

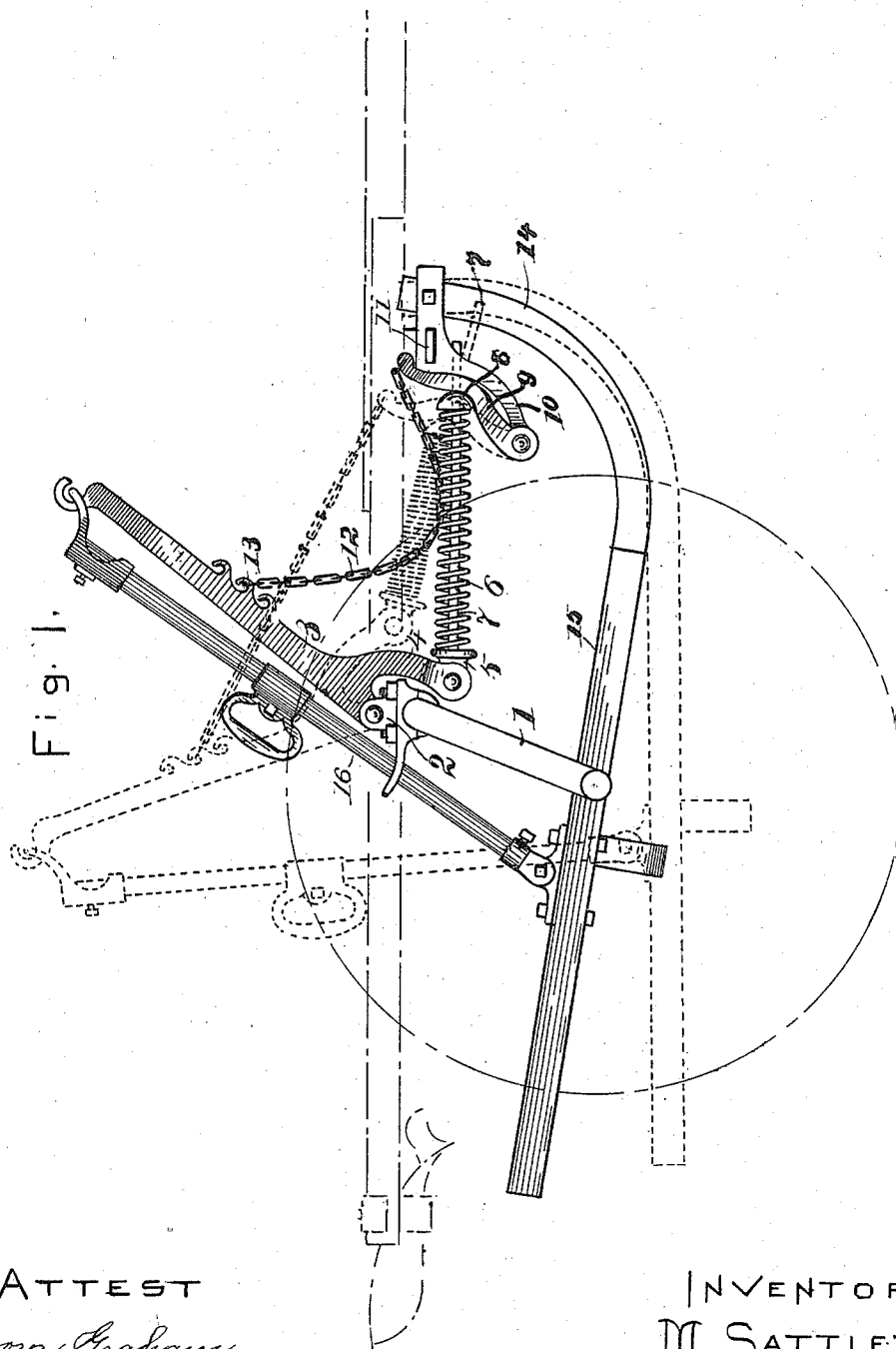
(No Model.)

2 Sheets—Sheet 1.

M. SATTLEY.
CULTIVATOR.

No. 579,182.

Patented Mar. 23, 1897.



