

G. MOORE.

Improvement in Cultivators.

No. 128,499.

Patented July 2, 1872.

Fig. 1.

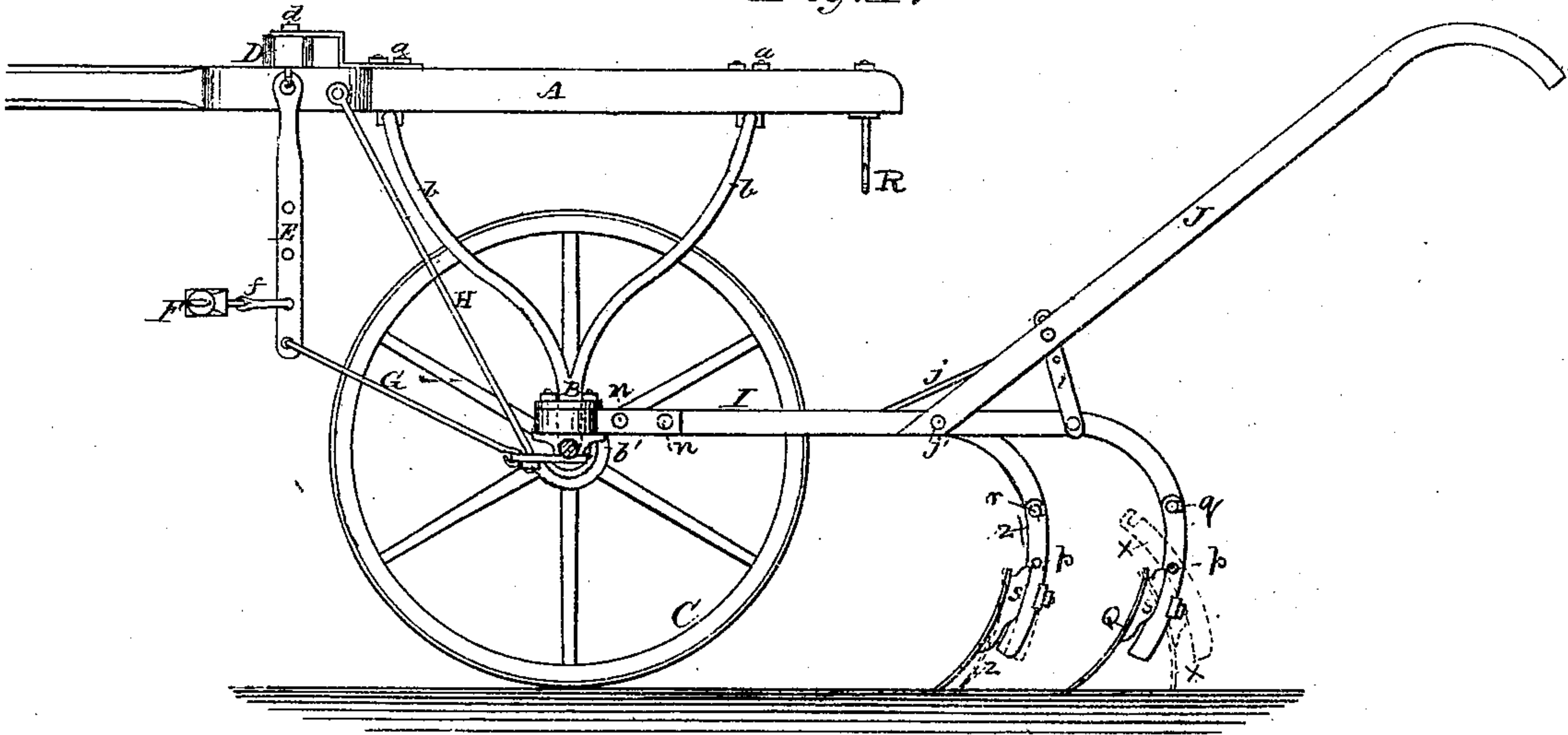


Fig. 2.

