

(No Model.)

D. W. KNEISLY.
MOWING MACHINE.

2 Sheets—Sheet 1.

No. 604,353.

Patented May 17, 1898.

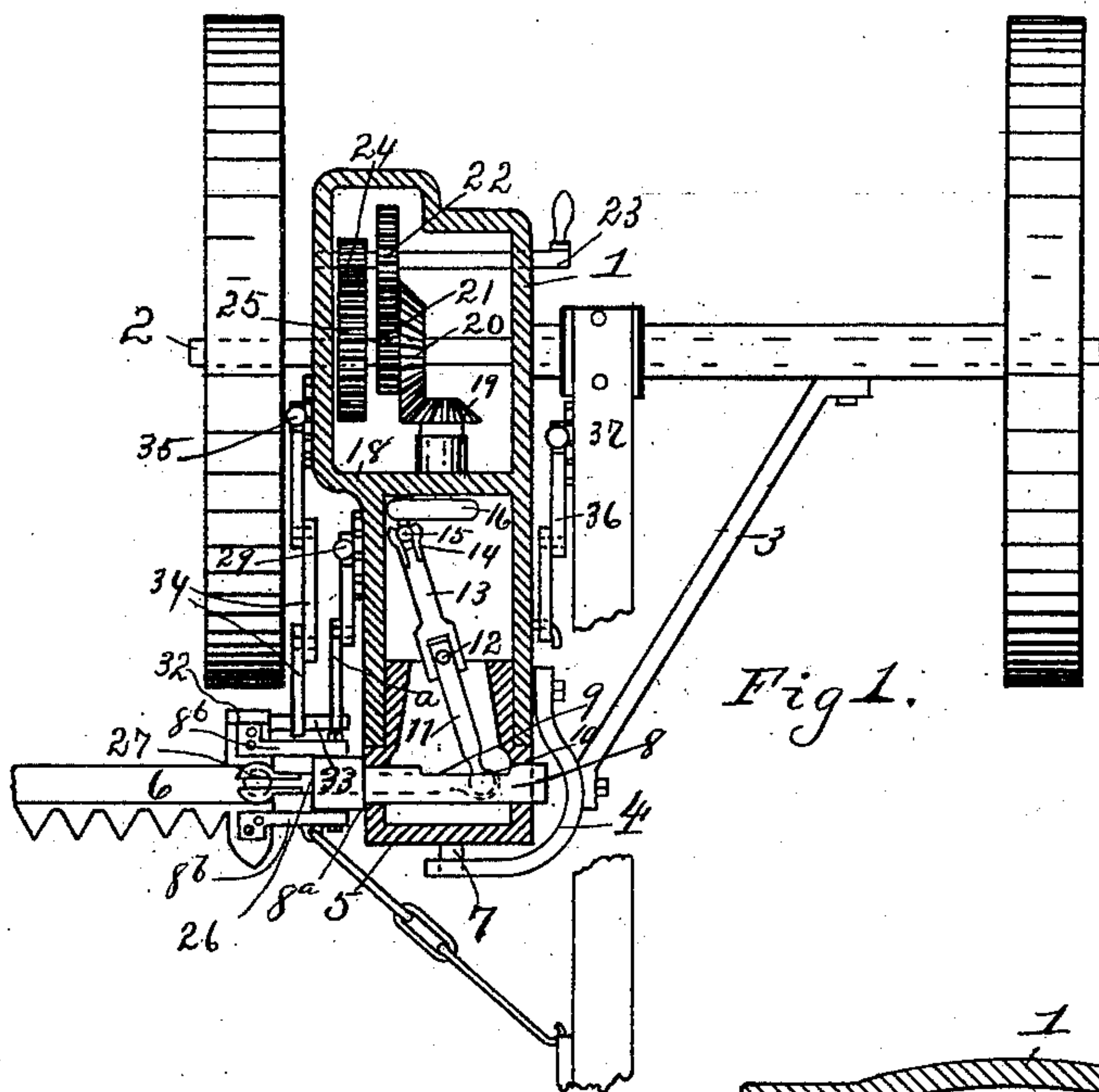


Fig 1.