ATTEST
Nora Graham
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INVENTOR
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by *L. P. Graham*
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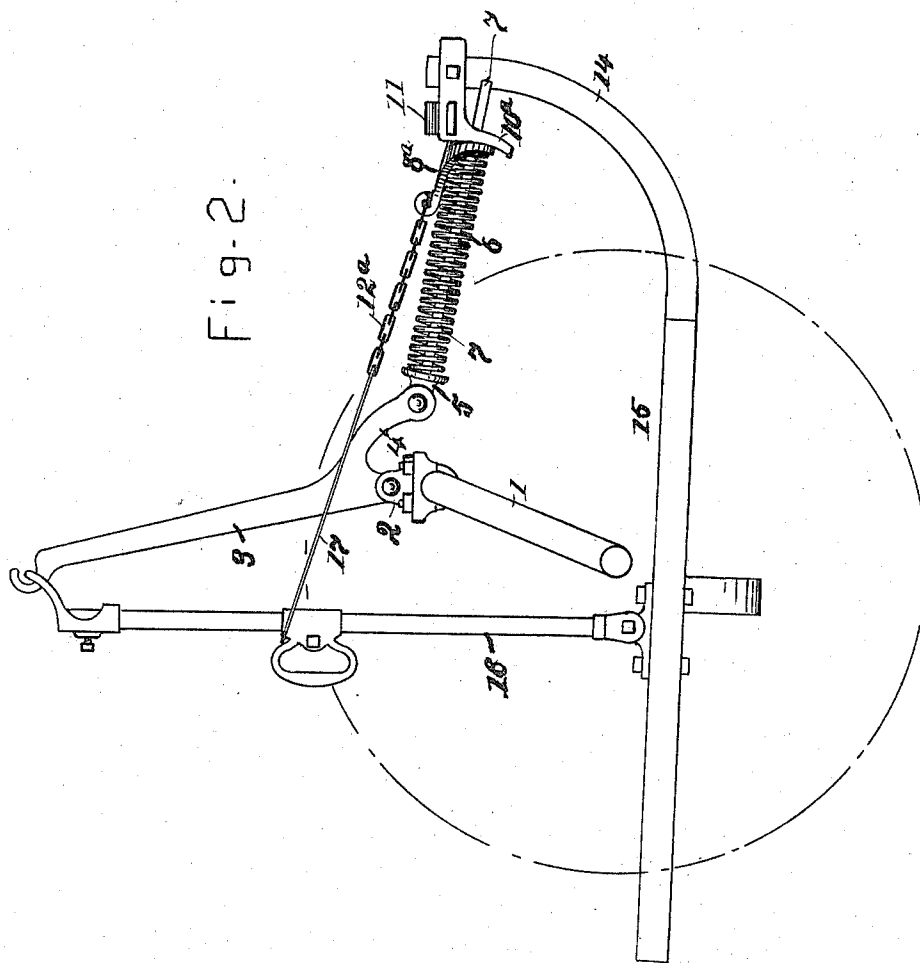
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UNITED STATES PATENT OFFICE.

MARSHALL SATTLEY, OF SPRINGFIELD, ILLINOIS, ASSIGNOR TO THE
SATTLEY MANUFACTURING COMPANY, OF SAME PLACE.

CULTIVATOR.

SPECIFICATION forming part of Letters Patent No. 579,182, dated March 23, 1897.

Application filed June 26, 1896. Serial No. 597,068. (No model.)

To all whom it may concern:

Be it known that I, MARSHALL 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 the beams are supported at their rear ends by rods connected with rock-levers extended upward from the frame and in which springs are employed to assist in controlling depth of penetration of the cultivating-shovels and in raising the beams preparatory to turning or the like. The nature of these operations is such that the controlling of the depth of cultivation requires rather strong resistance to foot-pressure acting through a rather small part of the swing of the rock-levers, while aid in raising the beams requires weaker resistance throughout all, or nearly all, the backward swing of the levers. It is the present common practice to supply each rock-lever with two springs, a cushion-spring and a lift-spring, but in this instance provision is made whereby a single spring may be made to perform the functions of the two springs previously used.

