

(No Model.)

R. H. DIXON.
MOWING MACHINE.

No. 436,825.

Patented Sept. 23, 1890.

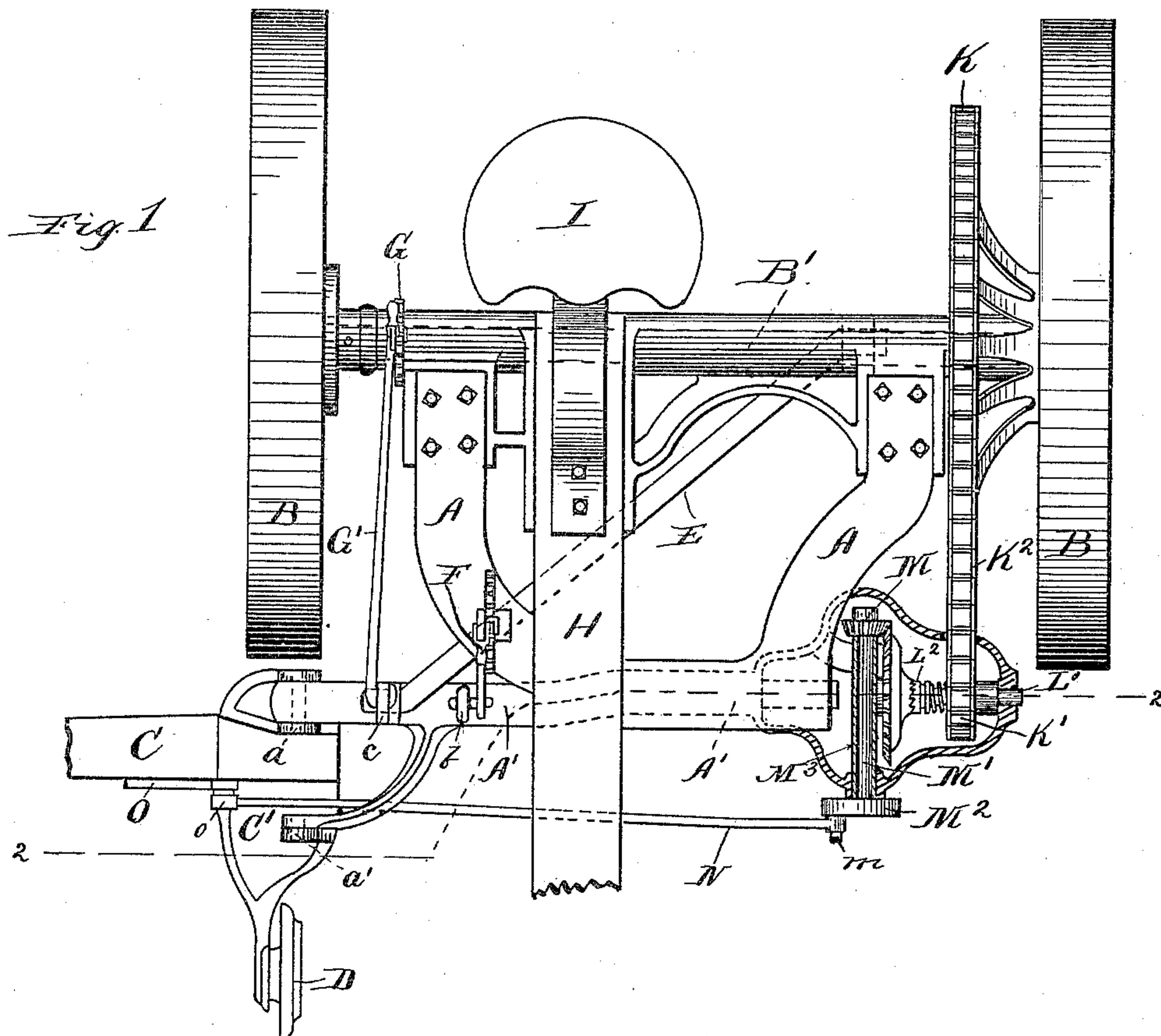


Fig. 5.