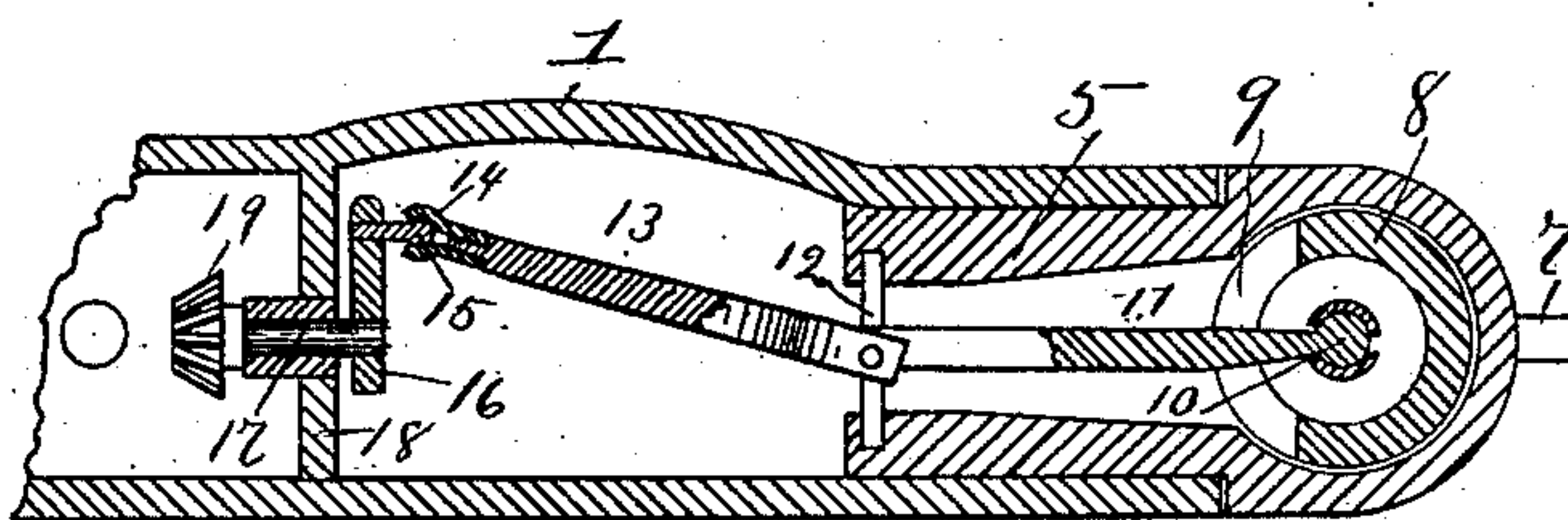


Fig 2.

