

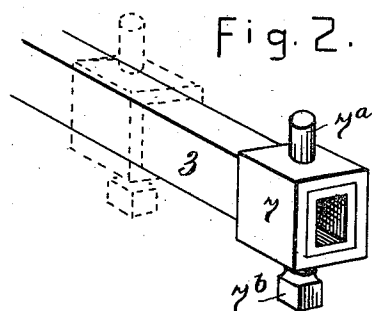
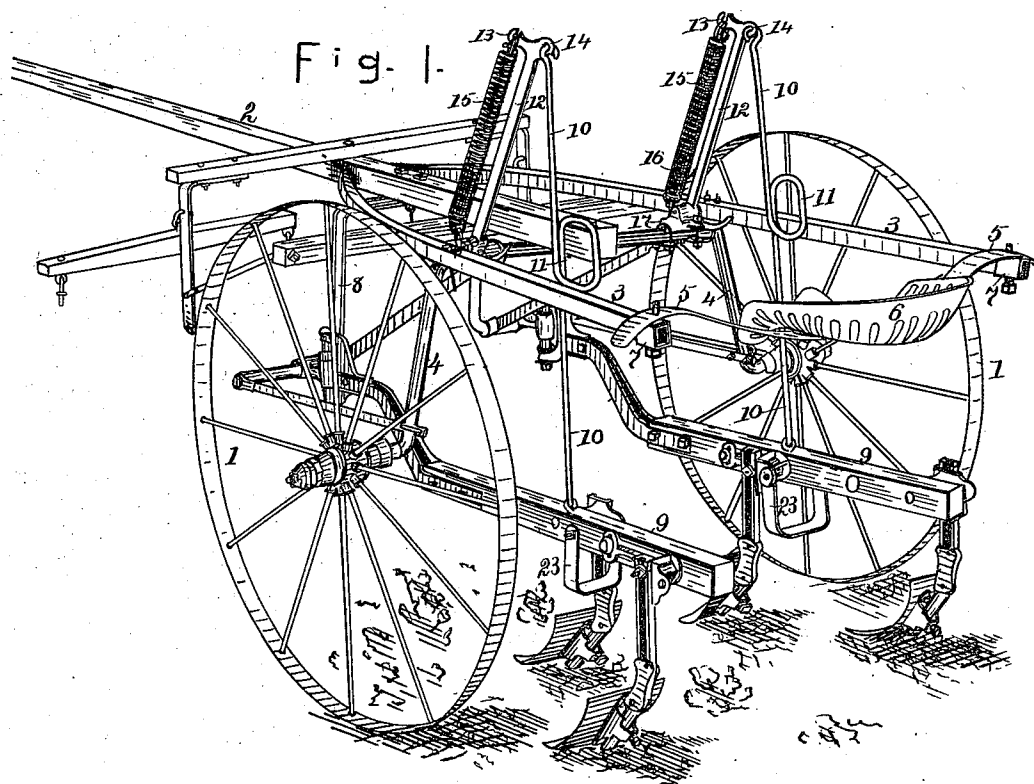
(No Model.)

M. & A. SATTLEY.
CULTIVATOR.

2 Sheets—Sheet 1.

No. 538,747.

Patented May 7, 1895.



ATTEST
Edwin Graham
William Graham

INVENTORS.
MARSHALL SATTLEY,
and ARCHIBALD SATTLEY
by their attorney
L. P. Graham.

(No Model.)

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Fig. 3.

