

(No Model.)

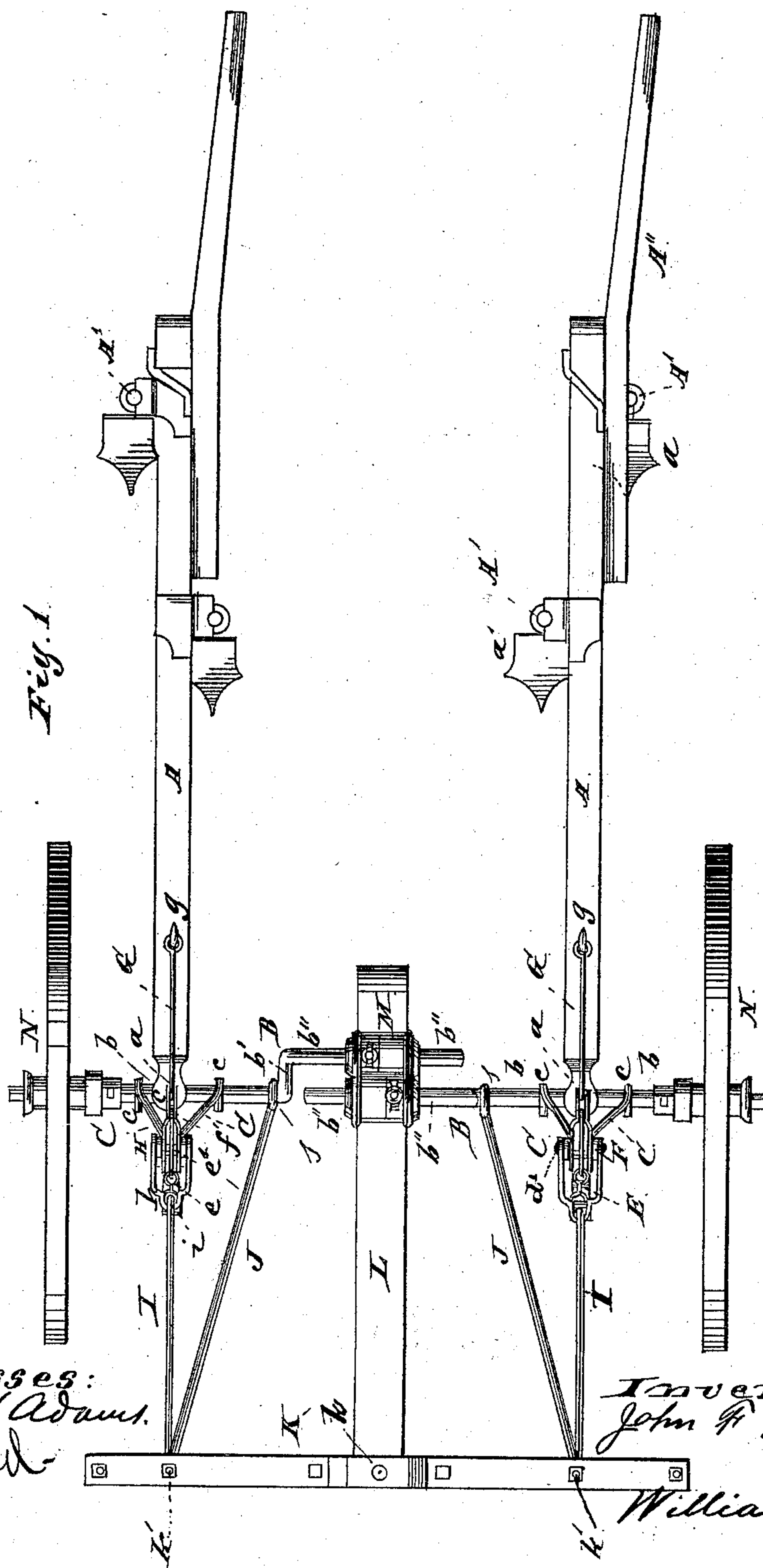
3 Sheets—Sheet 1.

J. F. PACKER & W. H. GAEDE.

CULTIVATOR.

No. 369,875.

Patented Sept. 13, 1887.



Witnesses:
Albert H. Adams.
A. V. Bond.

Inventors
John F. Packer
William H. Gaede

(No Model.)