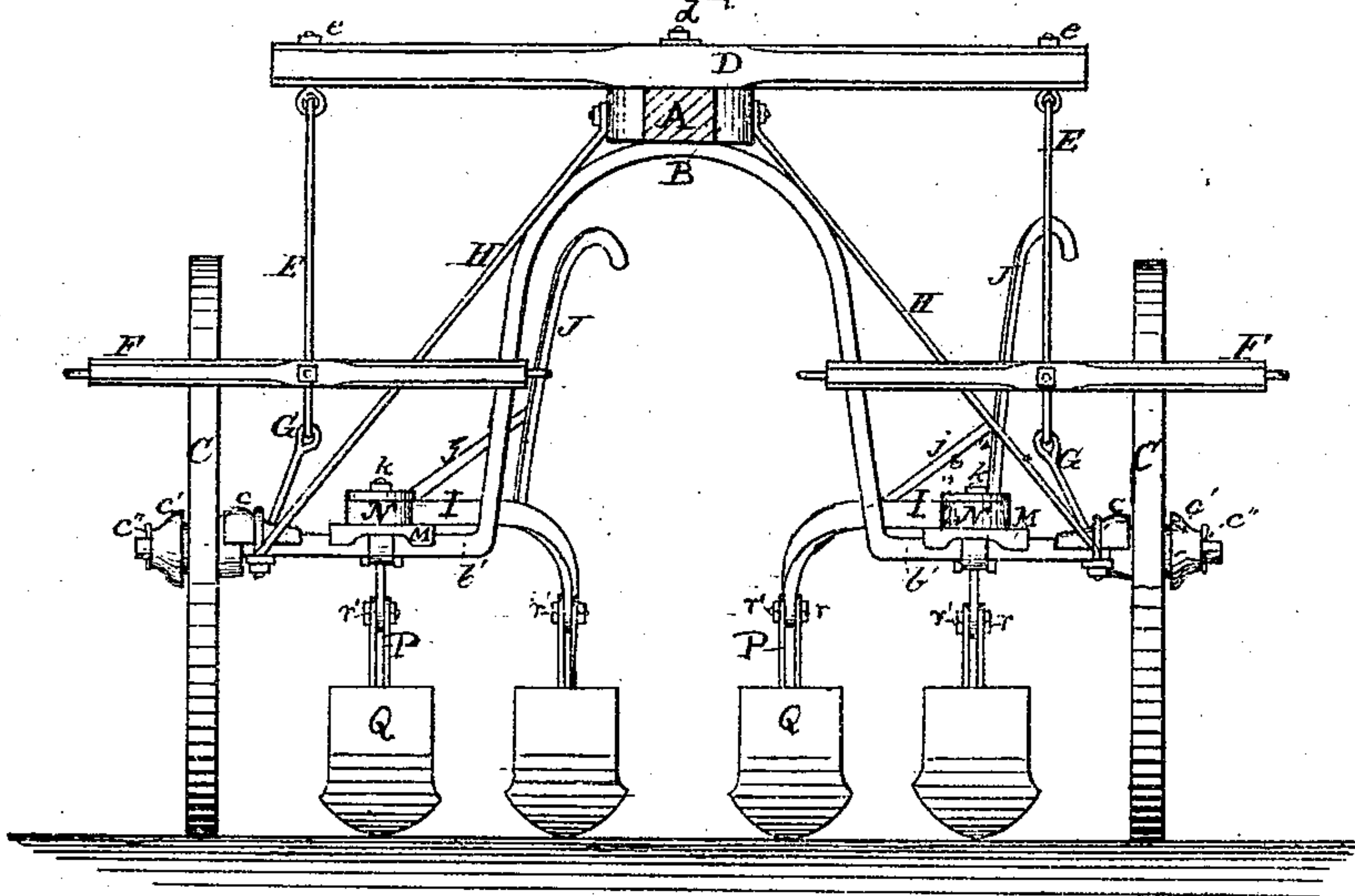


Fig. 3.