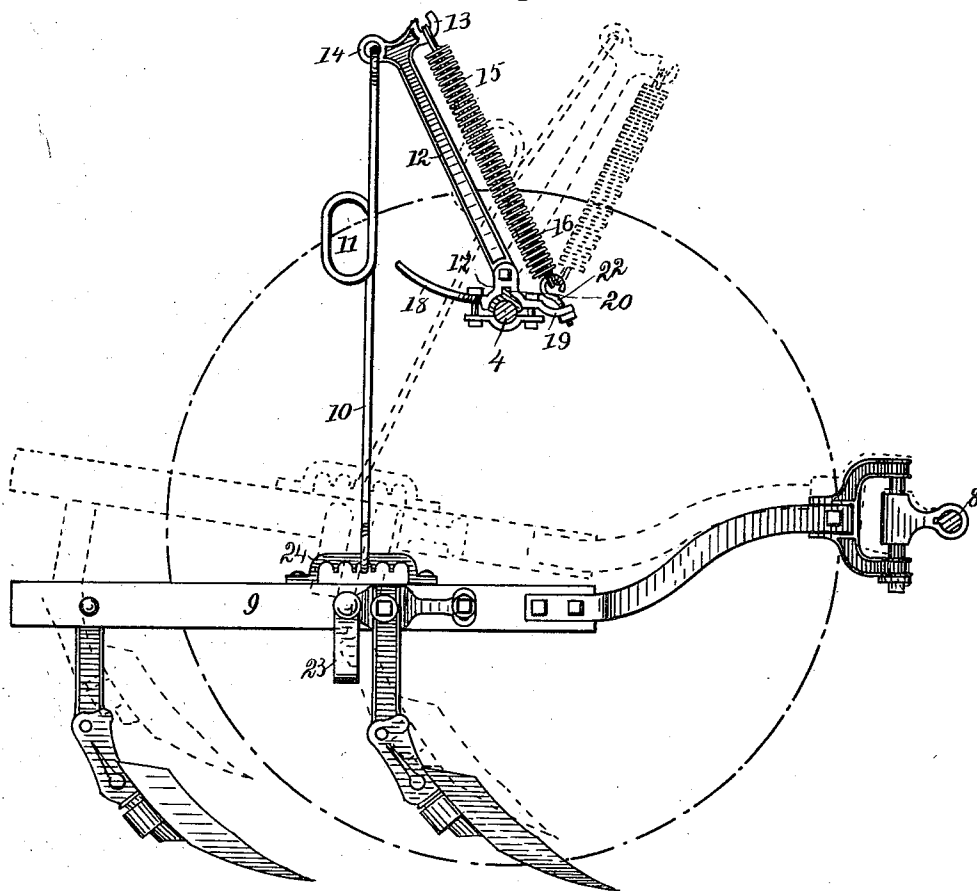
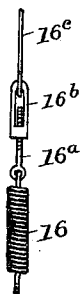


Fig. 4.

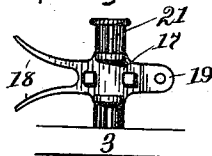


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Helen Graham

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Fig. 5.



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by their attorney
L. P. Graham

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. 538,747, dated May 7, 1895.

Application filed October 18, 1894. Serial No. 526,249. (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 cultivators known as "sulky," or riding, cultivators. It is exemplified in the structure hereinafter specified, and it is defined in the appended claims.

In the drawings forming part of this specification, Figure 1 is a perspective representation of a cultivator embodying the invention. Fig. 2 is a perspective view of the means employed to change the location of the seat. Fig. 3 is an elevation illustrating the mechanism used to raise, lower, and control the cultivator-beams. Fig. 4 is a detail representation of the spring and adjuncts used to act against the foot-pressure of the operator. Fig. 5 is a plan of the bracket with which one of the beam-lifting rock-levers is connected.

The wheels of the cultivator are shown at 1, the tongue at 2 and the seat-supporting bars, or hounds, at 3. The hounds are preferably made of tubing square, or oblong, in cross section, and they are supported by the arched axle 4. The seat 6 is carried on a strap of spring metal, 5, which is preferably of the form indicated in Fig. 1 of the drawings, and such strap is supported on the rear extensions of the hounds.

In order to enable the driver to easily get on and off the seat, and to permit the adjustment of the seat lengthwise of the hounds, collars 7 are fitted to slide on the hounds, are provided on their upper surfaces with the upwardly projecting pins 7^a, and are also provided with set-screws, as 7^b, by means of which the collars may be held at any desired position on the hounds. The ends of the seat strap have holes that receive pins 7^a, and either end may be lifted off its pin and swung to one side to permit the passage of the driver.

An arched rod 8 is secured to the tongue and hounds, near the front ends of the hounds, and is suitably braced from axle 4. The cultivator beams 9 are secured to horizontal ter-

minations of rod 8 by means of sleeves that embrace the rod, and brackets connected with the sleeves by vertical pivots; the result being that the beams may swing freely in any direction but may not turn on their longitudinal axes. Rods 10 connect with the beams, preferably through racks, as 24 in Fig. 3, which give different points of connection, and they are bent to form the loops 11, which provide hand-holds for the operator, and neutralize the jar incident to throwing the parts into position to hold the beams raised from the ground. Brackets 17 are secured on the upper part of the arched axle adjacent to the hounds. They are grooved, as shown at 20 in Fig. 3, to move lengthwise of the spline 21, shown in Fig. 5, which spline is formed on a fixed saddle that rests on the axle, and they are secured in position on the axle by means of bolts and clips, or in any other desirable manner. Each bracket has a rearward fork 18, the fingers of which diverge, and a forward extension 19 which provides a point of connection for the hook-bolt 22.

