

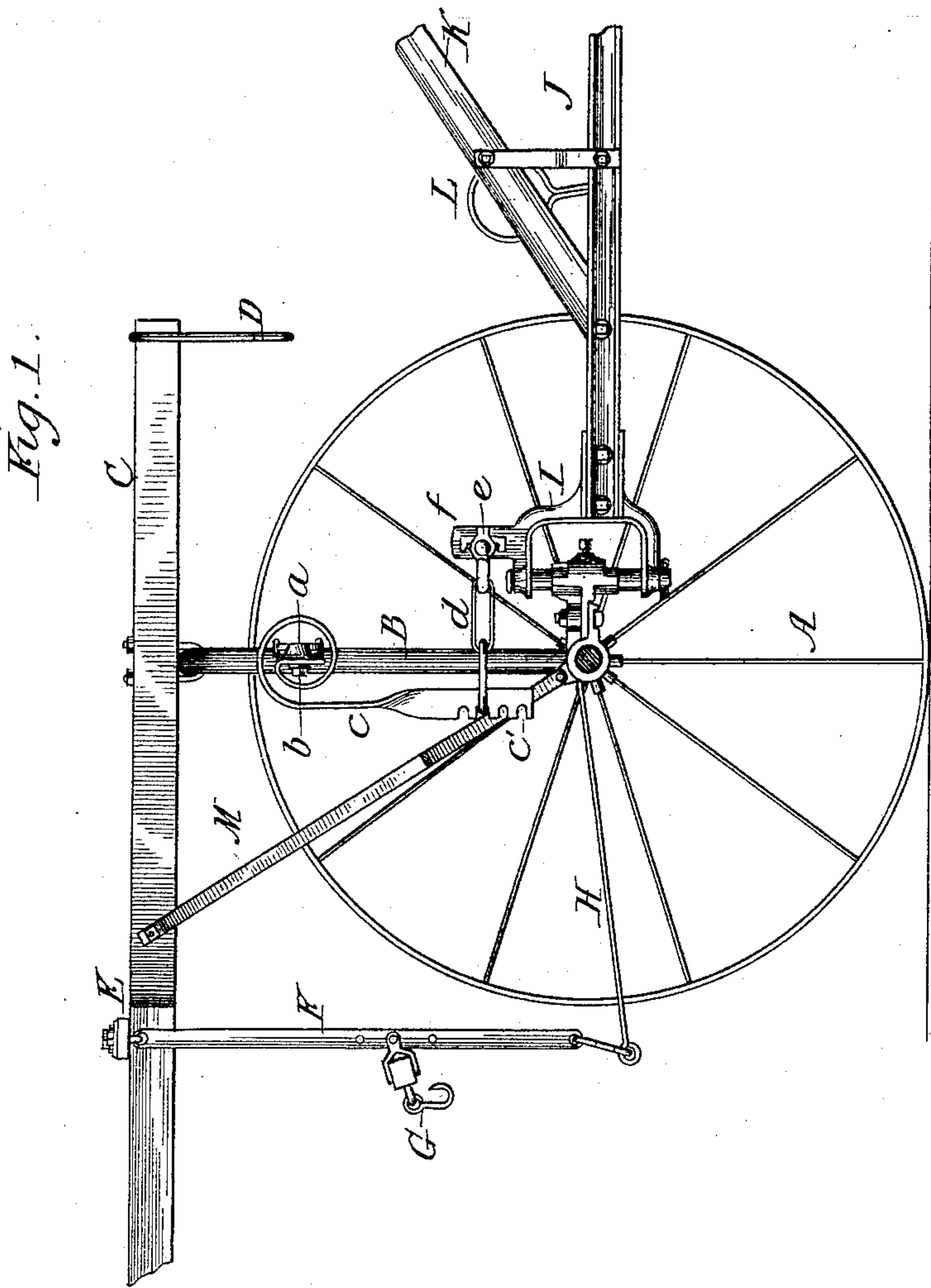
(No Model.)

2 Sheets—Sheet 1.

M. SATTLEY.
CULTIVATOR.

No. 348,695.

Patented Sept. 7, 1886.



