

No. 762,919.

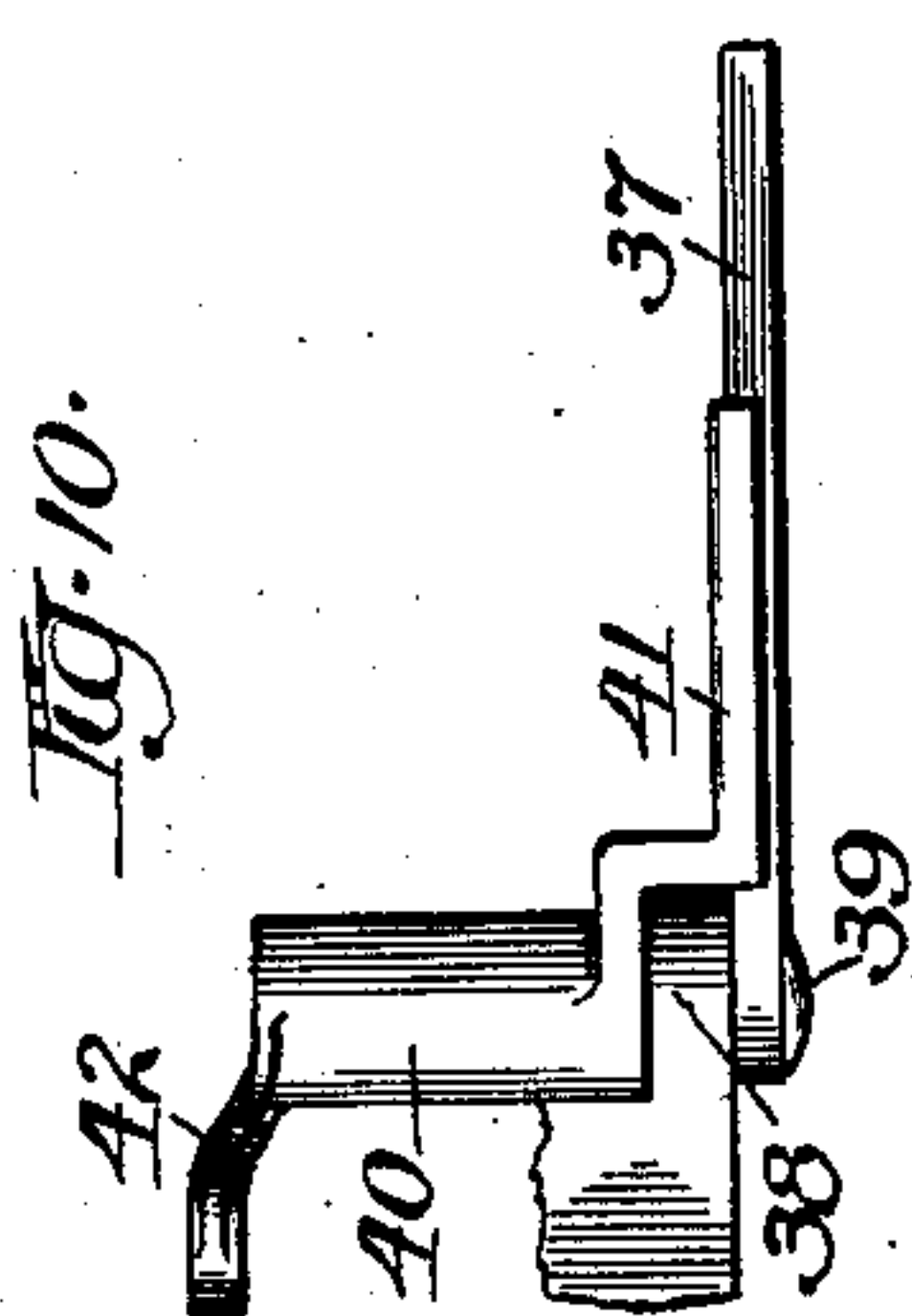
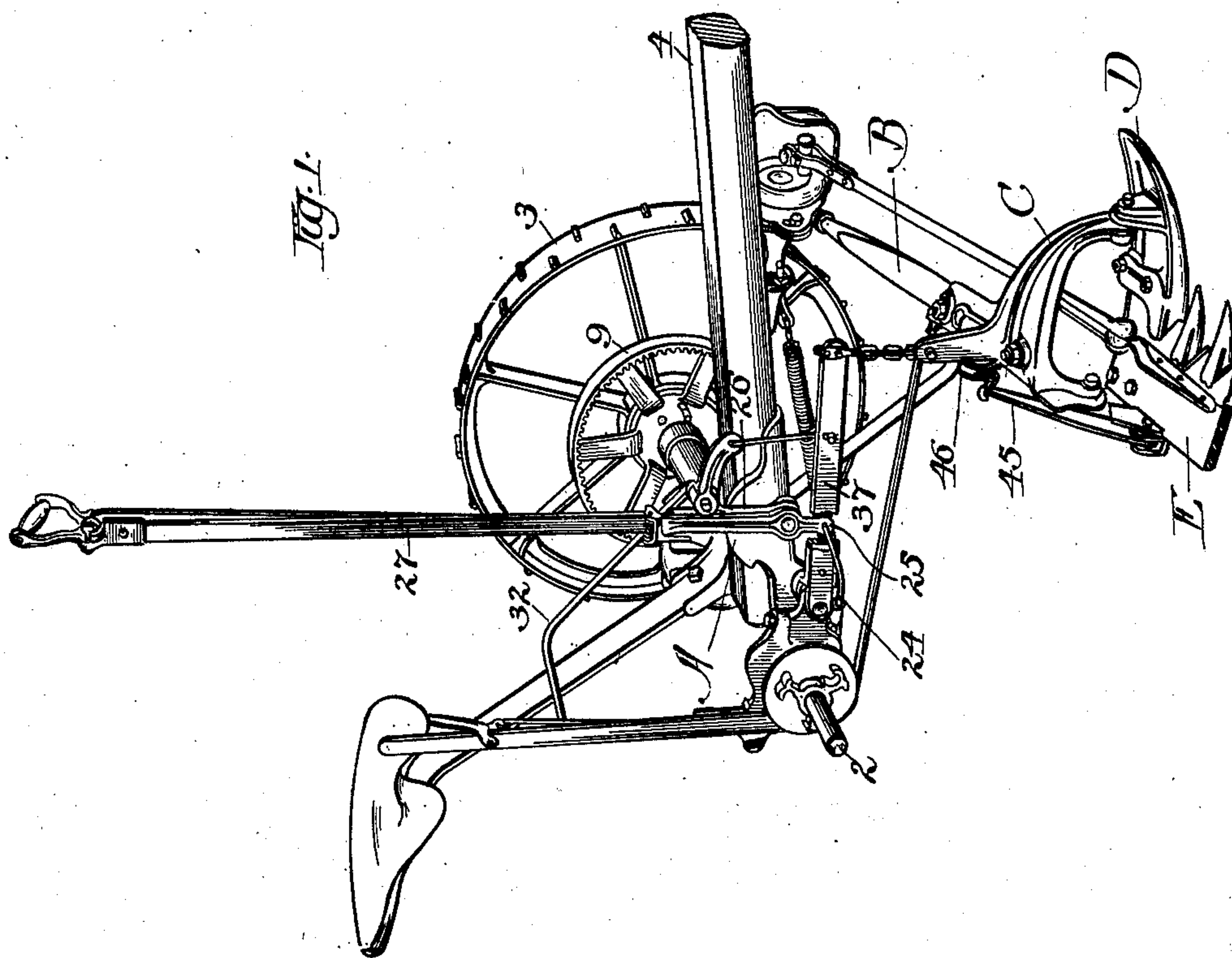
PATENTED JUNE 21, 1904.