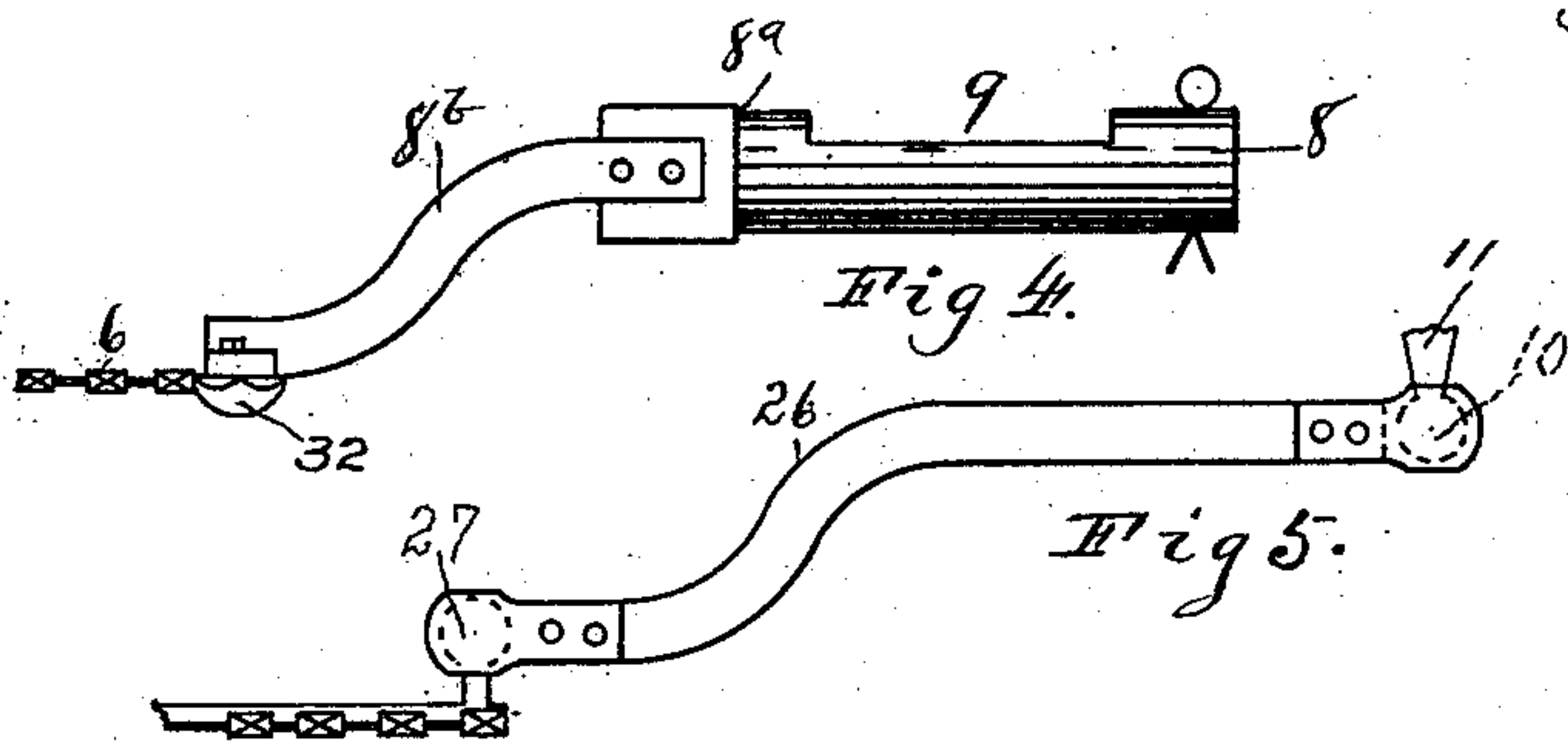


Fig 4.