Witnesses:

Albert H. Adams.
Harry F. Jones. -

Inventor:

Marshall Sattley

By West Bond

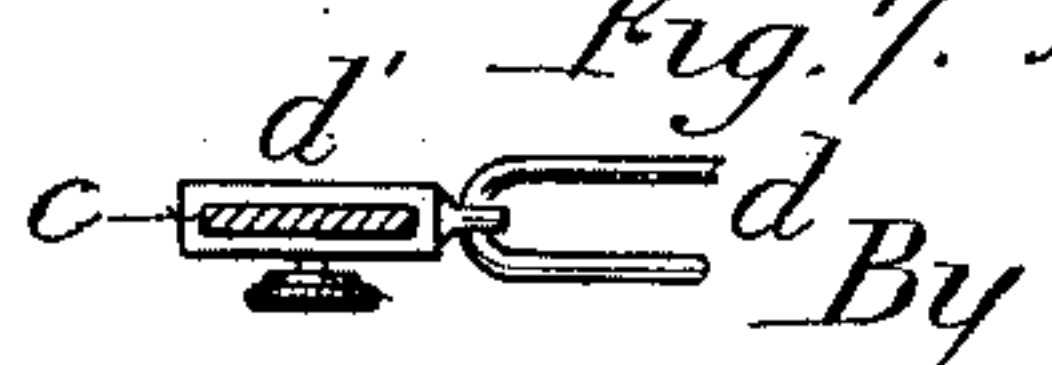