J. W. LATIMER.
MOWING MACHINE.

APPLICATION FILED MAR. 14, 1904.

NO MODEL.

5 SHEETS—SHEET 1.



Witnesses:
J. H. Alfreds.
M. A. Sweeney.

John W. Latimer, Inventor.
By J. C. Warner
Atty.

No. 762,919.

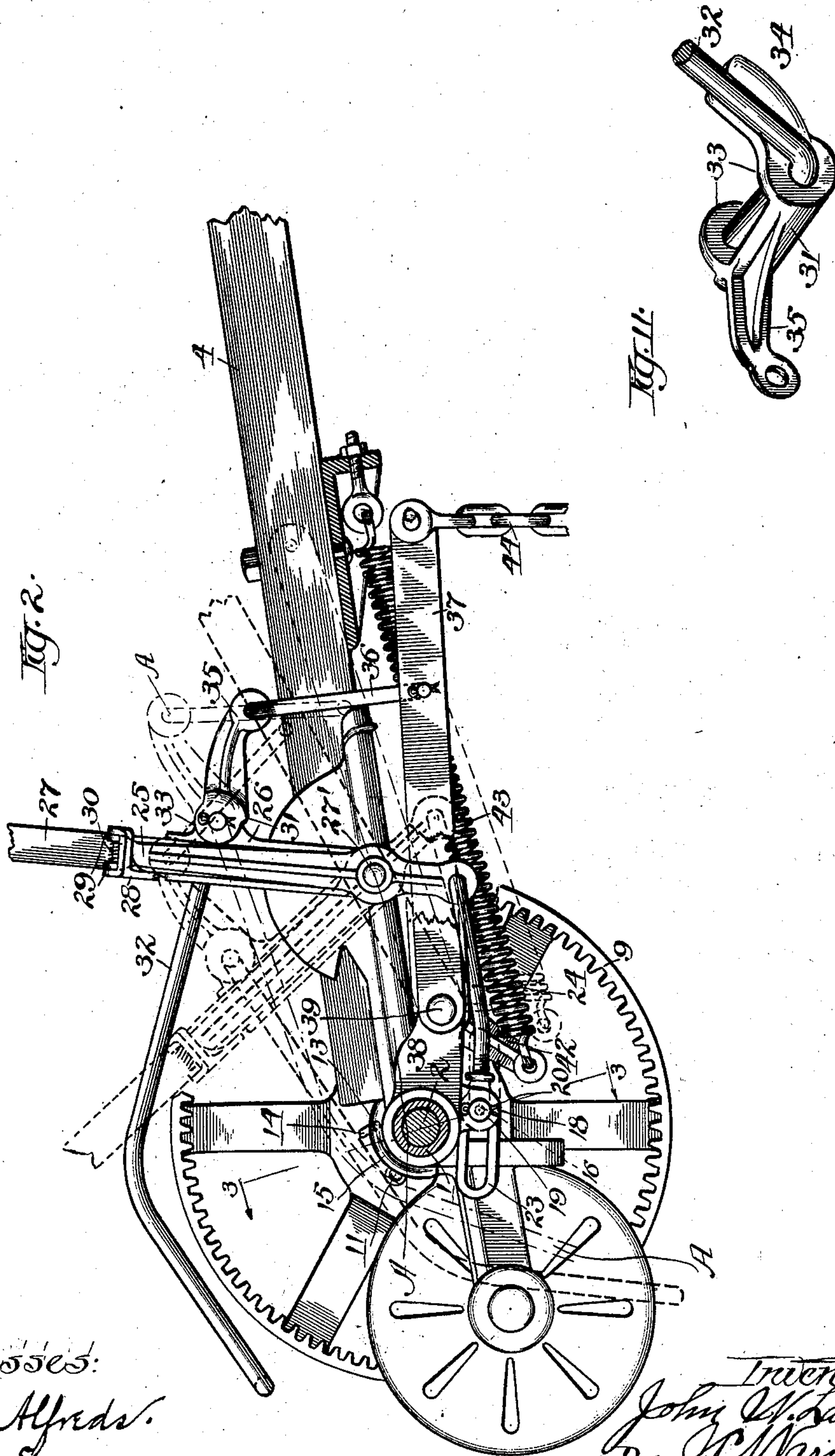
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NO MODEL.

