

No. 624,334.

Patented May 2, 1899.

P. F. HODGES.
FRONT CUT MOWING MACHINE.

(Application filed Sept. 27, 1898.)

(No Model.)

Fig. 1.

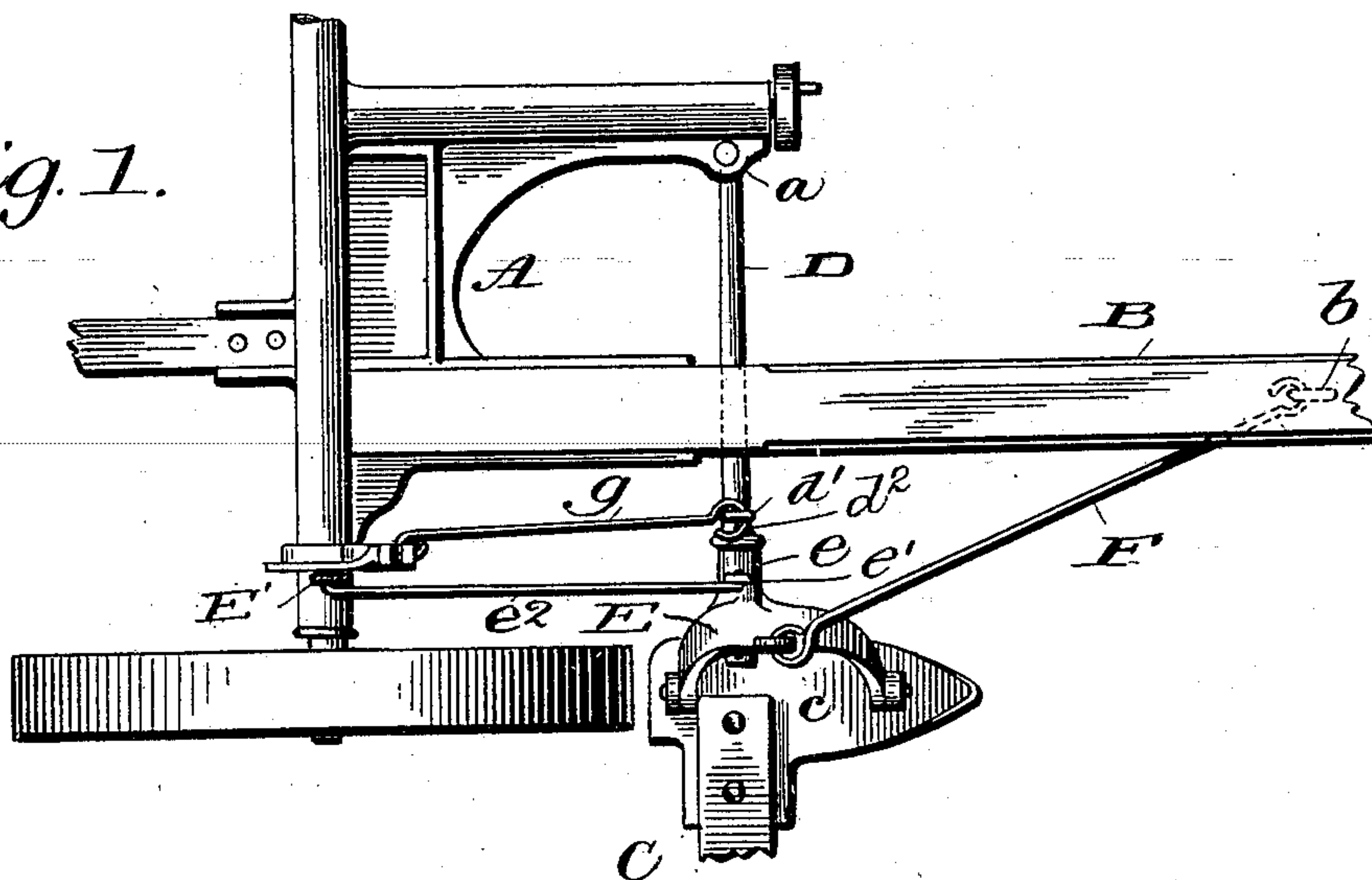


Fig. 2.