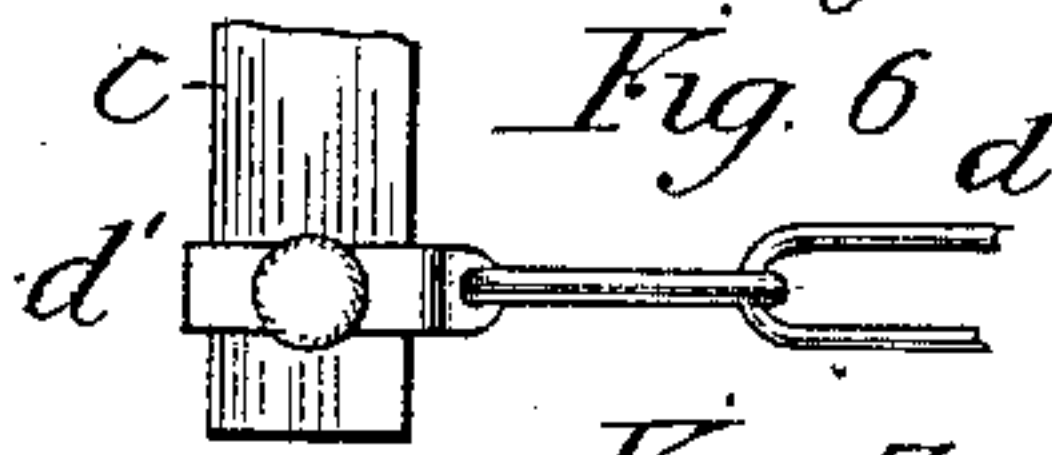
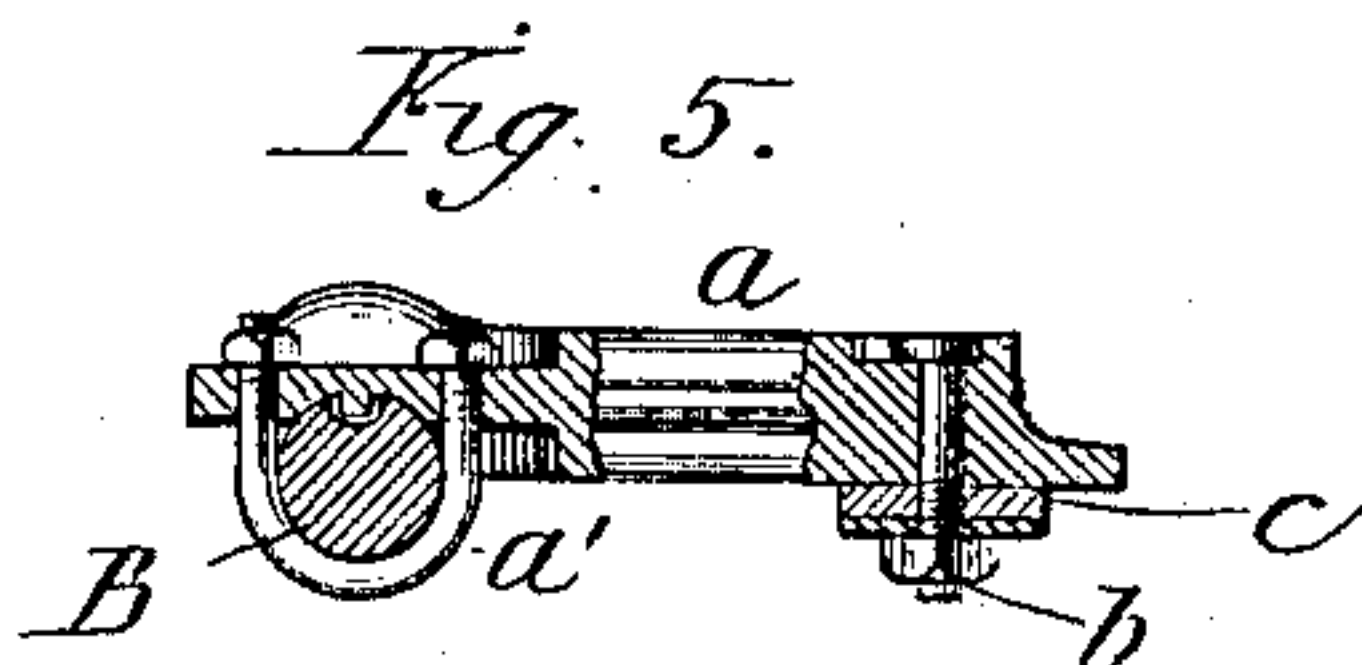