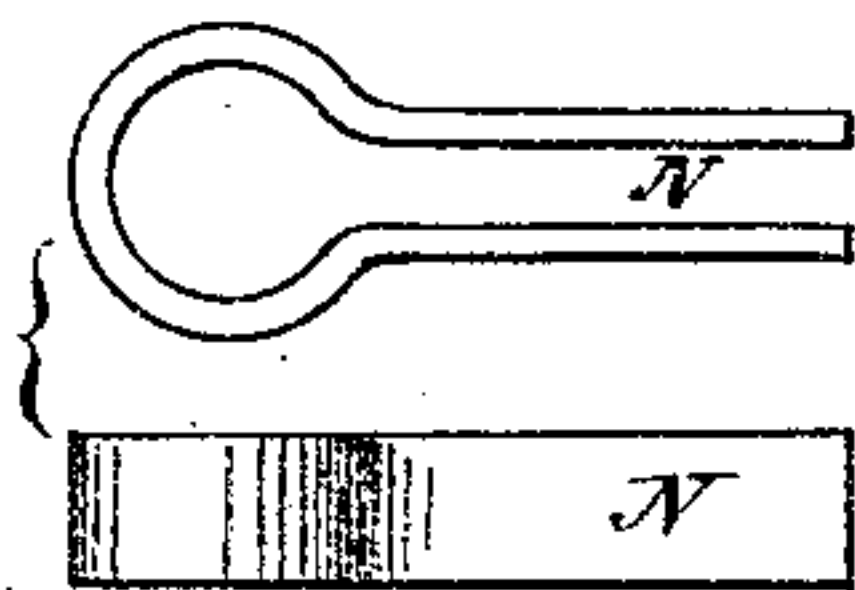


Fig. 4.

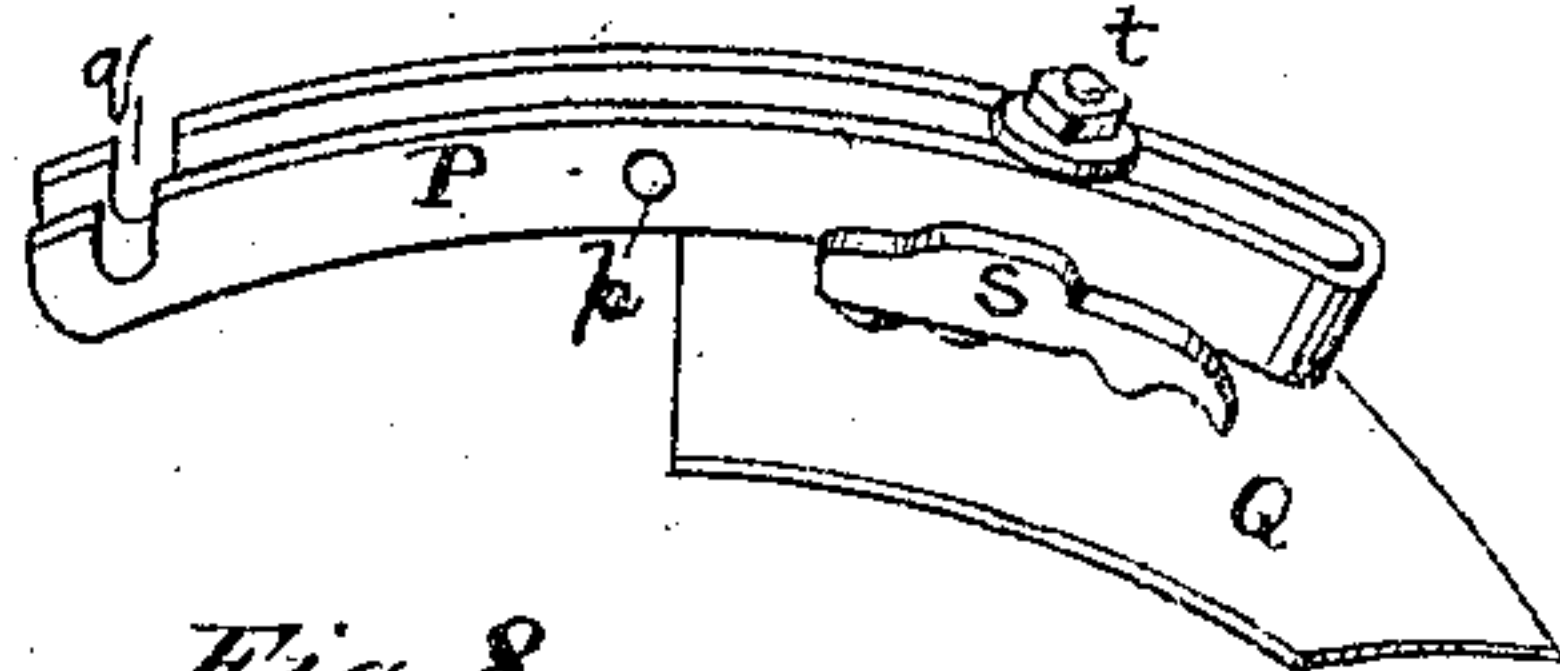
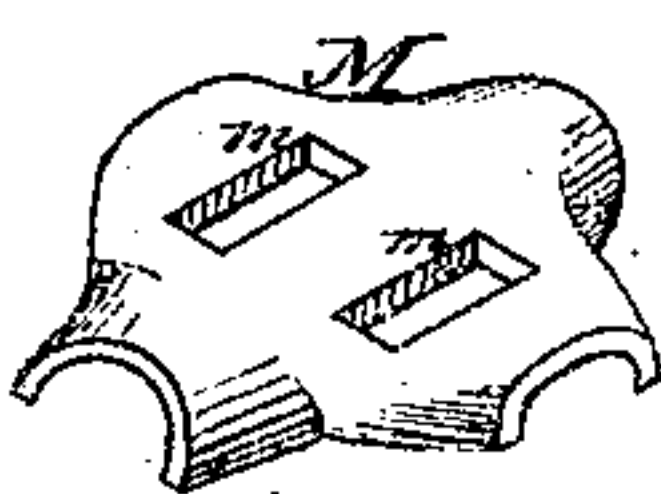