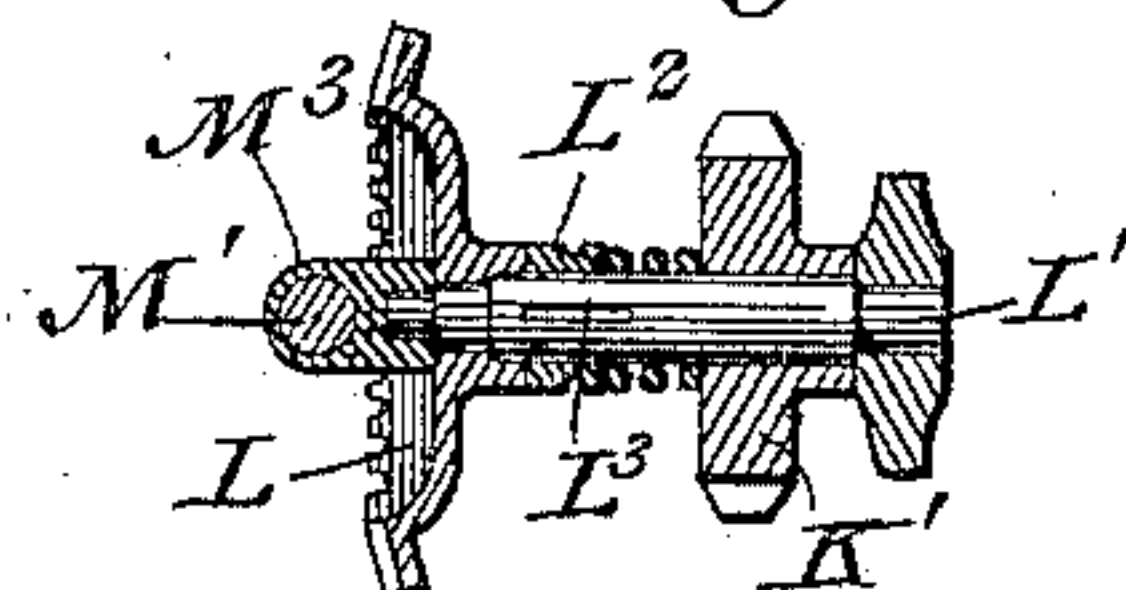


Fig. 2

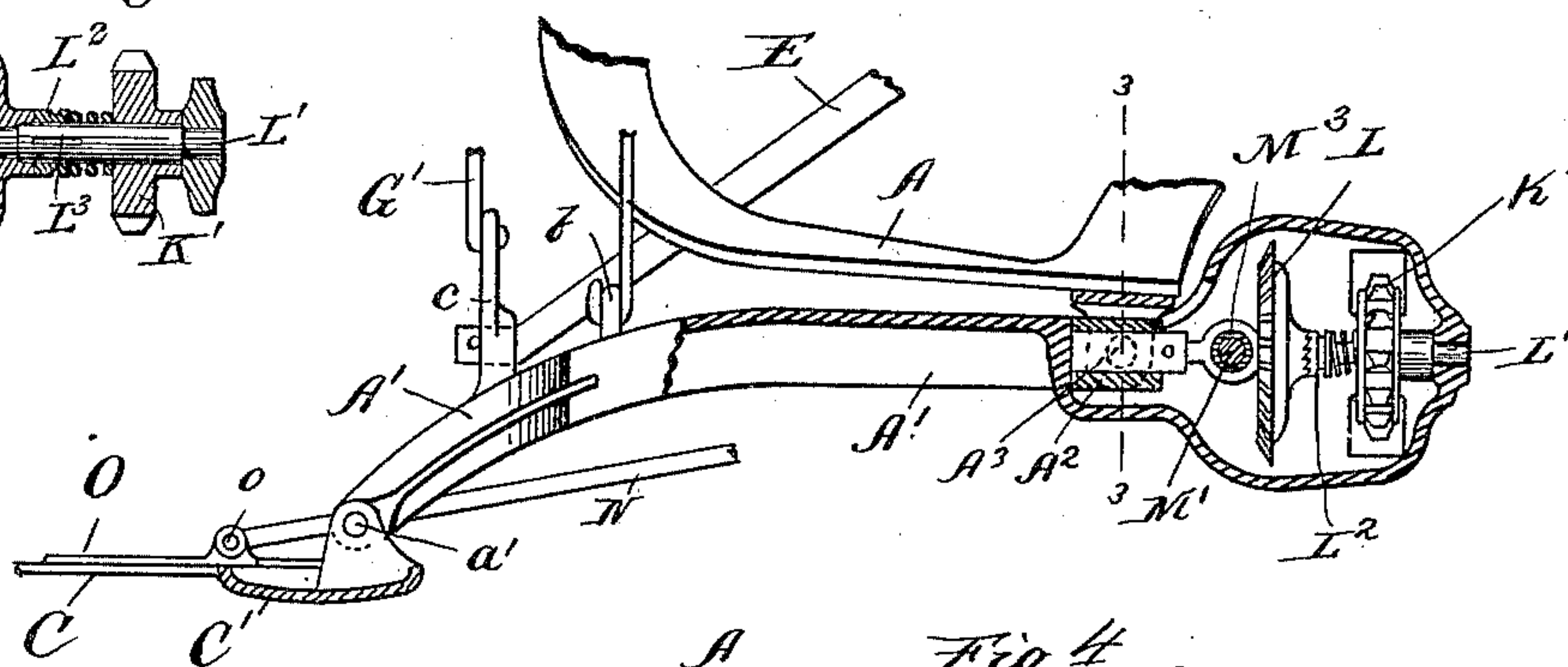


Fig. 3.