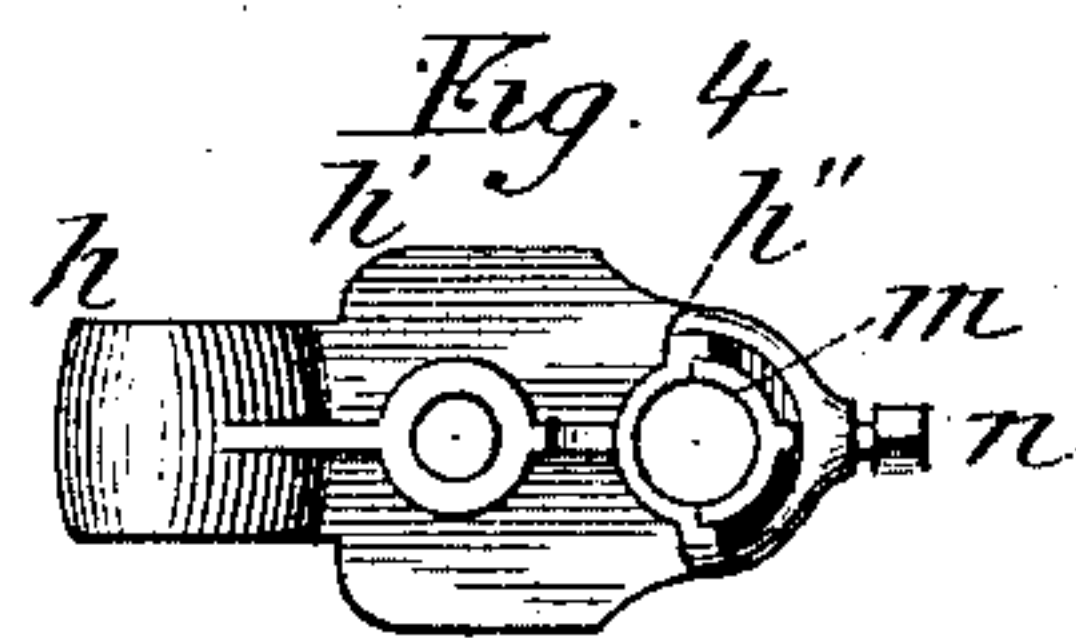
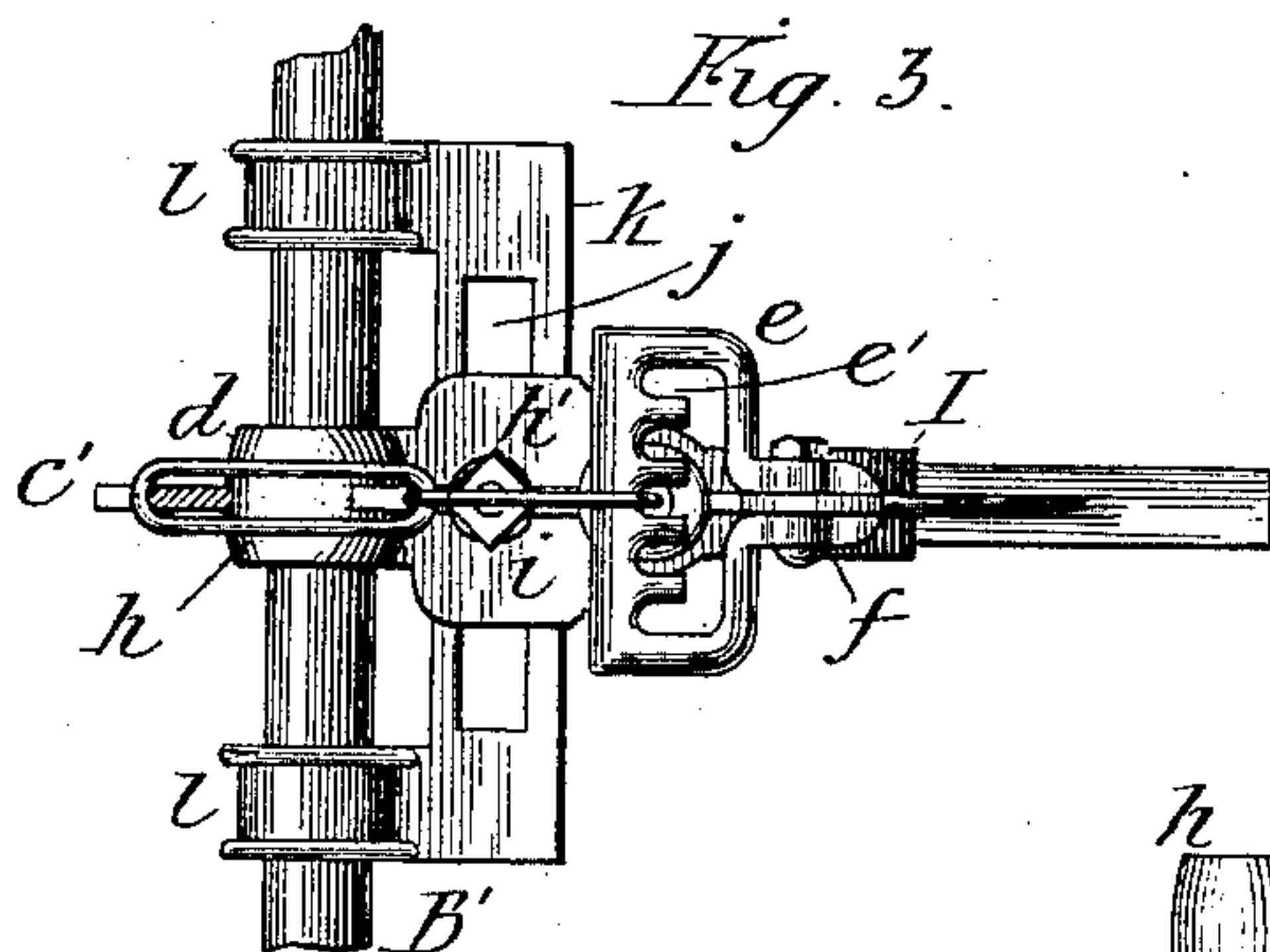
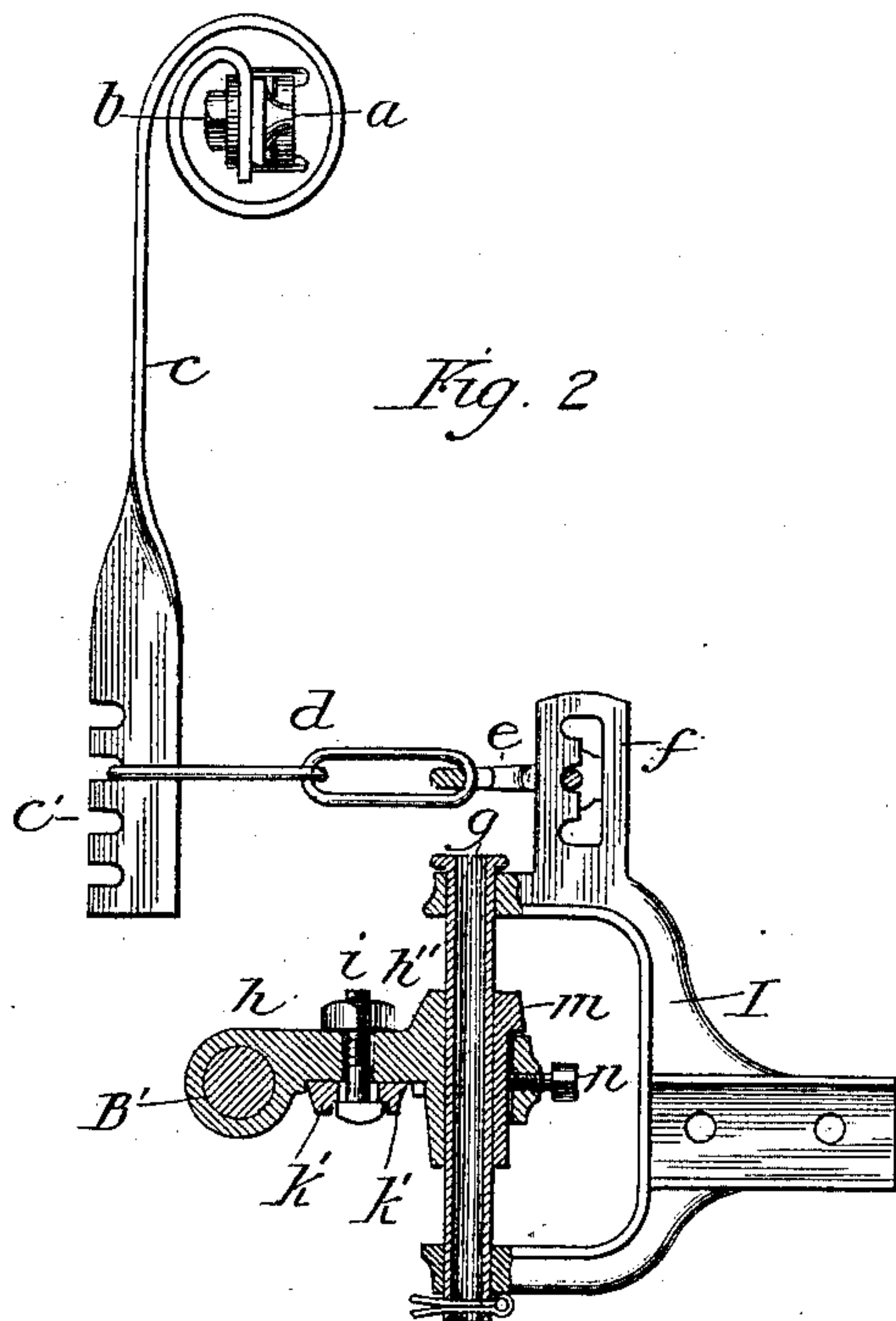
Attorneys