3 Sheets—Sheet 2.

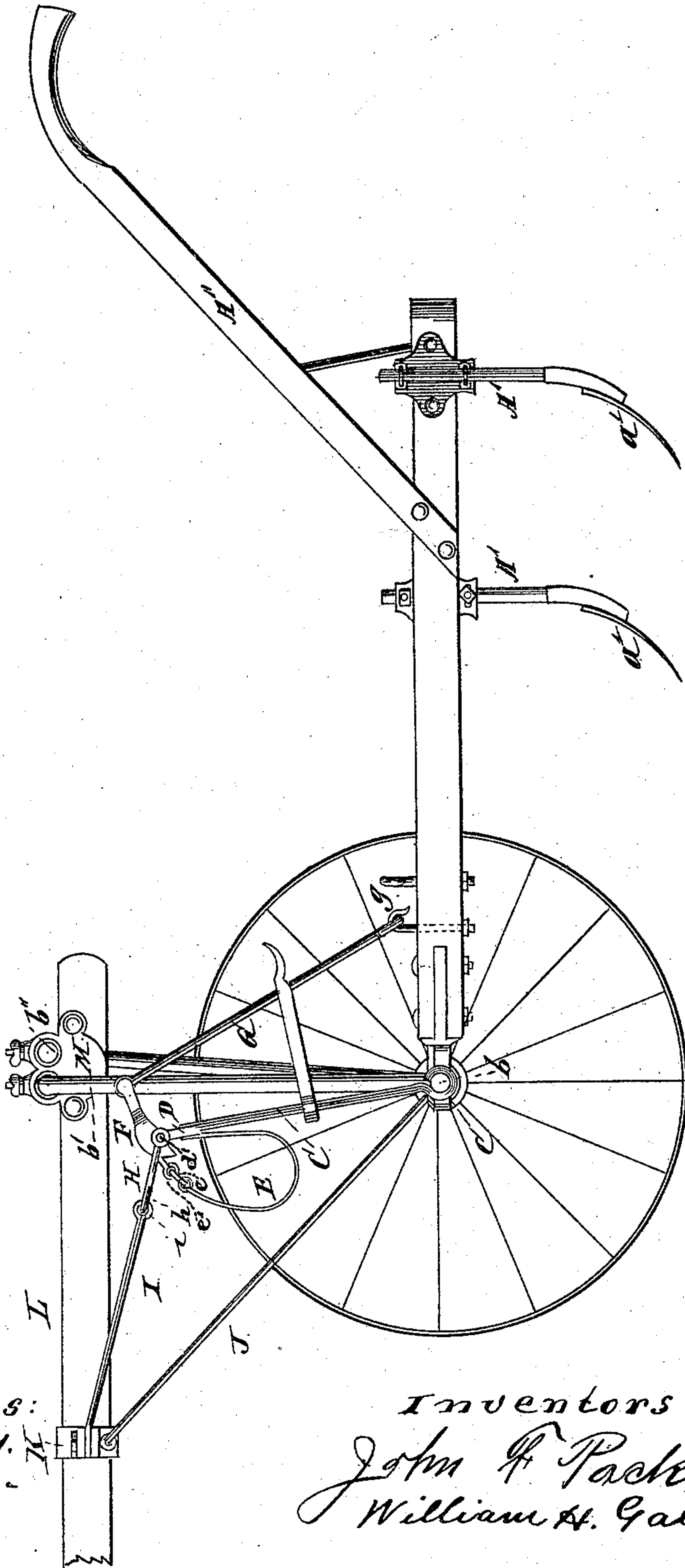
J. F. PACKER & W. H. GAEDE.

CULTIVATOR.

No. 369,875.

Patented Sept. 13, 1887.

Fig. 2.



Witnesses:
Albert H. Adams.
O. R. Bond.

Inventors:
John F. Packer
William H. Gaede

3 Sheets—Sheet 3.

CULTIVATOR.

Patented Sept. 13, 1887.

Fig. 3.