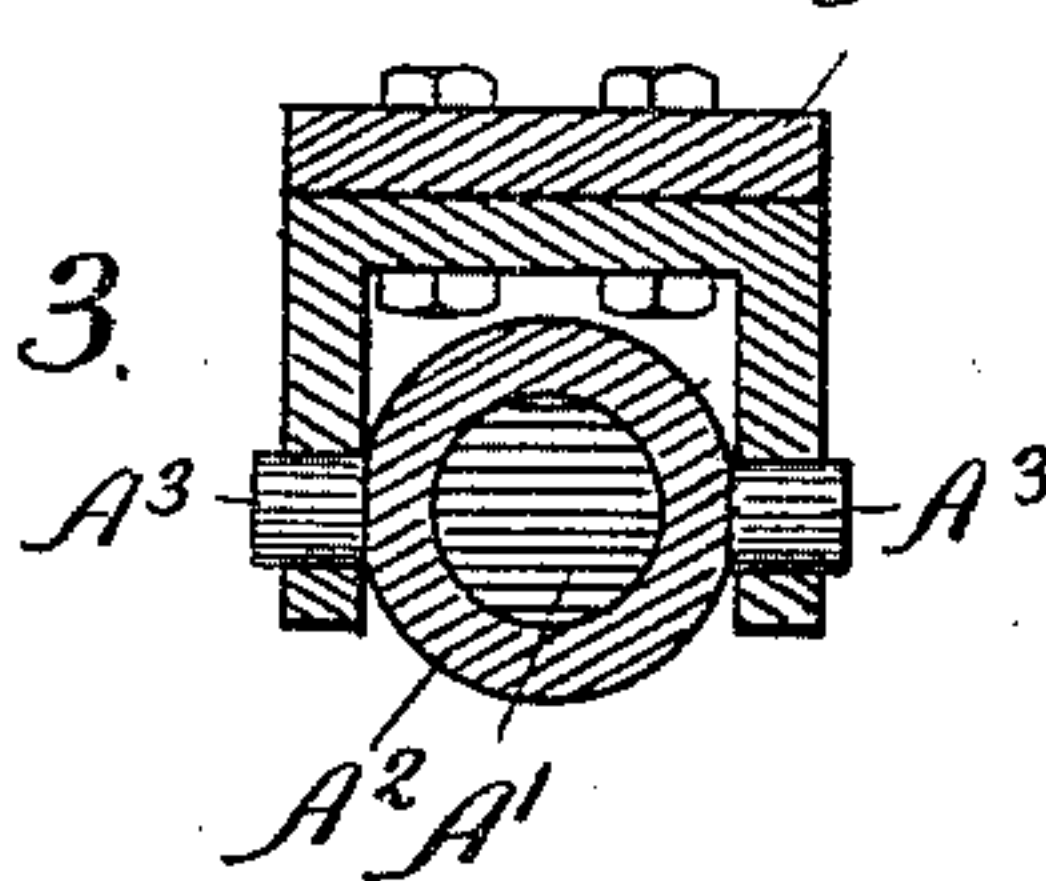
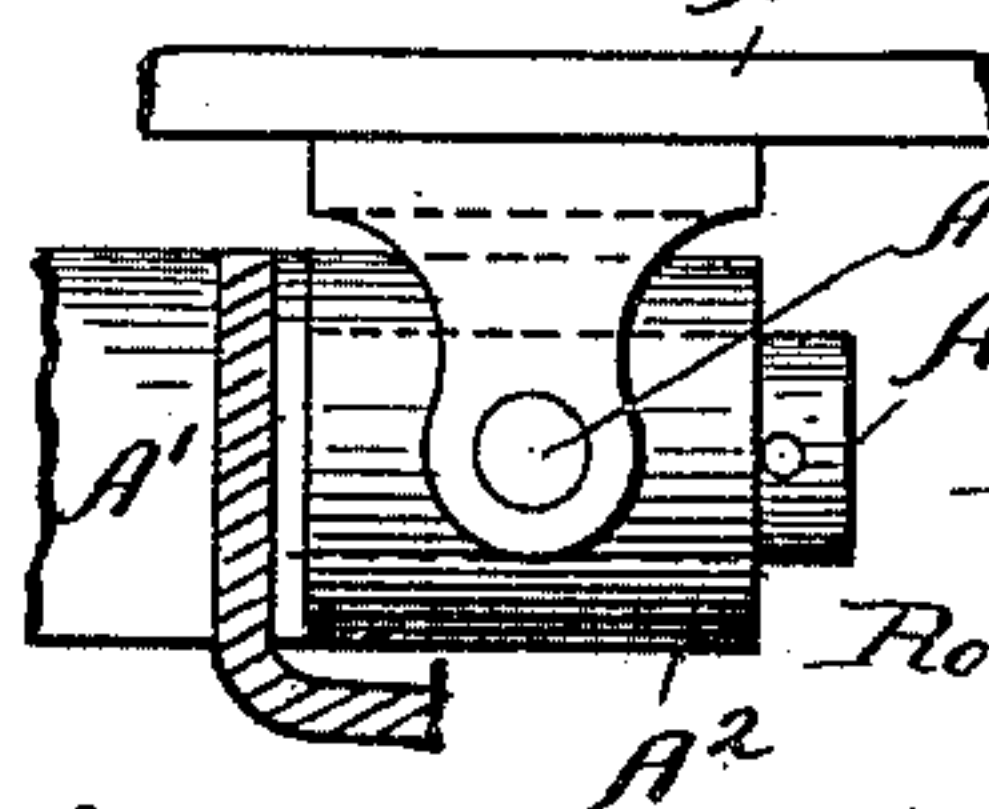


Fig. 4



Witnesses:

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ROBERT H. DIXON, OF STILLWATER, MINNESOTA.

MOWING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 436,825, dated September 23, 1890.

Application filed April 10, 1890. Serial No. 347,365. (No model.)