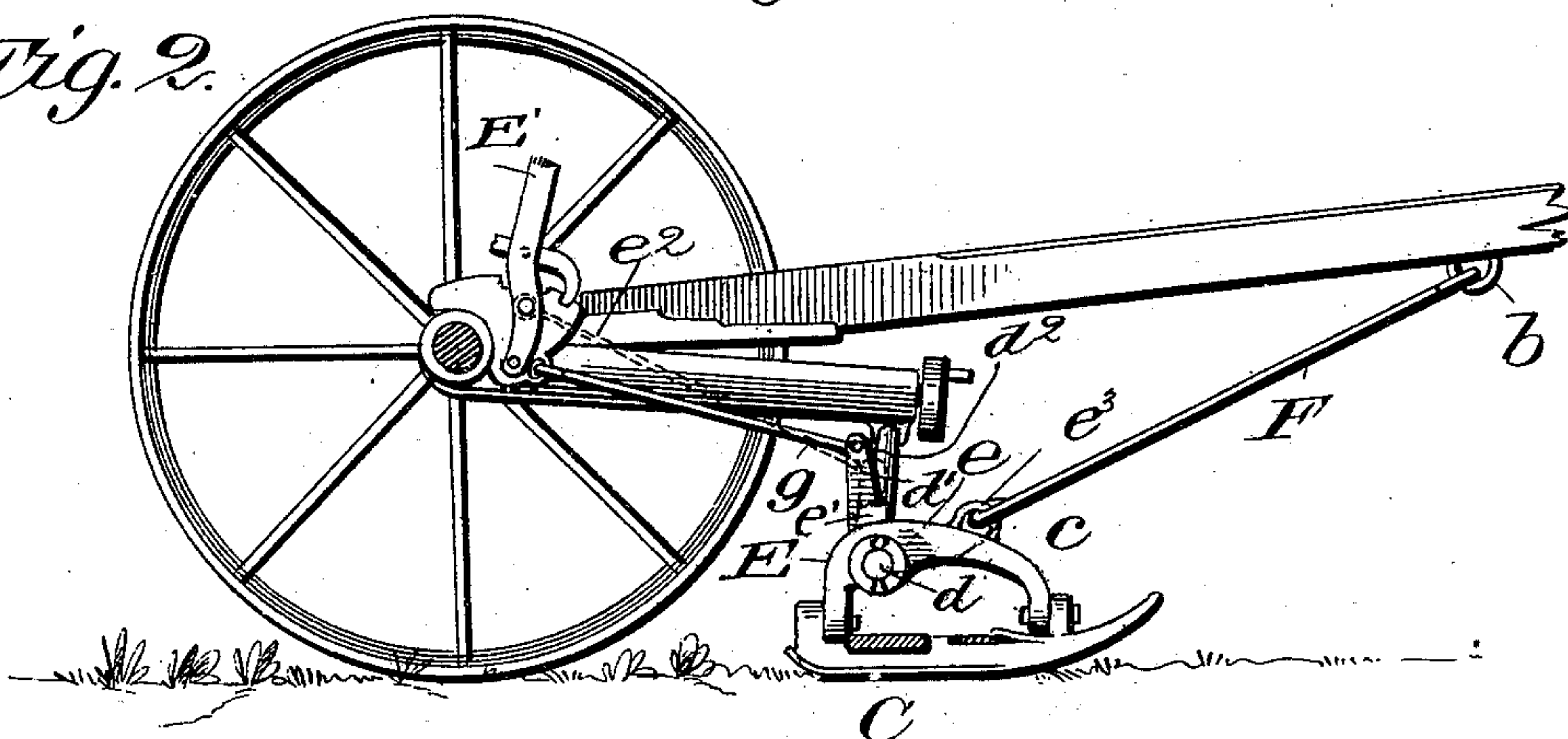
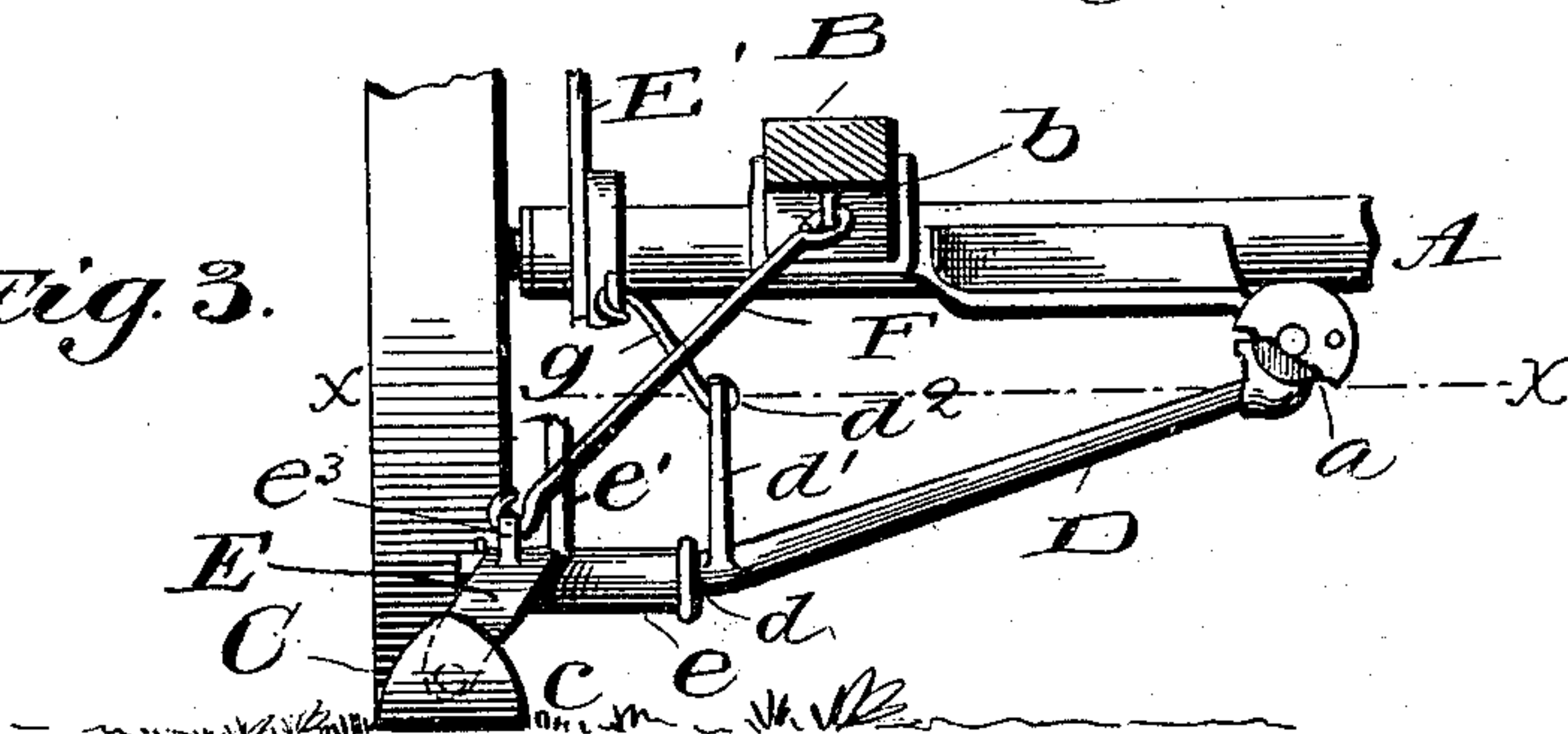