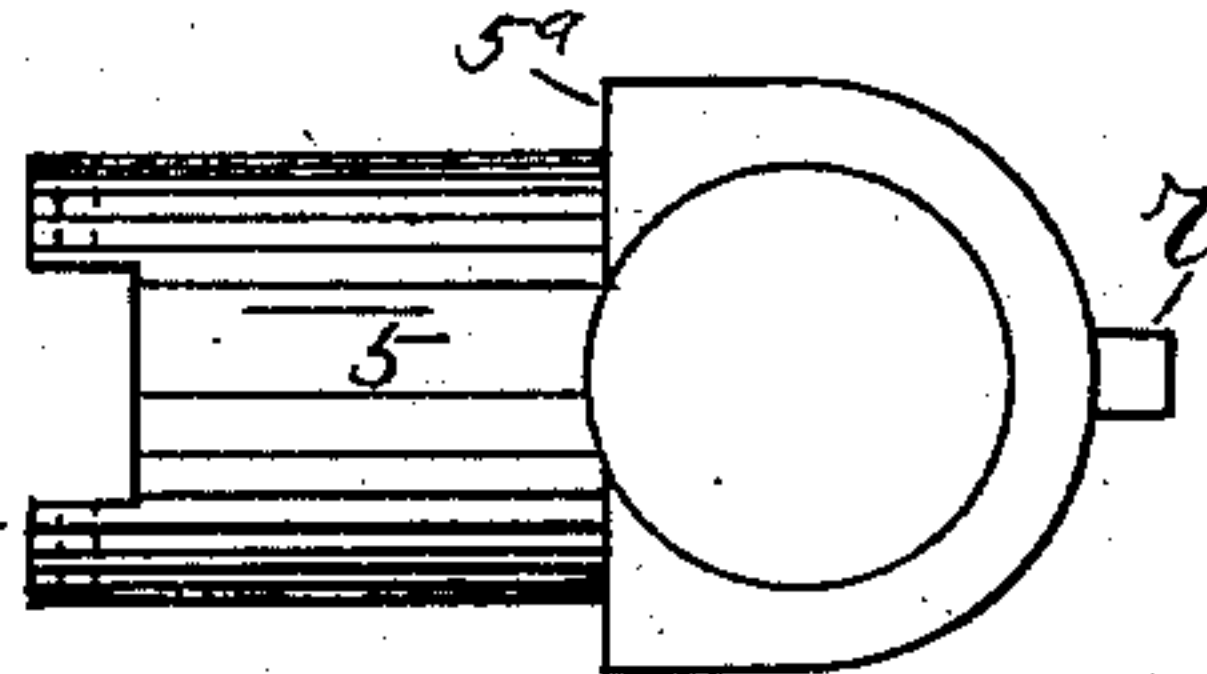


Fig 3.

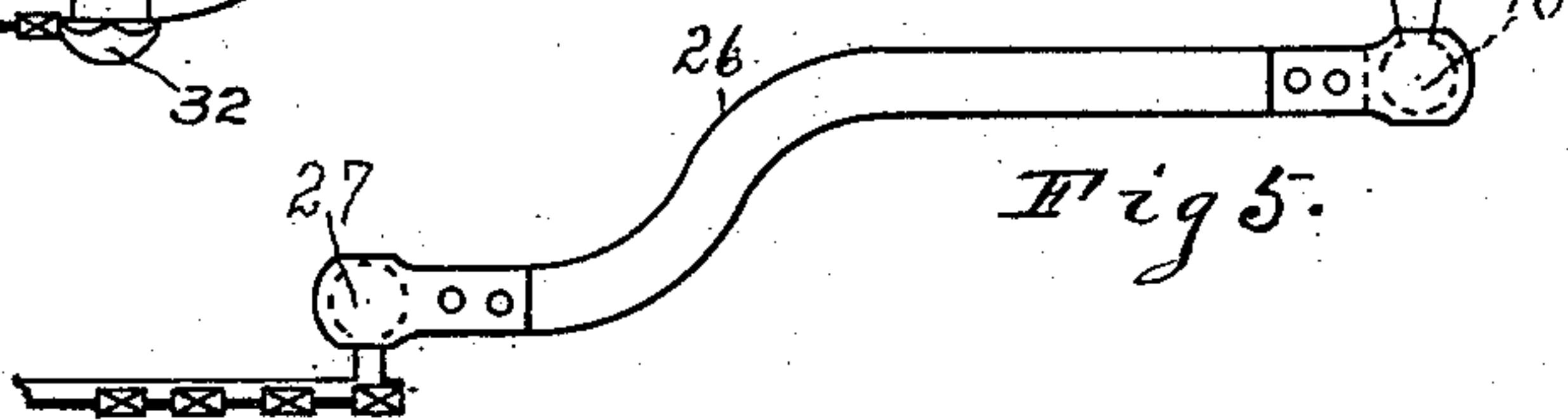


Fig 5.