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Attorneys

UNITED STATES PATENT OFFICE.

MARSHALL SATTLEY, OF TAYLORVILLE, ILLINOIS, ASSIGNOR OF TWO-THIRDS TO HIMSELF AND ONE-THIRD TO ARCHIBALD SATTLEY, OF SAME PLACE.

CULTIVATOR.

SPECIFICATION forming part of Letters Patent No. 348,695, dated September 7, 1886.

Application filed February 12, 1886. Serial No. 191,705. (No model.)

To all whom it may concern:

Be it known that I, MARSHALL SATTLEY, residing at Taylorville, in the county of Christian and State of Illinois, and a citizen of the United States, have invented certain new and useful Improvements in Cultivators, of which the following is a full description, reference being had to the accompanying drawings, in which—

Figure 1 is a side elevation of a cultivator with one wheel removed and some of the parts broken off; Fig. 2, a side elevation of the spring and coupling with the coupling partly in section; Fig. 3, a plan view of the coupling; Fig. 4, a plan view of the movable bar or plate of the coupling; Fig. 5, a plan view, partly in section, of the device for attaching the spring to the cultivator-arch; Figs. 6 and 7, modifications of the device for adjusting or partly adjusting the action of the spring.

The object of this invention is to improve the construction and operation of cultivator-couplings and their connection with balancing-springs; and its nature consists in the several parts and combinations hereinafter described, and claimed as new.