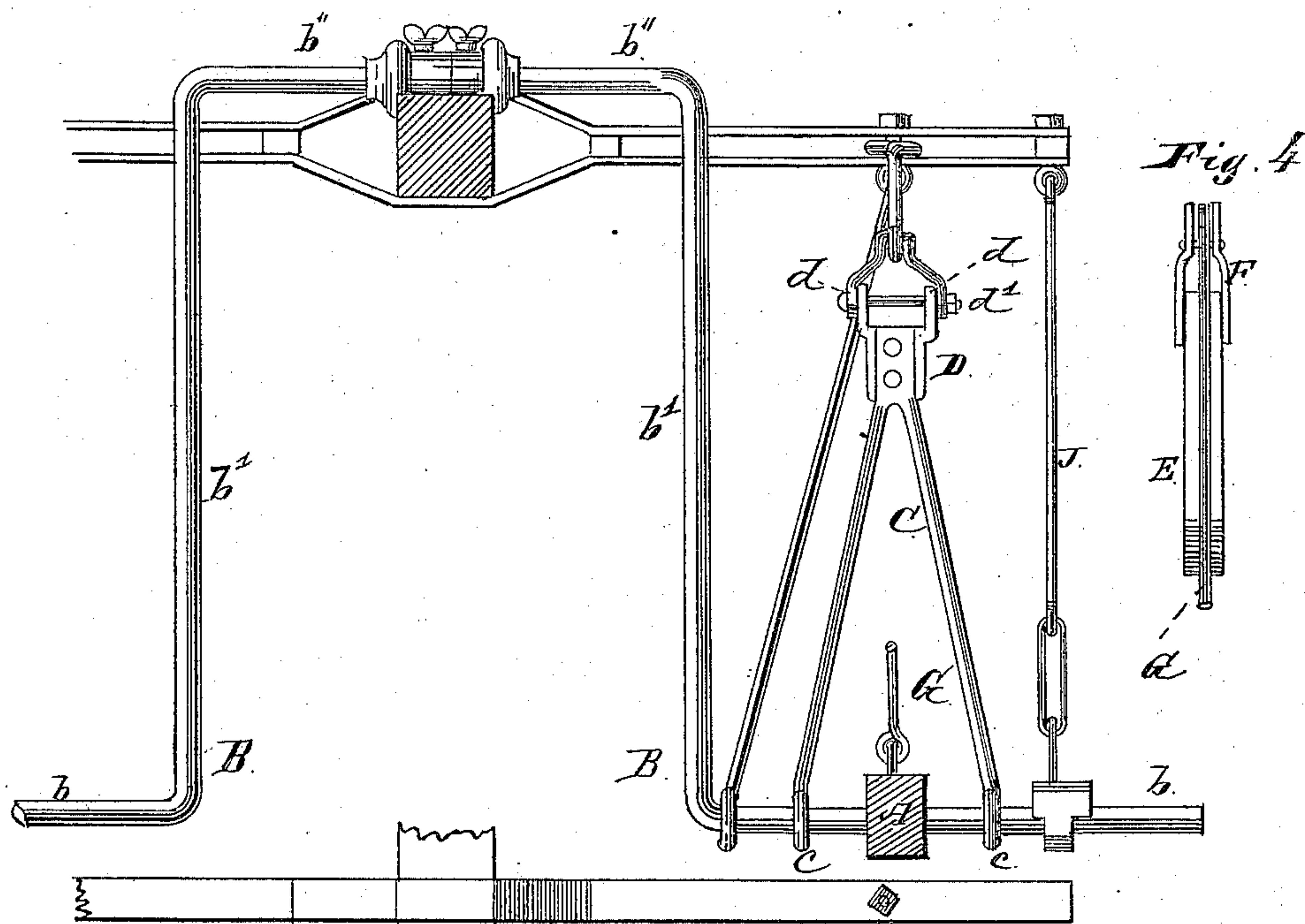


Fig. 4

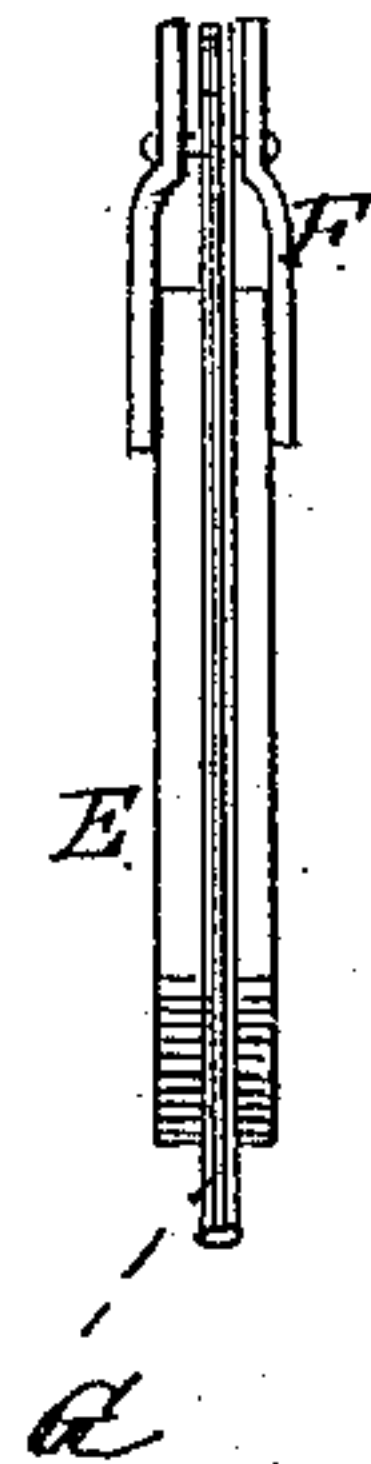