Fig. 5.

Fig. 6.



Fig. 7.

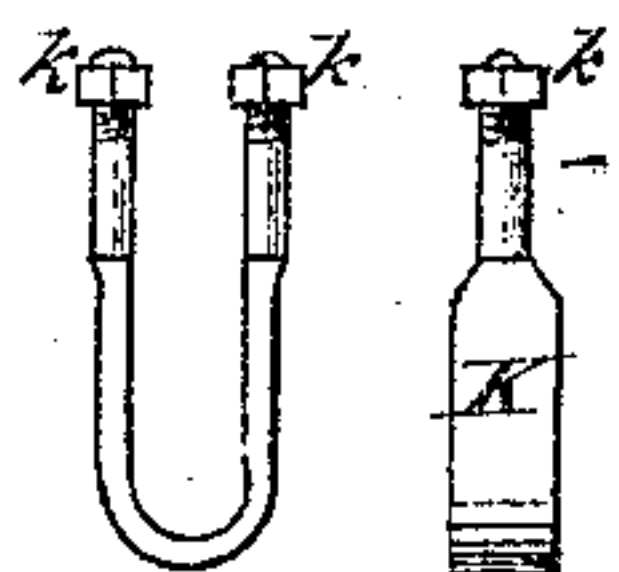
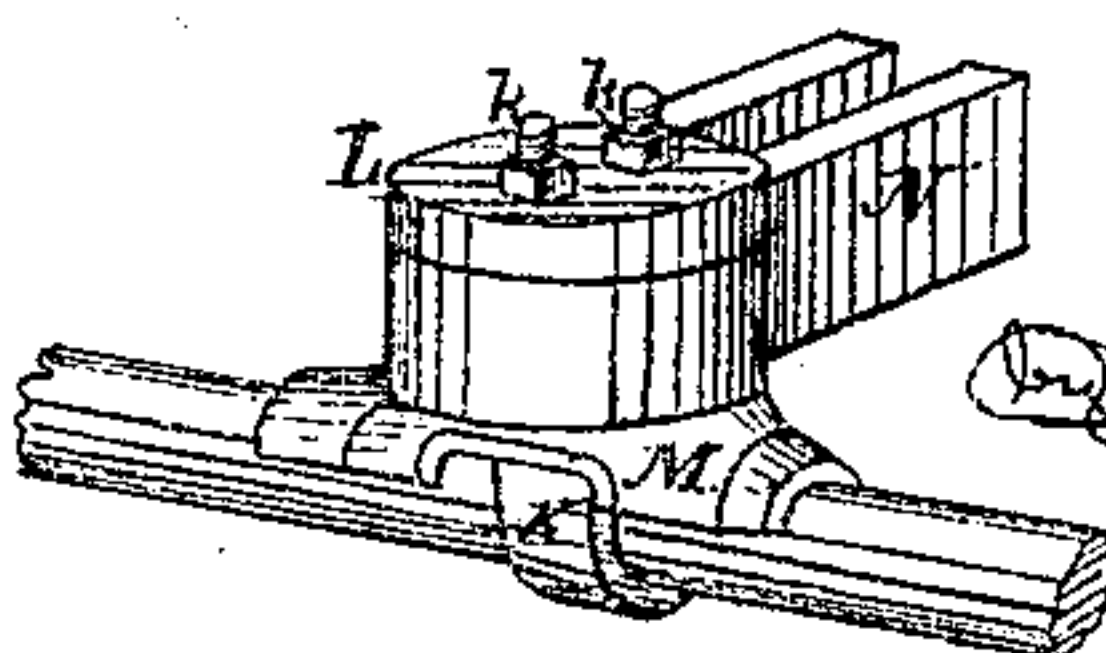