In the drawings, A indicates the wheels; B, the elevated portion or arch of the axle; B', the horizontal portion; C, the frame; D, hooks for hanging the plow-beams; E, the double-tree; F, depending bars, loosely connected with the double-tree; G, whiffletree-hooks; H, draw rods or bars; I, beam portion of the coupling; J, beam; K, handle; L, hang-up eye or hook; M, brace; *a*, arm for attaching the spring to the cultivator-arch; *b*, pivot-bolt for attaching the spring to the arm; *c*, spring; *c'*, adjusting-notches; *d*, connecting links or chains; *d'*, modification of front link; *e*, adjusting clevis or hook; *f*, an upward-notched projection on the coupling I; *g*, bolt; *h h' h''*, draft-section of the coupling; *i*, adjusting-bolt; *j*, slot; *k*, supporting-plate for the draft-section of the coupling; *l*, eyes on draft-plate *k*, for attaching it to the horizontal portion or portions of the axle; *m*, half-box; *n*, nut for locking the draft-plate *h* to the bolt *g*.

The wheels A, the arched axle, the frame C, the plow or shovel beams and handles, the hang-up devices, and the draft devices may be made in the usual or in any convenient man-

ner, and the frame C may be a frame of four bars, a frame formed by the ordinary split tongue, or it may be a straight tongue continued over the axle, as may be found most convenient, the form shown being that of a straight tongue with the hounds projecting back to receive the hooks D. The short arm *a*, for attaching the spring to the cultivator-arch, is made in the form shown in Fig. 5, and it is attached to the axle by a clip or U-formed bolt, *a'*, as shown, and it may be provided with a short stud or projection to fit into a corresponding hole or depression in the arch. To the outer end of the arm the spring *c* is attached by the single bolt *b*, which may be provided with an ordinary washer, as shown, and the coil of the spring is such that a single bolt is sufficient to hold it for its action in lifting or balancing the beam, and being attached by a single bolt the lower end has a side swing, so that whenever the coupling is moved along the length of the horizontal portion of the axle the spring will take a corresponding side sway and find its own position without impairing its spring action. The spring is coiled or bent in the form shown in Fig. 2, and its lower end is twisted around and provided with adjusting-notches *c'*, into which the front link of the chain *d* fits. By placing the chain or coupling-links *d* in the lower notch the power of the spring is decreased, while its spring movement is increased. By placing the chain or coupling-links in the upper notch the power of the spring in its action upon the coupling is increased.

Instead of the notches and common links shown in Fig. 2, the front link may be flattened, as shown at *d'* in Figs. 6 and 7, and provided with a set-screw, by which it may be adjusted up and down the length of the turned portion of the spring, and thereby the same result is produced without cutting into or notching the spring. This method of adjusting upon the spring will be found useful in and of itself, without other or further provision for adjustment in the coupling; but in order to give the best results I provide an additional adjustment in the coupling by extending upward from the section I a blade or bar, *f*, which is slotted and provided with adjusting-notches, as shown in Fig. 2. Through this slot the pin

or bolt of the clevis or hook *e* passes, which engages with the adjusting-notches, so that a separate or additional adjustment may be made at the clevis. By this arrangement the weight of the beam may be accurately adjusted to the tension of the spring, and as the adjustment is required to be different for different soils, and as it is frequently necessary to change the spring adjustment for different parts of the same field, this method of adjusting will be found useful and convenient, as it may be made in either part without the use of a wrench and with but a moment's detention by any ordinary unskilled laborer, and the spring can be changed to a lighter tension for heavy soils, and to a heavier one for lighter soils with but a moment's detention, at any time, and any part of the field.