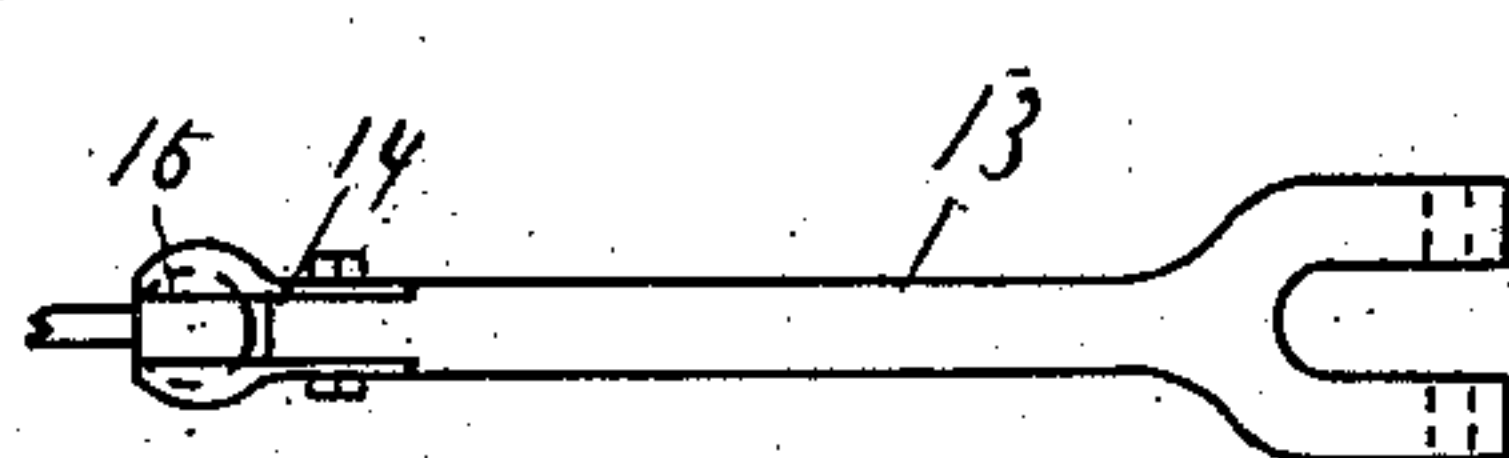


Fig 6.