5 SHEETS—SHEET 2.



Witnesses:
P. F. Alford.
M. A. Sweeney.

Inventor:
John W. Latimer.
By J. C. Varney.
Atty.

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5 SHEETS—SHEET 3.

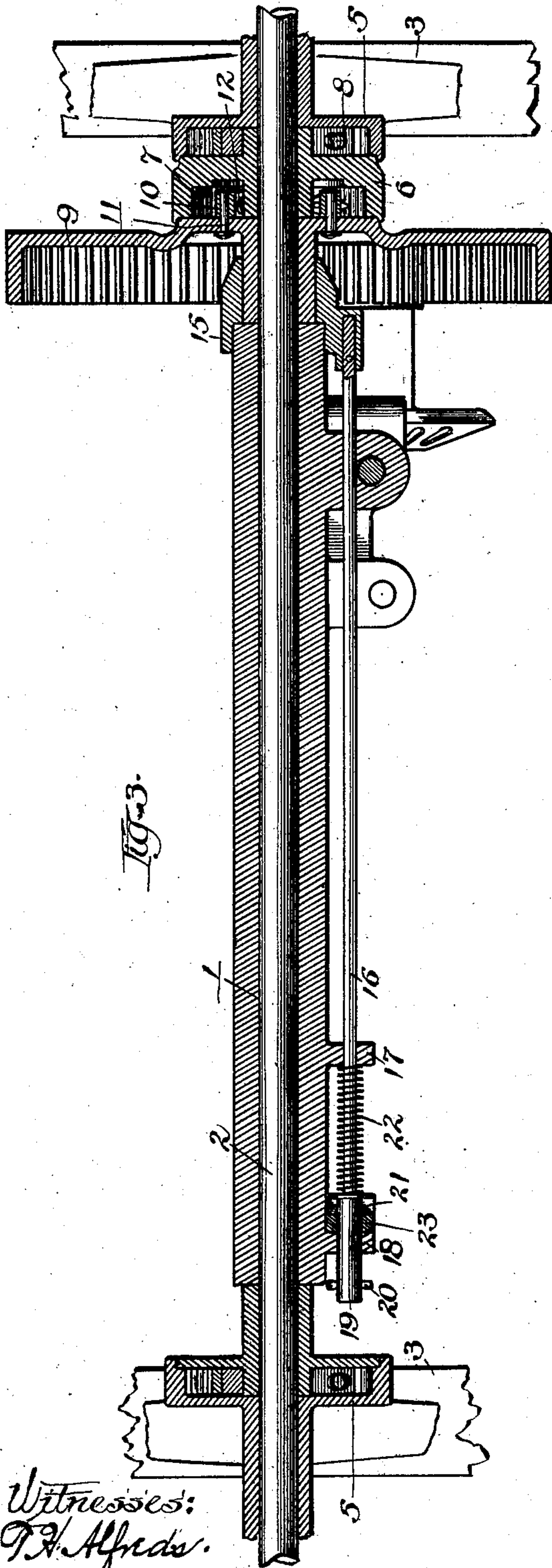


Fig. 3.