Fig. 3.



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PLINY F. HODGES, OF GOOCHLAND, VIRGINIA.

FRONT-CUT MOWING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 624,334, dated May 2, 1899.

Application filed September 27, 1898. Serial No. 692,015. (No model.)

To all whom it may concern:

Be it known that I, PLINY F. HODGES, a citizen of the United States, residing at Goochland, in the county of Goochland and State of Virginia, have invented certain new and useful Improvements in Front-Cut Mowing-Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My present invention relates to front-cut mowing-machines; and it consists of certain improved constructions and combinations of parts whereby certain evils of the older constructions are avoided and improved results obtained.

In the accompanying drawings I have shown the best mode in which I have contemplated embodying my invention, and my said invention is disclosed in the following description and claims.

In the drawings, Figure 1 is a plan view of the truck-frame, cutting mechanism, and draft devices, the greater part of the finger-bar being broken away to permit the figures to be made on a larger scale for the better presentation of the parts shown therein. Fig. 2 is a view in elevation from the grass side, some parts being broken away; and Fig. 3 is a front elevation.

In some front-cut mowers the cutting mechanism is so attached to and connected with the truck-frame that in case of any increase of resistance to its passage through the grass the increased draft has a tendency to lift the truck-wheels and thereby lessen their tractional power, and this oftentimes results in the clogging of the machine. In order to avoid this result and its consequent evils, machines have been constructed in which the cutting mechanism is drawn or dragged by a draft-link pivoted to the pole or tongue of the machine. In such constructions there is a device which may be termed a "coupling-brace" interposed between the finger-bar and the opposite side of the machine, and such coupling-brace is pivoted by a universal-joint connection to the frame at their point of intersection. In such cases when the inner end of the finger-bar, or the end nearest the truck-frame, rises and falls it will be moved in the

arc of a circle of which the forward pivot of the draft-link is the center. The connection of the coupling-brace with the finger-bar comprises such uniting devices as to permit of a flexure at that point parallel with the line of draft, but which compel the two to move together as one on the universal connection as a pivot in any backward-and-forward movement. In consequence of this, as the inner end of the finger-bar is moved out of a straight vertical line in rising and falling the combined finger-bar and coupling-brace move backward and forward on the pivotal connection with the frame, causing the finger-bar to assume varying angles to the line of draft, and as the deviation from the normal line at the inner end of the finger-bar is largely increased at the outer end of the bar this is very objectionable. This objectionable feature of this construction has been overcome by my invention, the novelty of the same being directed to this end.