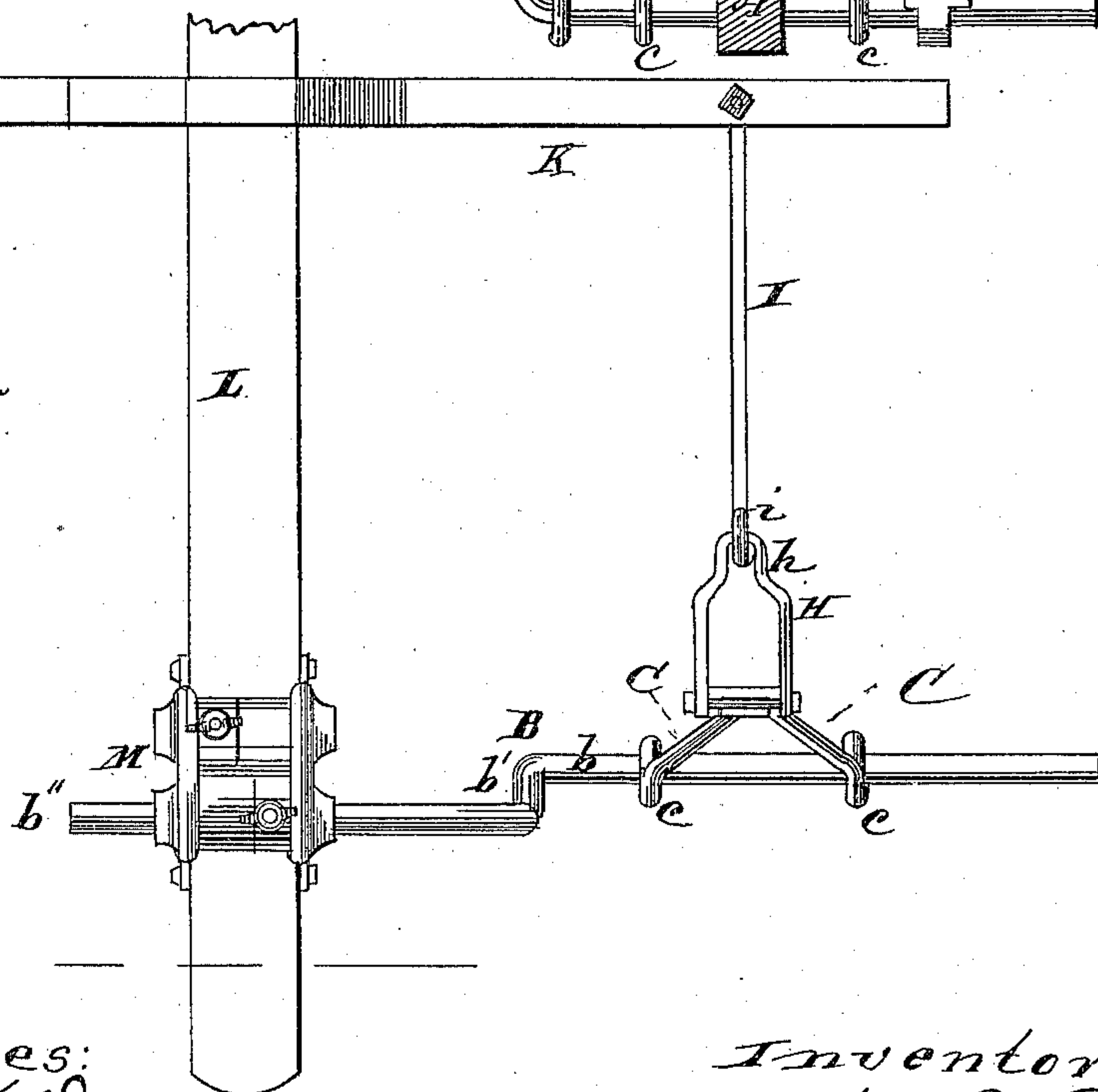


Fig. 5.