To all whom it may concern:

Be it known that I, ROBERT H. DIXON, a citizen of the United States, residing at Stillwater, in the county of Washington and State of Minnesota, have invented certain new and useful Improvements in Mowing-Machines, of which the following is a specification.

My invention relates to that class of mowers having two carrying-wheels, both of which are preferably drivers, and having a finger-bar jointed to its supporting member and adapted to be tilted by the driver; and the objects of my invention are, first, to provide a support for the knife-operating gear which shall rock with the finger-bar; second, to so place the knife operating gear that it shall rock with the finger-bar; third, to connect the knife and its operating-crank wheel by a pitman which shall rock with the finger-bar, and in general to improve the operation of the mower. I obtain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a plan view of my mechanism. Fig. 2 is a sectional elevation of Fig. 1 on lines 2 2. Fig. 3 shows a section of the hinge-connections of frame A and part A' on line 3 3, Fig. 2. Fig. 4 shows hinge-connections of frame A and part A'. Fig. 5 is a longitudinal section of shaft L' on line 2 2, Fig. 1.

Similar letters of reference denote the same parts throughout the several views.

The frame A is supported on the axle B' of the wheels B B in the usual manner, and may be varied in form to suit the requirements of construction or wishes of the builder. The rocking coupling-piece A' is hinged to the frame A by the box A², which is held by trunnions A³, which enables this coupling-piece to have a rocking motion, and its free end, to which the finger-bar is hinged, a vertical movement, Figs. 1 and 3. The finger-bar C (a part of which only is shown) is fastened to the shoe C'. The rocking coupling-piece A' (shown partly in horizontal sections in Fig. 1 and partly in vertical sections in Fig. 2) is forked or bifurcated at its free end and is pivoted to the shoe C' at a a'. It is then carried upward, and has the upwardly-extending arm b, to which the lifting-lever F attaches, and the upwardly-extending arm C, to which the tilting or rocking lever G con-

nects by the pitman G'. Toward the outer end a cylindrical part is formed adapted to be supported in the box A², which is held by the trunnions A³ in a support pendent from frame A. Before reaching the bearing just described the piece is parted and extended so as to furnish transverse bearings for the shaft M' and longitudinal bearings for the shaft L', the inner bearing M³ formed on the sleeve about shaft M', Fig. 5.

A wheel D may be pivoted on the front part of the shoe C' to assist in carrying the bar, when desired. The push-bar E connects the rocking coupling-piece A' and frame A by pivoted joints, permitting the free movement of the rocking coupling-piece while giving it due support for its work. The lifting-lever F connects the frame A with the rocking coupling-piece A' at b in the usual manner, and does not require a detailed description here. The rocking lever G, attached to frame A and connecting in arm c of the rocking coupling-piece A' by the rod G', is of well-known construction, and need not be further described. The tongue H and seat I are of the style common to mowers, and need not be described. The wheels B B may be ratcheted to the shaft or axle B' in the usual manner. The sprocket-wheel K is fastened upon axle B'. The sprocket-wheel K' is fastened to shaft L' next to its outer bearing. A suitable clutch L², held axially by the spline L on said shaft, moves endwise and gives motion to the bevel-gear L, when desired, as is well understood. The bevel-gear L meshes into pinion M on shaft M', supported transversely in bearings on the coupling-piece A'. On the end of the shaft opposite the pinion M is fastened the crank-wheel M², on which is the wrist-pin m. The pitman N connects the knife O at its head o, which connection, whether by a stud extending outward from the knife-head or a hole in which a right-angled turn of the pitman may enter, may be parallel axially with the wrist-pin on the crank-wheel, and the pitman N may be a single piece, either made of metal or wood, and its connecting ends formed with holes to attach wrist-pins, or an equivalent connection should be axially parallel.

It is readily seen that since all the knife-driving mechanism is supported on the rocking coupling-piece A', to which the finger-bar

is hinged, a solid pitman can be used with parallel connections with the crank-wrist and knife-head, and yet permit of all needed movements of the finger-bar and knife.

