20 spring and the rock-lever, whereby the spring is put under tension when the beam is in operative position.

2. In a riding-cultivator, the combination  
25 of a rock-lever pivoted on the frame and connected from the rear with a cultivator-beam, a rod extending downward through a fixed bearing in front of the pivot of the rock-lever, an adjustable bearing on the lower end of the rod, a compression-spring between the fixed

bearing in the frame and the adjustable bear- 30  
ing on the rod, and a make-and-break connection between the upper end of the rod and the rock-lever.

3. In a cultivator, the combination of a  
rock-lever pivoted on the frame and connect- 35  
ed from the rear with a cultivator-beam, a compression-spring below a fixed bearing in front of the pivot of the rock-lever, inter-  
slidable links connecting the compression-  
spring with the rock-lever, and an extension- 40  
spring making the same connection and encompassing the links.

4. A cultivator of the class described, hav-  
ing a compression cushion-spring and an ex-  
tension lift-spring both acting on a beam- 45  
lifting rock-lever, conjuncture of the cushion-spring with the rock-lever being made by a  
make-and-break connection, and the lift-  
spring being conjoined with such make-and-  
break connection, and having its extension 50  
limited thereby.

In testimony whereof we sign our names in the presence of two subscribing witnesses.

MARSHALL SATTLEY.  
ARCHIBALD SATTLEY.

Attest:

J. H. MATHENY,  
M. A. CHRISTY.