With the exception of the projection *f*, the beam portion I of the coupling, with its bolt *g*, is of a construction similar to that of many couplings now in use. The bolt *g* may be a hollow one, as shown, or it may be solid, the hollow being preferred, as it is lighter for its size. To this bolt the draft blade or bar *h* is applied by means of having cast with it a half-box, *h''*, and the half-box *m'* passing through a suitable opening in the plate *h*, so that with the half-box *m* the plate may have a sufficient movement when the set-screw *n* is released to adjust the plate up and down on the bolt *g*. The half-box *m* has a projection, as shown at Fig. 2, which prevents it from dropping through when the set-screw *n* is turned back. This arrangement gives me a long support upon the bolt *g*, which gives steadiness to the coupling, and which is easily applied and repaired when broken or worn. The draft-plate *h* is provided with a wider and flat portion, *h'*, which rests upon the plate *k* of the axle part of the coupling, which also aids in giving steadiness to the beam-coupling when in use. The front end of the plate *h* is provided with an eye or box, which encircles the horizontal portion B' of the axle. The plate *k* is provided with two similar boxes, *l*, which encircle the same portion of the axle, and this plate is provided with a slot, *j*, through which the bolt *i* passes. The under side of the plate *k* may be provided with ledges *k'*, as shown in Fig. 2, to prevent the bolt *i* from turning while operating its screw-nut. By loosening the bolt *i* the draft-plate *h* may be placed in any desired position within the limits of the slot *j*, and when in this position or adjustment it is secured by tightening the bolt *i*. This arrangement of the slot *j* and plate *h* *h'* furnishes the adjustment for regulating the space between the inner shovels or beams of a double-beam or straddle-row cultivator. The horizontal movements of the beams are obtained by the turning of the coupling I upon the bolt *g* and the vertical movements by the turning of the plates *h* and *k* upon the horizontal portion of the axle.

In making the beam-space adjustment the plate *k*, with its loops or boxes *l*, is not moved,

the movement taking place by shifting the relative position of the plate *h*, so that in operation this plate *h* may be in a middle position, as shown in Fig. 3; or it may be nearly or quite in contact with either of the boxes *l*.

The object and purpose of the plate *k* is to give steadiness to the coupling, while but a very small portion of the draft comes upon it, the draft being direct through the bolt *g* upon the plates *h*, so that the cultivator-beams would not be detached nor wholly inoperative if the plate *k*, with its boxes *l*, should be removed; but such plate will be found beneficial and advantageous in steadying the coupling and in simplifying the other adjustments. The clevis or coupling *e* is also formed with adjusting-notches *e'*, as shown in Fig. 3. This clevis in its simplest form—that is, with one notch—would be sufficient, with the side swaying of the spring, for a slight adjustment of the beam-space; but when a wide adjustment is made, in order to prevent the turning of the springs too far the chain or links *d* are moved to or toward the sides of the clevis *e*, and a clevis of this construction will be found advantageous and useful for connecting the coupling with rigidly-attached springs, so that I do not limit this part of my invention and its combination with a spring having a side or side-swaying movement.

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

1. The combination, with the frame and laterally-movable beam, of the spring *e*, hinged or pivoted at its upper end and having its lower end turned or twisted, and provided with a series of notches, *e'*, and a vertically-adjustable link, *d*, connected at one end with the beam and at its other end adapted to engage any one of the said notches, substantially as described.

2. The combination of the frame and the laterally-movable beam provided with the clevis *e*, having a series of adjusting-notches, *e'*, with the spring *e*, pivoted or hinged at its upper end, so that its lower end will freely travel sidewise when the beam is moved laterally, and the link *d*, connecting the notched part of the clevis with the lower part of the spring, substantially as and for the purposes described.

3. The combination of the frame and the laterally-movable beam provided with the upright flange *f*, having a series of adjusting-notches, with the clevis *e*, having a series of notches, *e'*, and adjustable on the flange, the spring *e*, hinged or pivoted at its upper end to a supporting-arm, so that its lower end will freely travel sidewise when the beam is moved laterally, and the vertically-adjustable link *d*, connecting the spring with the clevis, substantially as and for the purposes described.

4. The combination, with the beam, of the vertical bolt *g*, the draft-plate *h*, directly connected at one end with the axle and having the half-box *h''* and a through-opening, and the half-box *m*, arranged in said opening opposite the other half-box, said plate being vertically

adjustable on the bolt, substantially as described.

5 5. The combination, with the beam I and axle B', of the vertical bolt *g*, the draft-plate *h*, adjustable thereon and directly connected at one end with the axle, and the steadying-plate *k*, connected to the axle at opposite sides of the draft-plate, said draft-plate being adjustably connected to the steadying-plate, substantially as described.

10 6. The combination of the beam having the

upright flange *f*, provided with a series of notches, the clevis *e*, engaging the flange and having a series of notches, *e'*, the spring *c*, and the laterally and vertically adjustable links *d*, 15 connecting the spring with the notched part of the clevis, substantially as described.

MARSHALL SATTLEY.

Witnesses:

CLYDE A. SATTLEY,
WALTER SATTLEY.