Witnesses:
Albert H. Adams.
A. W. Bond.

Inventors:
John F. Packer
William H. Gaede

UNITED STATES PATENT OFFICE.

JOHN F. PACKER AND WILLIAM H. GAEDE, OF CHICAGO, ILLINOIS, ASSIGN-
ORS TO THE DAVID BRADLEY MANUFACTURING COMPANY, OF SAME
PLACE.

CULTIVATOR.

SPECIFICATION forming part of Letters Patent No. 369,875, dated September 13, 1887.

Application filed December 28, 1885. Serial No. 186,935. (No model.)

To all whom it may concern:

Be it known that we, JOHN F. PACKER and WILLIAM H. GAEDE, residing at Chicago, in the county of Cook and State of Illinois, and citizens of the United States, have invented a new and useful Improvement in Cultivators, of which the following is a full description, reference being had to the accompanying drawings, in which—

10 Figure 1 is a top or plan view; Fig. 2, a side elevation with the wheel removed; Fig. 3, a detail, being a front elevation, showing the lifting devices on one side, with the beam and tongue in section; Fig. 4, a detail of the lift-
15 ing-lever, spring, and connecting-rod; Fig. 5, a detail, being a top or plan view, showing the lifting devices on one side of the machine.

This invention relates to that class of cultivators having adjustable arched sections, each
20 swinging independent of the other forward and back, for the purpose of equalizing the draft, and has for its object to adapt to each section a lifting arrangement to raise or assist in raising the beam, and to have such lifting
25 arrangement maintain the same relative position to the beam and draft-equalizer, irrespective of the position of the swinging arched section, thus enabling the arched sections to change their relation as required to equalize
30 the draft without affecting the operation of the lifting devices; and its nature consists in providing a lifting device located between the beam and the draft-equalizer or double-
35 justable arched section as to retain the same relative position to the beam in the advancing or receding of the arched section, and in the several parts and combinations of parts, hereinafter described, and pointed out in the claims
40 as new, for attaining the objects sought.

In the drawings, A represents the beams, each having at its forward end a suitable coupling, *a*, for attachment to the spindle portion of the arch, each carrying plow-standards A',
45 having suitable shovels, *a'*, and each provided with a handle, A''.

B represents the arched sections, each consisting of a lower horizontal portion, *b*, forming the spindle for the wheel, a vertical portion, *b'*, and an upper horizontal portion, *b''*, for connection with a socket on the tongue or

frame, and, when the beam is attached to its coupling *a*, which encircles the spindle *b*, it forming a pivotal connection for the vertical movement of the beam.

C is a support formed of two parts coming together at the upper end, and each having at the lower end an eye or ring, *c*, to encircle the spindle *b*, the support C, at its lower end, having its parts spread sufficiently apart to straddle the beam-coupling, as shown in Fig. 1.

D is a head formed with or riveted or bolted to the support C at the upper end, the head having ears *d*, through which passes a bolt or pivot, *d'*.

E is a spring one end of which is secured to the face of the head D, the attachment, as shown, being by the same bolts or rivets that attach the head to the support C. This spring is bent around, as shown in Fig. 2, and to its free end is attached a link, *e*, which receives one end of a rod or connection, *e'*, the other end of which is attached to an interposed lever between the spring and the beam-connection.

F is the interposed lever, pivotally mounted on the bolt *d'* between the ears *d* of the head D, and having a cross pin or bar, *f'*, on its long arm, to which the rod G is hooked or attached.

G is a rod the upper end of which is hooked or attached to a pin or cross-bar, *f'*, at the end of the long arm of the lever F, and the other end hooked or attached to a hook or eye, *g*, on the plow-beam, as shown in Fig. 2.

H is a stirrup between the open end of which is located the head D, the connection of the stirrup to the head being by the bolt or pivot *d'*, and, as shown, the closed end of the stirrup H has an eye or loop, *h*.

I is a rod one end of which has an eye or ring, *i*, to receive the loop *h*, and the other end is provided with an eye or opening for attachment to the doubletree or equalizer-bar.

J is a rod the rear end of which has a loop, *j*, encircling the spindle *b*, and the forward end of which has an eye for attachment to the evenor or equalizer bar at the same point where the rod I is attached.

The parts represented by the letters C, D, E, F, G, H, I, and J are in duplicate, one for each side of the machine.