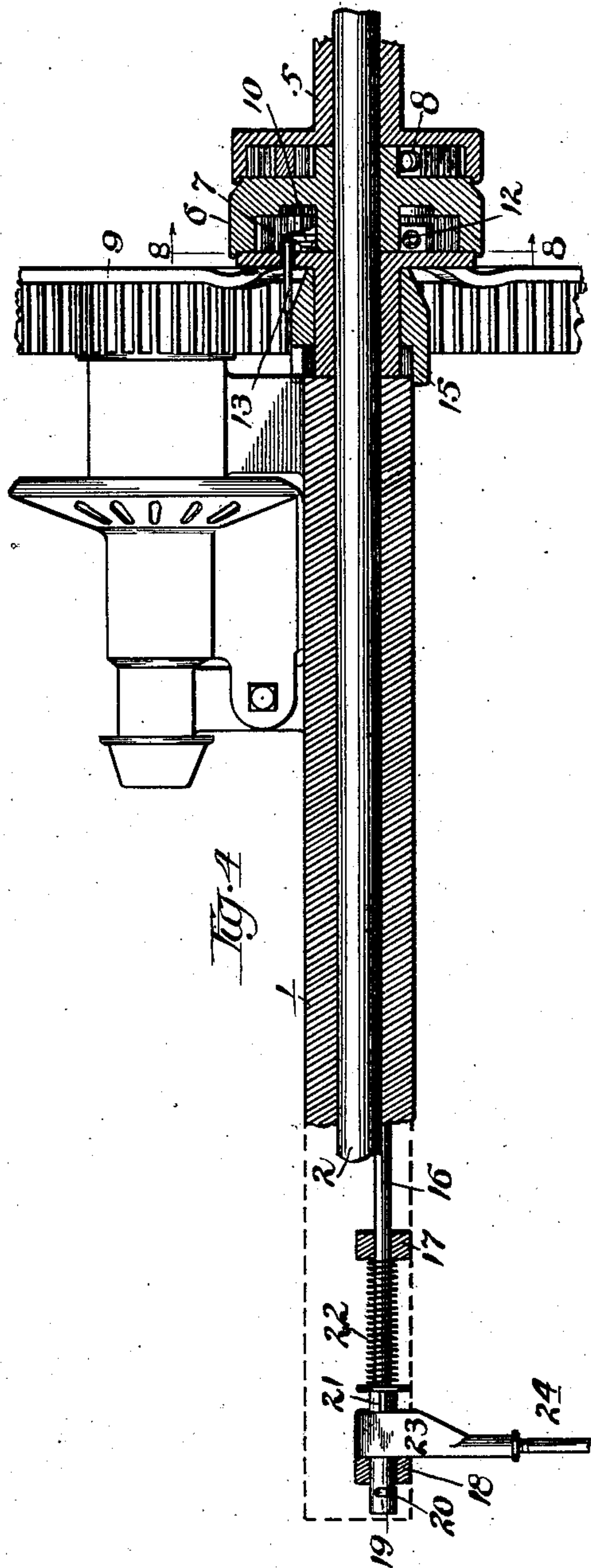


Fig. 4.

Witnesses:
T. A. Alfreds.
M. A. Sweeney.

Inventor:
John W. Latimer
By J. C. Warner
Atty.

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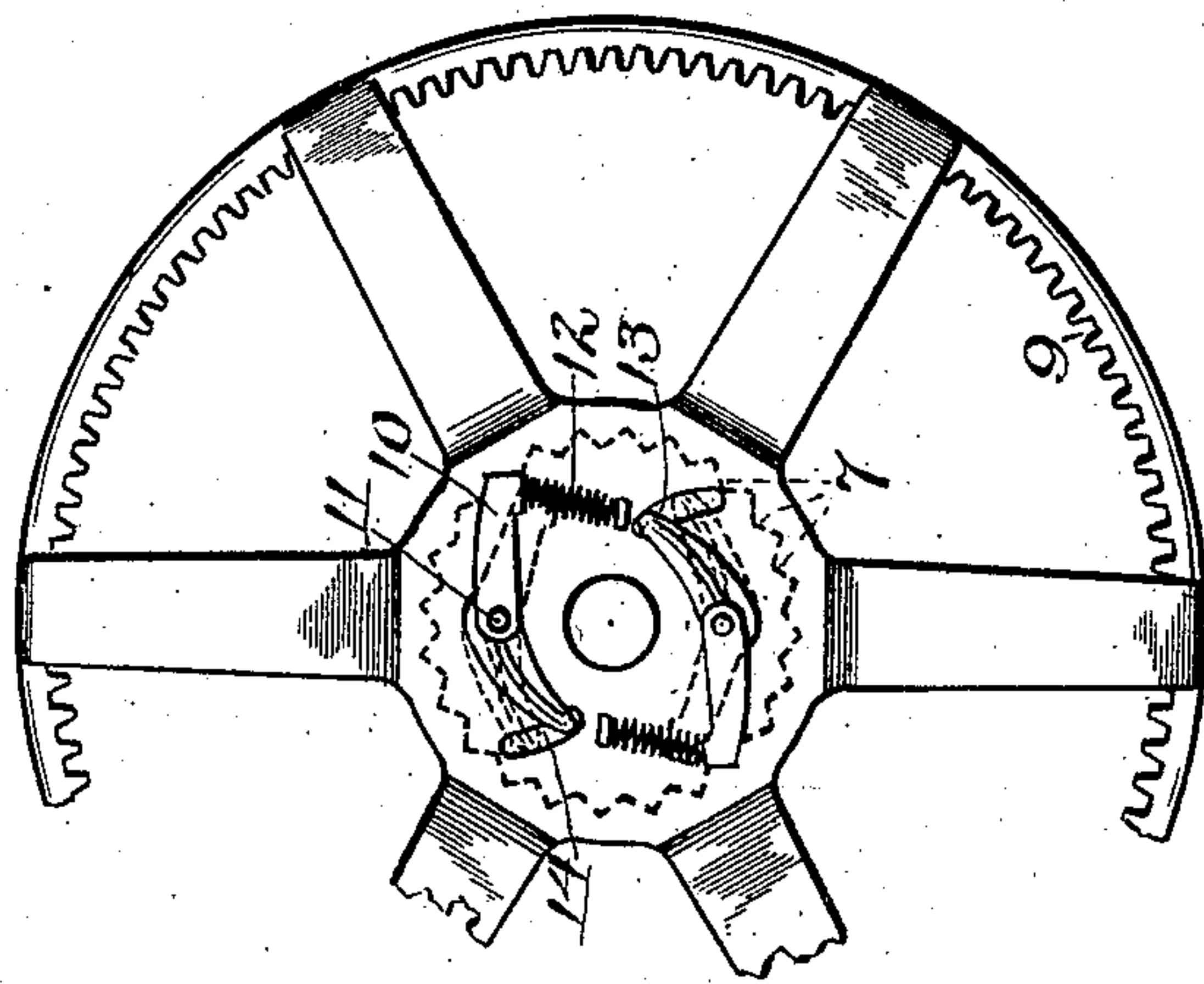


Fig. 7.