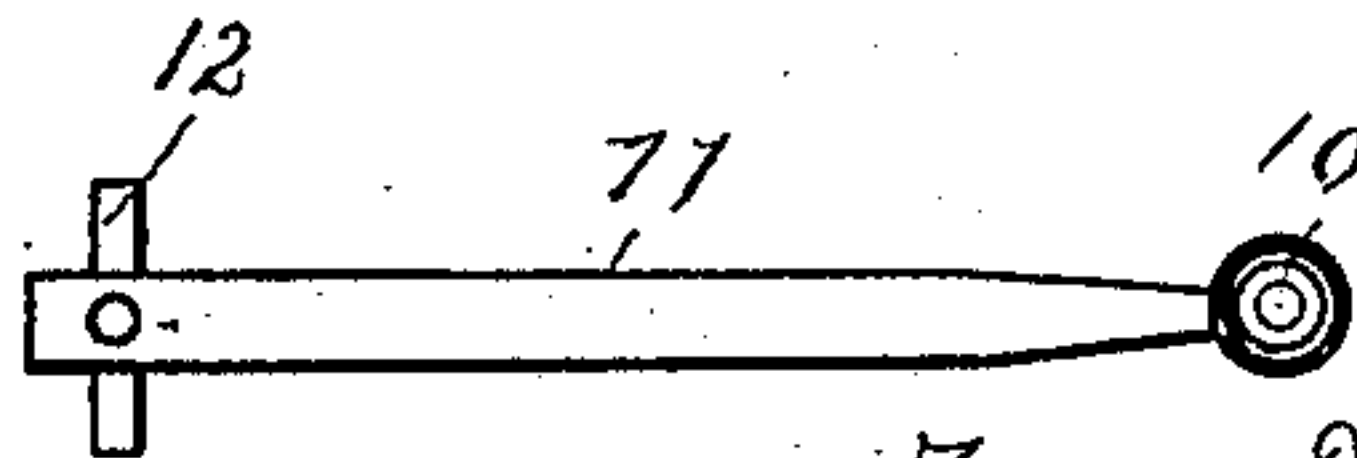


Fig 7.

WITNESSES

Wm. Toss.

H. H. McCarty

D. W. Kneisly,
INVENTOR.

By R. J. McCarty,
his ATTORNEY.

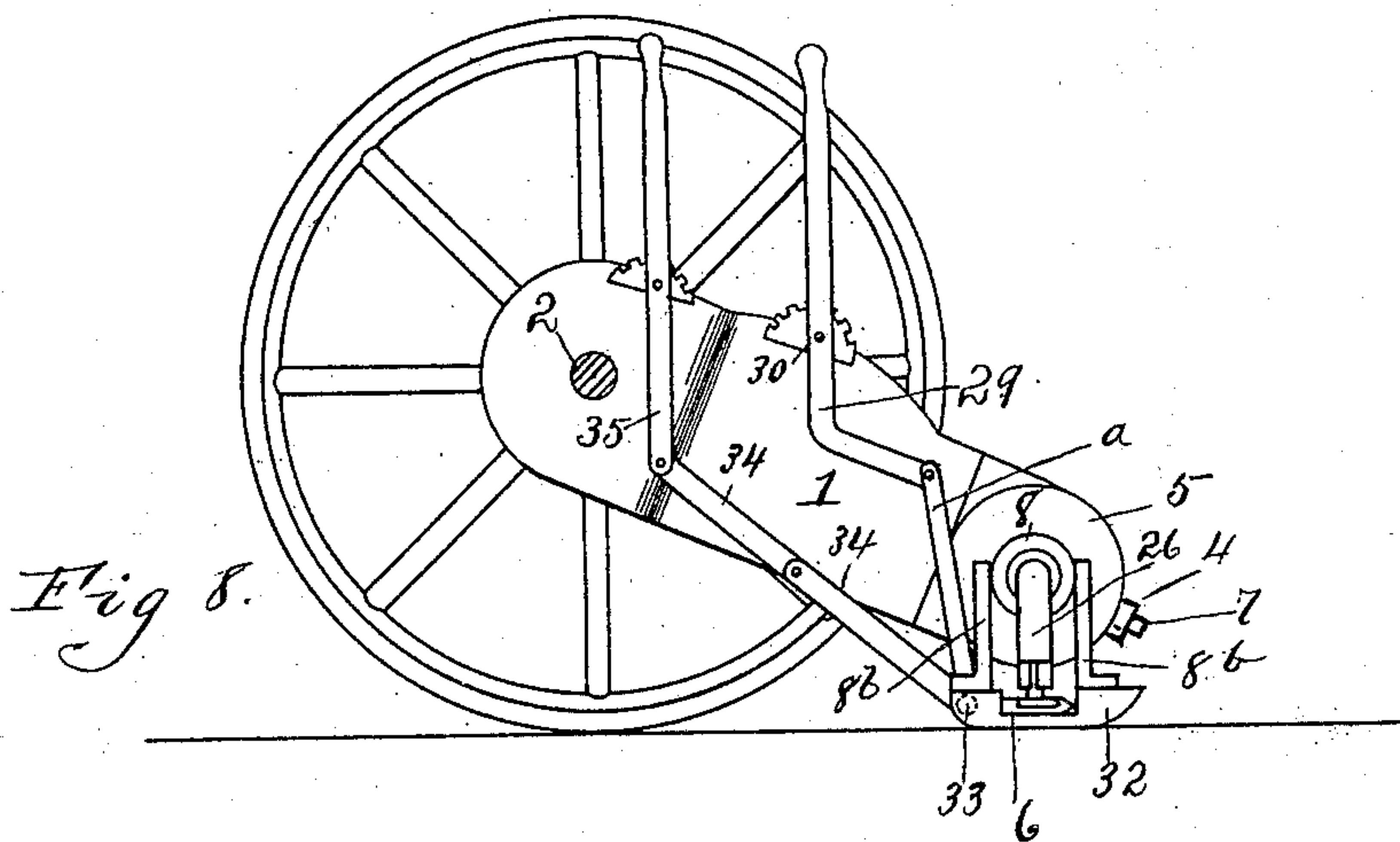
(No Model.)