K is the doubletree or draft-equalizing bar, mounted on the tongue or frame of the ma-

55

60

65

70

75

80

85

90

95

100

chine and held in position by a bolt, *k*, and this doubletree *K*, at each side of its pivotal point to the tongue, is attached to the forward ends of the rods *I J* for the respective sides of the machine, the attachment being by means of a bolt or pivot, *k'*, passing through the doubletree and through the eyes of the rods, and being one by which the turning of the doubletree will, through the rods *J*, advance and recede the arched sections, according as the doubletree is turned.

L is a tongue on which the doubletree is mounted.

M is a socket attached to the rear end of the tongue, in the form of construction shown, to receive the upper ends, *b''*, of the arched sections in such manner as to leave the sections free to swing forward and back and be held against lateral or end movement after adjustment.

N represents the wheels, one for each side of the machine, and attached in any suitable manner to the spindle portion of the respective arched sections.

In use each side of the cultivator is independent of the opposite side, and at the same time, through the connection with the doubletree, a forward or advance movement of one side will produce a rearward or receding movement of corresponding extent for the opposite side, such movements being produced through the connecting-bars *J*, and with each advance or receding movement of the arched section the lifting devices will also be advanced or receded by their attachment to the spindle of the section, and such attachment, being in effect a rigid one, will not affect the relation between the spring, the beam, and the interposed lever, for the reason that the distance between the points of attachment of the draft-equalizer, the spring and its lever, and the plow-beam remains the same, so that under all circumstances and all conditions the spring and lever are free to act and do the work required in lifting or assisting to lift the beam. The arched sections are left perfectly free to be thrown forward or back, as required for equalizing purposes, allowing the arched sections to change their relative position to each other and to the tongue without disturbing the action of the lifting devices, which maintain their relative position one to the other and to the beam and equalizer, whether the arched section be thrown forward or carried back.

The maintaining of the relative position of the spring or lifting devices to the beam and an equalizer arises through the lifting devices being supported from a point which travels with the wheel and the beam forward and back proportionately, and at the same time the lifting device itself is carried forward and back to the same extent through its connection with the equalizing-bar, inasmuch as the movement of the equalizing-bar also controls the extent of movement of the wheel and beam, and the support *C* carried on the axle-spindle, and on which is mounted the lifting-spring, and

its coacting devices furnish a means for carrying out the object sought to be obtained—namely, the maintaining of the relative position of the parts irrespective of the position of the wheel and the arched section. It will be seen that the arched section swings from the pivotal point to the tongue or frame, its lower end moving in the arc of a circle, and as the supports for the lifting devices are connected to the wheel-spindle such lifting devices must be carried forward or backward with the spindle, and if the lifting devices were attached to the side or vertical portion of the arched section the movement of such lifting devices would be in a smaller arc than that of the beam, necessitating a lengthening or shortening of the connection for the beam with the lifting devices with each change in position of the wheel; but by the carrying of the spring lifting device from the same point from which the movement of the beam and wheel arises, and also connecting the spring lifting device with the doubletree or equalizing-bar through which the movement of the wheel-spindle is produced, even though the connection is a flexible one to allow lateral adjustment, the same vertical plane for the movement of the wheel-spindle, beam, and wheel, and the lifting-spring is maintained, irrespective of the relation of the spindle to a vertical plane through the tongue.

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

1. In a sectional arch cultivator having a forward and back movement, with the draft-equalizer, a lifting device located between the plow-beam and draft-equalizer and connected with both, the wheel-spindle of each section being rigidly connected to the corresponding side of the draft-equalizer, whereby the lifting device retains the same position relatively to the plow-beam under all conditions, substantially as described.

2. The combination, with the beam *A*, arched section *B*, and a draft-equalizer, of a lifting device located and operating between the beam and draft-equalizer and connected to both, substantially as specified.

3. The combination, with the beam *A*, arched section *B*, and a draft-equalizer, of the support *C*, head *D*, spring *E*, lever *F*, connecting-rod *G*, stirrup *H*, and connecting-rods *I J*, substantially as and for the purpose specified.

4. The combination, with an arched section carrying a beam and a support carried by the arched section, of an equalizing-bar and a lifting device, and connections between the lifting device, the plow-beam, and the draft-equalizer, substantially as and for the purpose specified.

JOHN F. PACKER.
WILLIAM H. GAEDE.

Witnesses:

ALBERT H. ADAMS,
HARRY T. JONES.