Fig. 8.



Witnesses:

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UNITED STATES PATENT OFFICE.

GILPIN MOORE, OF MOLINE, ILLINOIS, ASSIGNOR TO DEERE & CO., OF SAME PLACE.

IMPROVEMENT IN CULTIVATORS.

Specification forming part of Letters Patent No. 128,499, dated July 2, 1872.

Specification describing certain Improvements in Cultivators, invented by GILPIN MOORE, of Moline, in the county of Rock Island and State of Illinois.

My invention relates to certain improvements in that class of cultivators known as "walking straddle-row cultivators." The invention consists in constructing the truck-frame or axle of malleable iron bars welded together and shaped so as to form a double arch, the ends of which converge downwardly and unite to form laterally-projecting bars or spindles, thereby forming a solid combined axle and frame of great strength and little weight, and which can be constructed with great economy of both labor and material. It also consists in a new and improved device for hinging the plow-beams to the axle in manner hereinafter fully set forth; and, further, it consists in the peculiar construction of the shovel-standards and the method of attaching them to the plow-beams, whereby the angle of inclination of each shovel relatively with the soil can be independently adjusted, and other advantages in the operation of the plows accrue, as will hereinafter more fully appear.

In the accompanying drawing, Figure 1 is a side elevation of my improved cultivator. Fig. 2 is a front elevation of the same. Figs. 3, 4, 6, and 7 represent the several parts of the coupling or joint piece detached. Fig. 8 is the joint piece with its parts united. Fig. 5 is a detached view of a standard and shovel in perspective.

A represents the tongue or draft-pole, the rear end of which is projected in rear of the wheels for the purpose hereinafter set forth. B is the truck-frame or axle, composed of two metal bows, *b b*, secured to the tongue at the center of the arches, as shown at *a a*, Fig. 1. These bows converge downwardly, unite, and are turned outwardly, so as to form horizontal bars or spindles *b' b'*, on the outer ends of which the supporting-wheels C revolve. In constructing the frame B the parts are all welded together, thereby forming a solid axle and frame, combining great strength with little weight, the great desideratum in machines of this class. The wheels C C are kept in proper position on the wheel-spindles by hub-plates *c*, washers *c'*, and linchpins *c''*. D is the eveners

cross-bar, pivoted to the tongue, as shown at *d*, Fig. 1. Each end of this bar or double-tree is provided with an eye-bolt, *e*, to which are pivoted or loosely shackled the vertical draft-bars E. These vertical bars E are pierced with a series of holes for the reception of the hooks *f*, by means of which the single-trees F are attached to the draft-bars. By hooking the single-trees to a higher or lower hole of the bars E the point of attachment of the draft can be regulated as desired. G G are brace-rods, the ends of which are linked to the hub-plates *c* and lower ends of draft-bars E. H H are brace-rods, the ends of which are rigidly secured to the tongue and plates *c*, as shown by Figs. 1 and 2. I I represent two sets of plow-beams, arranged one on each side of the machine. They are constructed of rectangular metal bars, the rear ends of which are bent or curved downward. Each set is composed of two beams of unequal length, the inner being the shortest. They are united or brought together at their forward ends, and diverge rearwardly, so as to be some distance apart when they curve downward. J J are the plow-handles, adjustably secured to plow-beams by adjusting-bars *i* and brace-rods *j j'*, which also serve to brace the beams of each set. The handles are brought to one side by securing one to the outer beam of one set and to the inner set of the other. Each set of plow-beams is hinged to the axle-spindles *b'* by means of a double pivot-coupling or joint piece, which permits of their being moved freely in a vertical or lateral direction, and at the same time holds them steady and in proper working position without other support. This coupling is composed of the parts K L M N, Figs. 3, 4, 6, and 7. M is a metal plate, preferably of steel, formed to rest upon the axle-spindle. It has two rectangular slots, *m m*, for the reception of the ends of a stirrup, K, the rounded part of which is placed around the spindle, and its ends passed up through the slots *m*. N is the beam-plate or stirrup, between the ends of which the forward ends of the plow-beams are secured by bolts *n n*. L is a cylindrical pivot-block, formed with a projecting annular rim or shoulder, *l*, on its upper surface, and having bolt-holes corresponding with the slots *m* of plate M and grooves, as shown at *l'*. The beam-plate N is placed in position