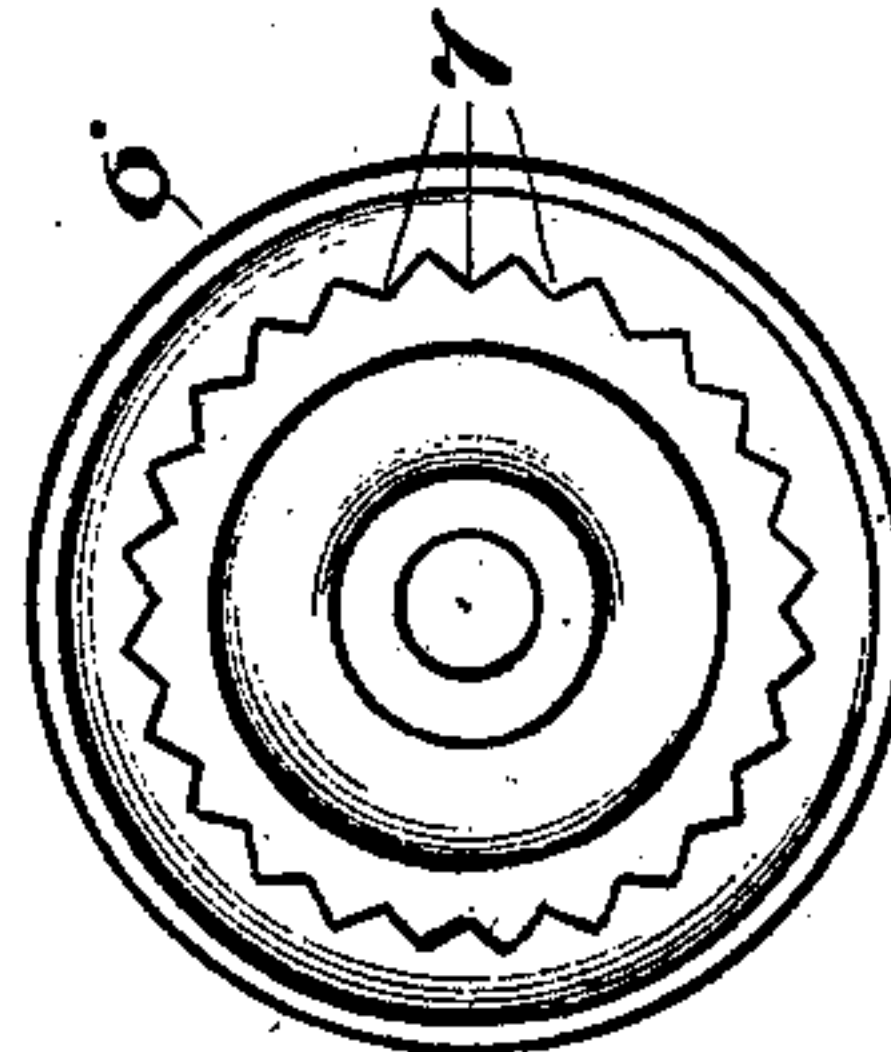


Fig. 8.

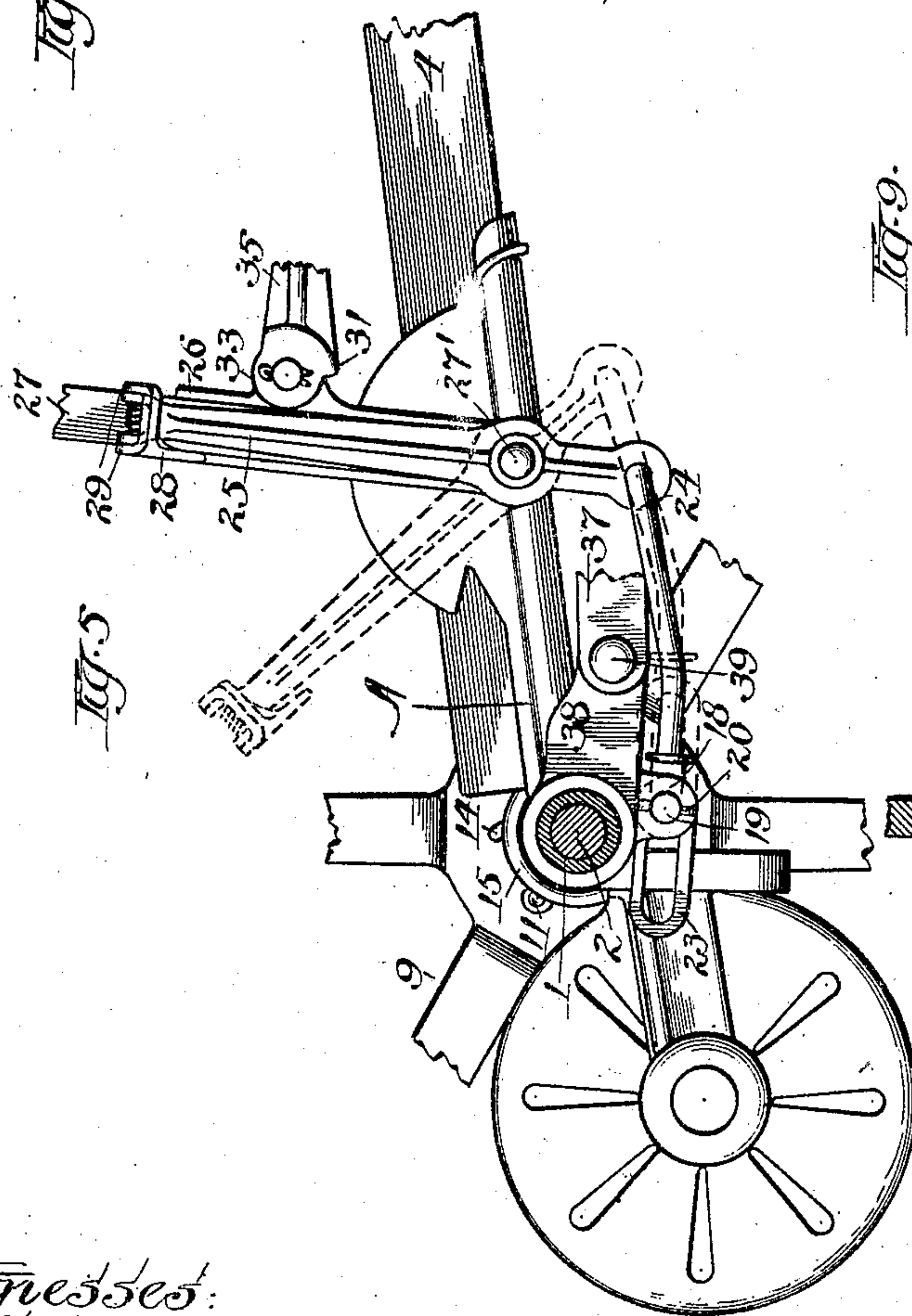


Fig. 5.