Rock-levers 12 are pivoted at their lower ends between lugs of the brackets, and each has at its upper end a forward extended hook 13 and a rearward extended eye 14. The rods 10 connect with the eyes of the rock-levers, and the compound springs, 15 and 16 connect with the hooks of the levers and with the hook-bolts of the brackets. The spring 15 is an ordinary coiled expansion spring having nearly, or quite, sufficient elastic tension to counterbalance the weight of the cultivator beam when the same is in operation, and more than enough to sustain it when it is raised, and when the leverage is shifted in favor of the spring. The spring 16 is a comparatively stiff spring, much shorter than spring 15. It is connected at one end with hook-bolt 22 and at the other end with threaded rod 16^a. The threaded rod acts in turn-buckle 16^b, and link 16^c connects the turn-buckle with the hook of the rock-lever. As a matter of convenience, and to improve and simplify the appearance of the device, the spring 16 is placed inside of spring 15, and its function is to act against the foot pressure of the operator, on stirrups 23, and facilitate the

governing of the depth of cultivation. To properly effect this result the turn-buckle is adjusted until the spring (16) and its different adjuncts are long enough to permit the beam to assume, or nearly assume, its operative, cultivating position before tension is exerted on the spring; and then when unusual pressure is temporarily applied by the foot of the operator on the stirrup of the beam, either inadvertently or to follow a depression, the stiff, strong spring will act promptly to return the beam to its normal position as soon as the pressure is relaxed. If the said spring is put under slight tension just before the beam is depressed to its normal position, and uniform pressure on the stirrup is used to neutralize such tension the beam may be raised slightly to meet an occasional requirement by simply reducing the pressure on the stirrup.

In operation the beams are connected with rod 8 the desired distance apart, and the brackets are adjusted lengthwise of the axle to correspond with such connections. One end of the seat strap is lifted from the pin of the collar and swung rearward to admit the operator, who replaces the strap and seats himself with his feet in the stirrups. The rods 10, which up to this time have been occupying the position indicated by broken lines in Fig. 3, are grasped by the loops 11 and the levers are rocked, against the tension of springs 15, until the beams are in operative positions and the connections of springs 16 are stretched, as before explained. The cultivating then proceeds as specified until an end of the field is reached when the foot pressure on the stirrups is removed. The rods are given a preliminary lift by grasping the loops 11 and the springs 15 carry the levers over their pivots, raising the beams and the cultivating shovels thereon to the positions originally occupied. As the levers swing over their pivots the rods pass between the fingers of the forks and are guided thereby to their resting places in the crotches, where they hold the beams against horizontal swing. The levers swing over with some force, causing the rods to strike the brackets sharply, and the spring, or cushion, formed by loops 11 enable the rods to stand the jar without becoming permanently bent. The loops also make the rods somewhat elastic, longitudinally, and increase the facility with which the beams may be controlled.

To suit different drivers it is necessary to have the seat adjustable with relation to the stirrups, and this is effected in a simple and practical manner by means of the sliding collars with their pins for the seat strap and the securing set-screws.

The springs 15 and 16, while connected in construction, are entirely distinct in operation and perform their respective functions at different times. The spring 15 acts only to raise the beams, or assist therein, and to hold them

raised, and for this purpose a comparatively weak spring capable of considerable expansion is desirable. On the other hand the springs 16 have nothing to do with raising the beams, are not under tension while the raising is performed, and their function requires that they be quick-acting and strong. The different springs would operate one beside the other instead of one in the other, but, for the reasons heretofore given, the latter arrangement is very much preferred.

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

1. In a cultivator of the class described, and in combination with the essential elements thereof, springs tending to lift the cultivating shovels clear of the ground, and other springs adapted to act against foot pressure when the shovels are in operative positions, substantially as set forth.

2. In a cultivator of the class described, the combination of cultivator beams, rock-levers pivoted above the beams, links connecting the swinging ends of the rock-levers with the beams, springs tending to lift the beams and shovels thereof clear of the ground, such springs being connected with the levers, and other springs also connected with the levers and adapted to act against foot pressure when the shovels are in operative positions, substantially as set forth.

3. In a cultivator of the class described, the combination of a frame, one element of which is an arched axle, brackets mounted on the arched part of the axle, rock levers pivoted at their lower ends in the bracket in a manner to permit their upper ends to swing back and forth over the pivots, links connecting with the beams of the cultivator and with the upper ends of the levers, and springs also connecting with the upper ends of the levers and with forward extensions of the brackets, whereby the upper ends of the levers, of the links and of the springs may all be swung over the pivots of the levers and hold the beams raised by bringing the points of support into substantial alignment.

4. In cultivators, the combination of the beams, the rock-levers, and the links looped between their ends to form hand-holds and increase the elasticity of the links, substantially as set forth.

5. A compound spring for riding cultivators, the same comprising the outer spring 15, the inner spring 16, the threaded rod 16^a, the turn-buckle 16^b, and the link 16^c, substantially as set forth.

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

MARSHALL SATTLEY.
ARCHIBALD SATTLEY.

Attest:

J. H. MATHENY,
MARY A. CHRISTY.