2 Sheets—Sheet 2.

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Patented May 17, 1898.



Witnesses:

Wm. Voss.
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UNITED STATES PATENT OFFICE.

DANIEL W. KNEISLY, OF JOHNSVILLE, OHIO.

MOWING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 604,353, dated May 17, 1898.

Application filed November 26, 1897. Serial No. 659,792. (No model.)

To all whom it may concern:

Be it known that I, DANIEL W. KNEISLY, a citizen of the United States, residing at Johnsville, in the county of Montgomery and State of Ohio, have invented certain new and useful Improvements in Mowing-Machines; and I do 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, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

This invention relates to new and useful improvements in mowing-machines.

The objects of the invention are to provide means for enabling the sickle-bar to be raised to any angle from the ground by the operator without having to stop the knife or throw the gearing out of mesh and to provide means for driving the sickle truer than is possible by a pitman and crank, thus doing away with the up-and-down movement.

Referring to the accompanying drawings, Figure 1 is a plan view of a mowing-machine, showing in section the casing and a plan view of the interior mechanism. Fig. 2 is an enlarged sectional side elevation of the casing inclosing the sickle-bar mechanism. Fig. 3 is a side elevation of the inside casing. Fig. 4 is a side elevation of the sickle-bar connections. Fig. 5 is a similar view of the ball-socket piece. Fig. 6 is a similar view of the rotating beam. Fig. 7 is a similar view of the ball-and-pivot beam. Fig. 8 is a side elevation of a mower having my invention thereon.

Similar reference characters indicate the same parts in the several views.

1 is the outer case, hinged on the axle 2 and supported at its outer end by a brace-rod 3, which is bolted to said case.

5 is an inner case inclosed in case 1 and adapted to a rotary movement therein, which movement is the same as that of the sickle-bar 6. A pin 7 extends from the outer end of case 5 and projects into an opening in the end of the arm 4, and thereby the said case 5 is prevented from coming out of the outer case. The said arm and pin also prevent the outer end of the sickle-bar from getting out of line.

8 is a tube or case having a slot 9 for the entry of the ball 10 on the end of the reciprocating arm 11. The tube 8 has a circular shoulder 8^a, which prevents its entering the opening in the case 5, and has arms 8^b rigidly attached to it and to the shoe of the sickle-bar. The slotted end of said tube 8 extends into the opening in the case 5. The arm 11 is loosely inclosed in the case 5 and is pivoted to the inner end of the case 5 by a pin 12.

13 is a rotating rod or beam having its outer end bifurcated and pivoted to the arm 11, forming a loose connection between the said parts. The inner end of the rod 13 has a ball-socket 14 to engage a ball 15 on the crank 16, forming a universal joint between the rod and crank upon which the said rod turns. The crank 16 is tight on a shaft 17, that has a bearing 18, which is part of the case, and said crank is driven by a bevel-pinion 19 thereon, which in turn is driven by a larger bevel-wheel 20, sleeved on the axle of the machine. The wheel 20 has a small spur-wheel 21, that meshes with a larger spur-wheel 22, and wheels 20 and 21 are driven thereby. The spur-wheel 22 is fast on a shaft 23, and on the same shaft there is a smaller spur-wheel 24, which is driven by a similar wheel 25 on the main axle. The shaft 23 is adapted to be moved backward and forward in a manner that is common to mowing-machines, and the gearing may thus be thrown in or out of mesh. The detailed parts by which said shaft is moved being old, it has not been deemed necessary to illustrate the same.