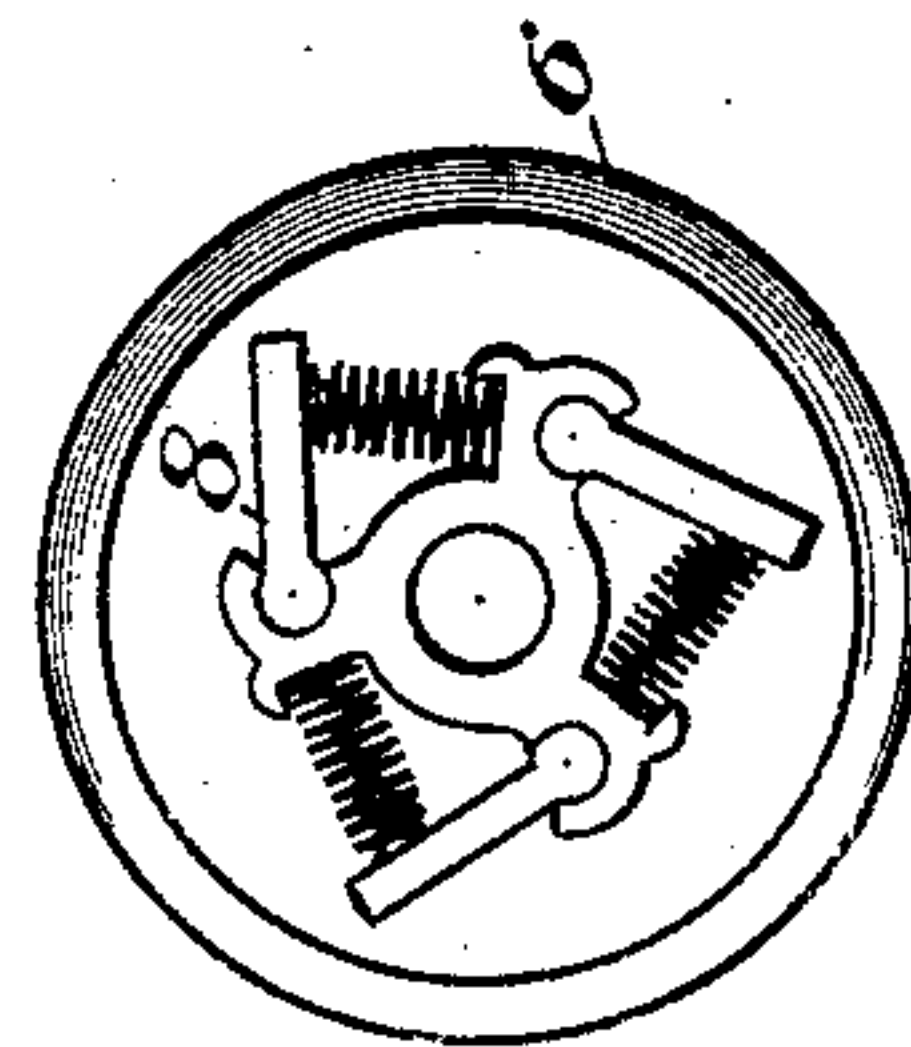


Fig. 9.