In the drawings, A is the truck-frame; B, the pole or tongue; C, the finger-bar, and c the shoe at the inner end of the finger-bar. These may all be of any of the ordinary and well-known forms of construction.

D is what I have hereinbefore termed the "coupling-brace." This is in this instance connected to the truck-frame at *a* by a ball-and-socket joint. The main portion of this coupling-brace is normally in an inclined position, as best seen in Fig. 3; but a portion of the same, *d*, nearest the finger-bar extends at an angle to the main body of the coupling-brace, so that when the machine is in operative position this part of the brace will be practically horizontal.

E is the hinge-piece. This is provided with a sleeve *e*, to which the part *d* of the coupling-brace is fitted. The finger-bar is hinged in a well-known way to the hinge-piece. This joining of the coupling-brace with the finger-bar permits the movements of the finger-bar heretofore described. The hinge-piece or sleeve E is provided with an upwardly-extending arm *e'*, which is connected by a link *e''* to a lever E', by which the finger-bar can be rocked or tilted. The hinge-piece is also provided with means for securing the rear end of the draft-rod pivotally thereto, and this is in this instance the eye *e'''*, and the draft-link F se-

curely engages the same. The forward end of the draft-link is held by a staple or eye *b*.

The coupling-brace is, near the sleeve, provided with an upturned extending arm *d'*. At the point *d*² upon this arm, which is at the level of the point of attachment of the coupling-brace to the truck-frame, is pivoted one end of a link *g*. The other end of the link is pivoted to the truck-frame or to some stationary part of the machine secured thereto.

By the term "crank construction" used herein I refer to the parts connecting the finger-bar with the truck-frame of the machine and with the link *g* or any construction equivalent thereto, in which the shoe *c* is sleeved upon a part, such as *d*, which is parallel to the axis upon which the said coupling-brace rotates or vibrates, whereby the finger is held at a constant angle to the line of draft and truck-frame.

It will be seen that should the inner shoe of the finger-bar and the hinge-piece move backward or forward the coupling will act as a crank, turning on a line *xx* extending through *d*² and *a* as its axis. The part *d* of the coupling-brace is made parallel with the line *xx* or the real axis, and the movements of this part of the brace will be the same as if the part of the coupling-brace farthest from the cutting devices extended from the ball-and-socket connection with the frame of the machine inward along the line *xx* to the point at which the link *g* connects with the arm *d'* and was then bent at right angles to the said line, following the arm *d'*. Such a construction would give the same results, but would not be as strong as the present to resist endwise pressure or pull. The construction here shown is just as much of a crank as would be the construction just described, which is only here referred to to more clearly set forth the function of my actual device. In rising the hinge-piece *E* will be controlled by the draft-link and will move somewhat backward. This will cause the part *d* of the coupling-piece to swing slightly backward on its crank-axis *xx*, but such movement will not change the angle of the part *d* of the coupling-brace or the finger to the line of draft. Such angle will remain constant because of the crank construction connecting them with the frame of the machine. While the movement of the coupling-

brace is that of a crank, the extent of such motion is not great; but as all movement is around the line *xx* as an axis the desired result is secured. It will also be seen that the cutter-bar is wholly drawn or dragged by the draft-link and that any retardation or increased resistance to the cutter-bar will have no effect to lessen the tractional power of the truck-wheels.

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

1. In a front-cut mowing-machine, the combination with the truck-frame and pole, of the cutting mechanism and draft-link, the said cutting mechanism being connected to a crank construction interposed between it and the truck-frame, whereby the said cutting mechanism is held at a constant angle to the line of draft while rising and falling to conform to the undulations of the ground, substantially as described.

2. In a front-cut mowing-machine, the combination with the truck-frame and pole, of the cutting mechanism and draft-link, said cutting mechanism being connected to a crank construction, said crank construction having one end of its axis connected to the truck-frame by a universal-joint connection and another part of its axis connected to said frame by a link permitting one end to rise and fall, whereby the cutting mechanism is free to rise and fall but is held at a constant angle to the line of draft, substantially as described.

3. In a front-cut mowing-machine, the combination with the truck-frame, finger-bar, pole, hinge-piece and draft-link, of a coupling-brace between the finger-bar and truck-frame and united to the latter by a universal-joint connection, said coupling-brace having a pivotal connection with the hinge-piece and also having between its ends another bearing forming with the universal-joint connection an axis upon which the finger-bar and the coupling-brace may swing, substantially as described.

In testimony whereof I affix my signature in the presence of two witnesses.

PLINY F. HODGES.

Witnesses:

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