26 is a connecting ball-socket link between the ball 10 on the arm 11 and ball 27 on the sickle-bar 6, and thereby said sickle is driven.

29 is a hand-lever connected at 30 to a side of the outer case 1. This lever is connected at its lower end by a link *a* to a pin 33, that projects inwardly from the shoe 32.

34 designates folding links having their lower end connected to said pin 33 and upper end connected with a hand-lever 35, fulcrumed on the side of the case 1. The function of the lever 29 is to raise and lower the sickle-bar and that of the lever 35 is to tilt the said bar in a well-known manner. The link connections of the levers with the pin 33 permit one lever to be operated without any interference from the other. The hand-

lever 36, fulcrumed on the draft-tongue 37, has a connection with the opposite side of the case 1. This lever is to raise and lower the case 1. When the gearing is in motion, a rotary motion is imparted to the rod 13, which transmits a reciprocating movement to the arm 11 and the sickle-bar irrespective of the position of the said bar. In elevating the sickle-bar this movement may continue uninterrupted. In elevating the said sickle-bar the inner case 5 also turns. The shoulder 8^a, abutting with the outer end of the case 1, forms a bearing for the said case 5 to turn on and also prevents said case from entering the outer case 1.

The constructions described in the foregoing may also be used where it is not desired to operate the knife when the bar is raised by placing the mechanism on the left side of the machine instead of the right side and using a long pitman connection between the ball 10 and the sickle-bar and dispensing with the case 5, the tube 8, arms 8^b, and connecting the sickle-shoe to the framework commonly used on long pitman-mowers.

Having described my invention, I claim—

1. In a mowing-machine, the combination with the casing 1, of an inner casing 5 mounted to rotate therein, a tubular case 8 mounted in the outer end of said case 5, the said tubular case 8 having a slot in the portion that is inclosed in the case 5, a link 26 inclosed in the case 8, and having a ball-and-socket connection with the sickle-bar, an arm 11 having a ball-and-socket connection with said link 26, and a rotating beam to impart a reciprocating movement to said arm, all arranged substantially as herein shown and described.

2. In a mowing-machine, the combination

with the case 1 mounted on the axle of the machine, and a crank mounted in said case with gearing to drive it, of a case 5 loosely mounted in the outer end of said case 1, a tube or case 8 mounted in the outer end of said case 5 and having an attachment with the shoe of the sickle-bar, an angular link 26 inclosed in said case 8 and having a universal-joint connection with the sickle-bar, a reciprocating arm 11 having a fulcrum in the case 5 and a universal-joint connection with the link 26, a rotating beam 13 having a pivotal connection with said arm 11, means for elevating the sickle-bar while the same is in motion, substantially as shown and described.

3. In a mowing-machine, the combination with the case 1, of an inner case 5 rotatably mounted in the outer end of said case 1, a tubular case 8 loosely mounted in the outer end of said case 5 in a transverse position, the said case 8 having a slot in the portion that is inclosed in said case 5, and arms 8^b adapted to be attached to the shoe of the sickle-bar, a reciprocating arm 11 having a fulcrum on the inner end of the case 5, and ball-and-socket connections between said arm and the sickle-bar, a rotating beam 13 having a flexible connection with said arm 11, a crank having a ball-and-socket connection with said beam, and means for driving said crank, and means for elevating the sickle-bar, substantially as shown and described.

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

DANIEL W. KNEISLY.

Witnesses:

A. J. FIORINI,

A. H. McCARTY.