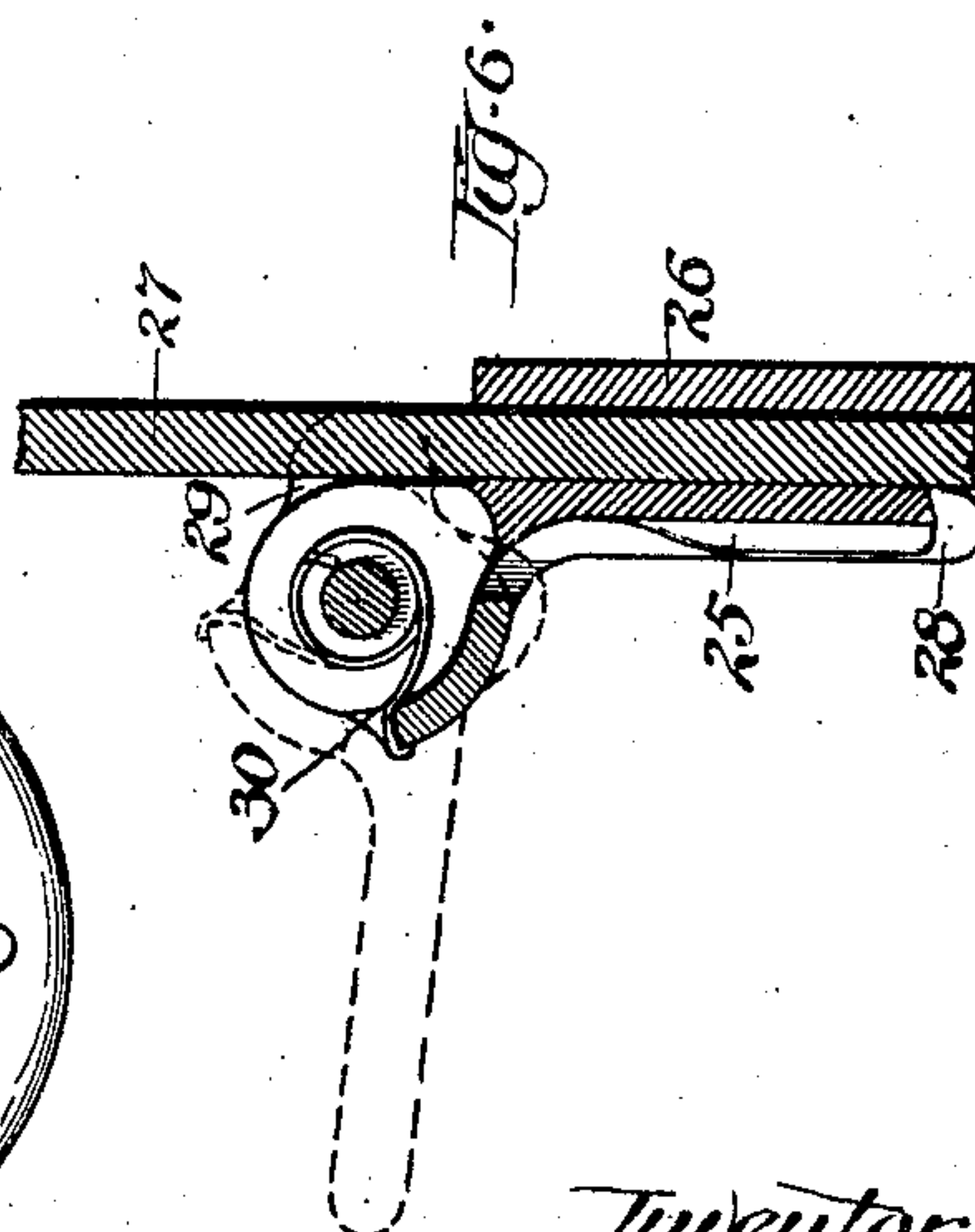


Fig. 6.

Witnesses:
P. H. Alfreds.
M. A. Sweeney.

Inventor
John W. Latimer
By J. C. Warner
Atty.

No. 762,919.

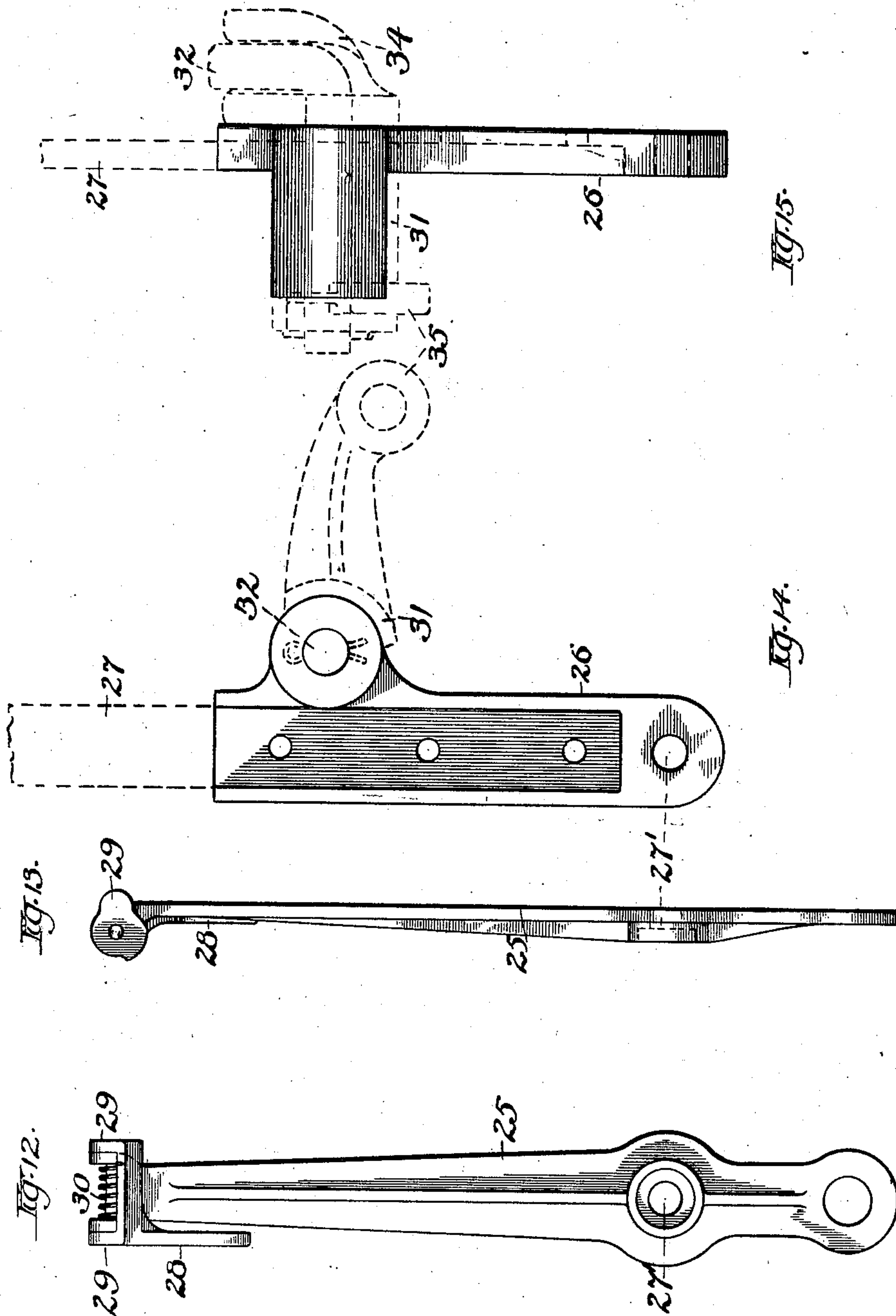
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APPLICATION FILED MAR. 14, 1904.