with its rounded end inclosing the vertical ends of stirrup K, which are bolts formed and cut with screw-threads. The block L is then inserted between the beam-plate and stirrup, the ends of which will then project through the bolt-holes of the block, and nuts *k k* being then screwed on the coupling is complete, as shown by Fig. 8 of the drawing. It will be seen that the stirrup K clasps the axle-spindle, and thereby furnishes the pivot on which the plow-beam may be freely raised or lowered, while the beam-plate or stirrup N clasps the cylindrical block L and furnishes the pivot on which the beam is freely moved in a lateral direction. The wear of the parts through friction is taken up by tightening the nuts *k*, and when desired the distance between the two sets of beams can be adjusted by unscrewing the nuts and moving the plates M on the axle-spindles nearer together or further apart. P represents a plow-standard, constructed of a piece of flat metal of suitable length and width, bent or doubled so as to form parallel bars connected at the lower end, and left with open or free upper ends, so as to clasp the beam, to which it is pivoted by a bolt, *p*. The upper ends of the standard are slotted, as shown at *q*, Figs. 1 and 5. *r* is a headed bolt, which passes through the beam and slots of the standard. It is provided with a nut, *r'*, by tightening which the standard is made to clasp the beam with sufficient rigidity to resist the ordinary pressure of the soil on the shovel Q; but should the latter come in contact with any fixed obstruction, or meet with such extraordinary resistance as might break the shovel or standard if it did not yield to the pressure, the friction of the bolt *r* is overcome, and the standard turns upon the pivot-bolt *p*, as shown by dotted lines, Fig. 1, at *x x*. By loosening the nut *r'* the standard can also be adjusted to different angles of inclination, as shown by dotted lines, Fig. 1, at *z z*. The standards and plow-beams are bent with a continuous curve of peculiar form—neither a parabola nor the

true arc of a circle, but between the two. It is so formed in order that the shovels or plows may be adjusted up or down the curve of the standard, so as to run deep or shallow, as desired, and at varying depths, without materially affecting the distance between the points of the shovels and the plow-handles, which, with the aid of the adjusting-bars *i*, can be kept at a uniform distance above the ground, and be adjusted to suit the height of the boy or man who guides the machine. Each shovel Q is provided with a block, S, riveted to the back. These blocks have an elongated hole and a recess between them, and the shovels to receive and allow play for the head of a bolt, *t*, which secures the shovel to the standard. The bolt passes between the two sides of the standard. A nut and washer being secured on its projecting end, completes the attachment. Thus attached, the shovel can be adjusted laterally, so as to throw the soil to the right or left, and be secured at any point of the curved standard, so as to run deep or shallow, as desired. On the rearwardly-projecting end of the tongue A hooks R are secured, on which the plow-beams are suspended when the plows are not in use, or for convenience in turning at the end of a row, or transportation from field to field.

The operation of the machine is deemed sufficiently obvious without further description.

What I claim as my invention is—

1. The combined frame and axle-tree B, composed of the two bows *b b* and spindles *b' b'*, when constructed in one piece, in the manner and for the purpose specified.

2. The coupling or joint piece composed of the parts K, L, M, and N, constructed substantially as described, and arranged to operate in combination, for the purpose specified.

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Witnesses:

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