5 In operation the mower is drawn forward in the usual manner. The sprocket-wheel K, by means of the chain K², engaging the sprocket-wheel K', turns shaft L', on which is the bevel-gear L, which in turn meshes into
10 bevel-pinion M on shaft M', on the other end of which shaft is the crank-wheel M², on which is the wrist m, to which the pitman N connects, the other end attaching the knife-head o, by which means the usual motion is given
15 to the knife, and the grass or other crop cut, as may be desired.

It is seen by reference to Figs. 1 and 2 that the rocking coupling-piece A' is supported at its outer end by a single bearing pendent
20 from frame A, and permitted at its inner end, to which the finger-bar is attached, to have a vertical and rocking motion, giving to the finger-bar its needed "floating" and tilting movement. It is further seen that all the
25 knife-driving gearing except the first wheel are located on the rocking coupling-piece and outside of the pivoted connection of said piece with the main frame, and hence serve to counterbalance the weight of the finger-bar.

30 I have shown my improvement only in connection with what is technically known as a "chain-drive" mower; but instead of the sprocket-wheels and driving-chain here shown it is readily understood that other driving-
35 gear could be used. It is also readily seen that my improvements here shown on a front-cut mower could also be used on a rear-cut or any other style of mower.

I do not wish to confine myself to the construction here shown and described, as various modifications and changes can be made without departing from the scope of my invention.

What I claim as my invention is—

45 1. A mower-frame supported on the driving-wheels, a rocking coupling-piece pivoted to said frame, substantially in line with the finger-bar and provided with longitudinal and transverse bearings for the shafts of the
50 knife-operating gearing, said gearing being driven by connection made outside the pivot of said coupling-piece to the main frame, and a finger-bar pivoted to the inner end of the coupling-piece, whereby the finger-bar can be
55 raised vertically and tilted upward and downward in unison with the knife-operating gearing, substantially as described.

2. In a mowing-machine, the combination

of a rocking coupling-piece pivoted to the mower-frame substantially in line with the finger-bar, said rocking coupling-piece provided with bearings for the knife-operating gearing, and a finger-bar pivoted to the inner end of said coupling-piece, said gearing located on the end of the coupling-piece outside of the pivot
60 of said coupling-piece to the mower-frame and opposite the finger-bar, whereby the weight of the gearing shall operate to counterpoise the weight of the finger-bar, operating substantially as set forth. 70

3. In a mowing-machine, the combination of a frame supported on the driving-wheels, a rocking coupling-piece pivoted to said frame substantially in line with the finger-bar, said pivot placed between the two ends
75 of the coupling-piece and adapted to permit of a vertical and rocking movement of the ends of said coupling-piece, on the outer end of which is located the knife-operating gearing, and to the inner end the finger-bar is
80 pivoted, whereby the finger-bar can be raised and tilted in unison with the coupling-piece, substantially as specified.

4. The combination of the mower-frame A, the rocking coupling-piece A', pivoted to said
85 frame substantially in line with the finger-bar, the knife-operating gearing located on said coupling-piece outside the pivot to the frame, the push-bar E, pivoted to the frame A, and rocking coupling-piece A', the finger-
90 bar C, pivoted to the coupling A', and a lifting and a tilting device whereby the finger-bar can be lifted and tilted in unison with the knife-operating gearing, substantially as set forth. 95

5. In a mowing-machine, the combination of the frame A, the rocking coupling-piece A', pivoted thereto substantially in line with the finger-bar, the longitudinal shaft L', on which are the sprocket-wheels K' and bevel-
100 gear L, provided with bearings on the outer end of said coupling-piece, and the transverse shaft M', on which are the bevel-pinion M and the crank-wheel M², provided with transverse bearings in proper relation to said longitudinal shaft and gearing, the sprocket-wheel K, and drawing-chain K², the whole
105 operating to drive the knife and to permit the finger-bar and coupling-piece with its superimposed gearing to tilt in unison, substantially as set forth. 110

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Witnesses:

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