In the drawings forming part of this specification, Figure 1 is a side elevation of so much of a cultivator as is needed to explain my invention, the extreme forward position of a rock-lever and adjuncts being shown in solid lines and somewhat near the extreme rearward position of such parts being shown in broken lines. Fig. 2 is a side elevation of the beam lifting and lowering mechanism in a modified form and in an intermediate position.

The arched axle is shown at 1, a bracket mounted thereon at 2. A rock-lever is shown at 3, and such lever is fulcrumed on bracket 2 and provided with a downward-extended arm 4. A rod 7 is pivotally connected with the lower end of arm 4, and it extends forward through a slot in a casting, as 10, which is fastened, in this particular instance, to a cross-bar 11 of the cultivator-frame. A head 5 is formed on the rod near the arm 4. Slidable follower 8 is mounted on the opposite end of the rod, and a compression-spring 6 is placed on the rod between the head and the

follower. The cultivator-beam, which is supplied with cultivating devices, (not shown,) is designated by 15, and it has an upwardly-curved forward extension 14, that connects pivotally with the cultivator-frame. A rod 16 connects the beam with the rock-lever in the customary manner.

In the embodiment of the idea of the invention shown in Fig. 1 a slotted arm 9 is pivotally connected at its lower end with a rearward and downward extension of bracket 10. Its rear surface bears against the follower 8, and its upper end is connected with a hook 13 on rock-lever 3 by means of a chain 12. In the embodiment of the invention shown in Fig. 2 the follower 8^a bears normally against bracket 10^a, a chain 12^a connects directly with the follower, and a loop or link 17 connects the chain with the pendulous beam-rod 16.

When the rock-lever is thrown forward, as shown in solid lines in Fig. 1, the lower end of arm 4 is in its farthest position from fixed bearing 10, pressure on the spring is relaxed, and the chain is slack. As the arm is swung backward in act of lowering the beam the lower end of the arm at first moves nearly directly toward the fixed bearing 10 and gradually deflects as the spring becomes more and more compressed until when the beam is lowered to an operative position there is no further tendency to compress the spring by a push movement. At this juncture, however, the chain has become taut and further downward motion of the beam pulls the follower backward on the rod and further compresses the already compressed spring.

The spring bears against the arm 4 not very far distant from the fulcrum of the lever, and as its initial resistance to pressure is not so very great it perfectly performs the function of a lift-spring while moving from the position shown in Fig. 2 to that shown in solid lines in Fig. 1. The chain may be connected with the rock-lever at a greater distance from the fulcrum, or it may be connected with the backward-swinging rod in order to increase the resistance of the spring to extreme depression of the beam, but the spring is ordinarily converted into a sufficiently effective cushion-spring by the preparatory backward swing of the rock-lever and rod without any further provision for intensifying its action.

The peculiar relation of parts provides for equalizing action of the spring in performing both its functions. As the lever swings backward to bring the beam into operation the spring-compressing movement of the arm becomes more and more indirect as the compression proceeds until a dead-center or alignment of bearings is reached, and when the cultivating devices are in the ground their normal depth the bearing of the arm of the lever will have slightly passed the dead-center and will swing backward to relieve the spring in case extraordinary depression of the beam is needed.

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

1. In a cultivator, of the class described, and in combination with the beam, the rock-lever and the lift-rod thereof, an arm of the lever extending below the fulcrum of the lever, and a compression-spring between the arm and a fixed bearing in front of the arm, substantially as set forth.

2. In a cultivator of the class described, an arm on the rock-lever extending below the fulcrum of the lever when the beam is raised and rising to the level of the fulcrum

when the beam is depressed, a fixed bearing in the frame in front of the arm, and a compression-spring between the end of the arm and the fixed bearing, substantially as set forth.

3. In a cultivator of the class described, an arm on the rock-lever extending beyond the fulcrum thereof, a fixed bearing in front of the arm, a compression-spring between the end of the arm and the fixed bearing, a follower between the spring and the fixed bearing, and a connection between the follower and the rock-lever or the lift-rod thereof.

4. In a cultivator of the class described, a compression-spring, an arm on the rock-lever having a push bearing against one end of the spring, a follower having a pull bearing against the opposite end of the spring and a connection between the follower and the rock-lever or its lift-rod.

In testimony whereof I sign my name in the presence of two subscribing witnesses.

MARSHALL SATTLEY.

Attest:

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