NO MODEL.

5 SHEETS—SHEET 5.



Witnesses:

P. H. Alfred

J. N. Daggett

By

Inventor:
John W. Latimer,
J. C. Warner,
Atty.

UNITED STATES PATENT OFFICE.

JOHN W. LATIMER, OF CHICAGO, ILLINOIS.

MOWING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 762,919, dated June 21, 1904.

Application filed March 14, 1904. Serial No. 197,989. (No model.)

To all whom it may concern:

Be it known that I, JOHN W. LATIMER, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Mowing-Machines, of which the following is a complete specification.

This invention is particularly applicable to that class of mowing-machines in which the finger-bar of the cutting apparatus is raised to a substantially vertical position while the machine is in operation, and more particularly to such a type when a long pitman is used in connection therewith. It is a well-understood fact that in this class of mowers unless a jointed pitman is used it is necessary to throw the cutting apparatus out of operation as the finger-bar is being raised toward a vertical position.

The purpose in view in this improvement is to secure simplicity in construction by dispensing with a large number of the parts usually used and leaving no moving parts in engagement to wear and produce noise when the machine is not cutting.

A further object of this invention consists in providing a simple and effective arrangement of the lifting mechanism whereby the gear-shipping device may be connected with or rendered independent of the lifting mechanism and the hand-lever and primary lever may remain stationary and yet permit the coupling-frame to rise and fall.

Referring to the drawings, Figure 1 is a perspective of the principal parts of a mower, showing the application of my improvement thereto. Fig. 2 represents a longitudinal section of a mower, taken on a line to show the lifting mechanism and its relation to the gear-shipper, as well as the other cooperating parts. Fig. 3 is a transverse section of the mower-frame axle and parts mounted thereupon, a section being taken on a plane slightly oblique, as indicated by the line 3 3 in Fig. 2. Fig. 4 is a corresponding transverse section taken on a horizontal plane. Fig. 5 is a fragmentary detail showing the relation and operation of the primary and secondary levers, the secondary lever being shown in dotted lines in its rearward position and in connection with the

gear-shipping mechanism. Fig. 6 is a transverse section taken through a portion of the hand-lever, the upper portion of the secondary lever, and a portion of the primary lever, showing the means by which the secondary lever is secured at will to the primary lever. Fig. 7 is an enlarged view of the annular gear which constitutes the main driving-gear of the mower, showing the driving-dogs pivotally mounted thereon. Fig. 8 is a view looking stubbleward of the loose ratchet mounted upon the main driving-axle of the mower adjacent to the annular gear, the view being taken as indicated by the line 8 8 and arrows as shown in Fig. 4. Fig. 9 is a view of same from the other side. Fig. 10 is a detail plan of the bell-crank lever, one arm of which is secured to the rear end of the counterbalancing-spring. Fig. 11 is a detail perspective of the casting forming the forward part of the two-part foot-lever and which is mounted upon the primary lever. Fig. 12 is a side elevation of the secondary lever. Fig. 13 is a front elevation of same. Fig. 14 is a side elevation of the primary lever, and Fig. 15 is a front elevation of same.

In the drawings, A designates the main frame of the mower, B the coupling-frame, C the swivel hinge or yoke, D the inner shoe, and E the finger-bar secured thereto, all of which parts may be of the usual type.

1 designates the portion of the main frame of the mower which forms the bearing for the axle thereof. 2 represents the main axle of the mower journaled therein, 3 the mower-wheels mounted upon the ends of said axle, and 4 the tongue.

5 represents the ratchet-gear usually made integral with the mower-wheels 3, and on the stubbleward end of the axle 2, adjacent to the said ratchet 5, is loosely sleeved an annular or loose ratchet 6, as shown in Fig. 8, provided with teeth 7. On the back of said loose ratchet 6 are mounted the pawls 8, adapted to engage the ratchet-teeth on the said ratchet 5, thereby imparting movement from the mower-wheel to said ratchet 6.

9 is the large annular driving-gear, as shown in Fig. 7, loosely sleeved upon the axle 2, and on the back of which are mounted the ratchet-

pawls 10 10, the pivotal bearings thereof being at the points 11 11. These ratchets are held normally in an engaging position with respect to the loose ratchet 6 by means of the
5 springs 12 12.

On the ends of the pawls 10 opposite to the ends at which the springs 12 are located are the pins 13, longitudinally disposed and extending through slots 14 in the web of the
10 said gear, as shown in Figs. 7 and 4. These pins 13 extend some distance through the web of said wheel and are held normally by the said springs 12 toward the center of the axle 2. On the hub of the annular gear 9 is jour-
15 naled the gear-shipper cone 15, the said cone being stationary, rotatively speaking, but susceptible of longitudinal movement. The pins 13 on the pawls 10 bear upon the conical surface of the cone, as shown in Fig. 4. It
20 is thus seen that as the cone 15 is given an endwise movement pressing the pins from the center the engaging end of the pawl will be pressed to the center and disengaged from the ratchet. Movement of said cone in the
25 opposite direction will have the reverse effect—that is, the pin will be permitted to move toward the center of the axle, and the springs 12 will force the pawls 10 into engagement with the teeth 7 of the loose ratchet
30 6. The ratchets 5, integral with either mower-wheel, it is well understood, renders said wheels independently rotative.

To effect the endwise movement of the gear-shipper cone 15 the gear-shipper rod 16 is se-
35 cured thereto and lies beneath and forward of the axle, as shown in Figs. 1, 2, and 3, the said rod being supported in the lugs 17 and 18, projecting downwardly from the main frame of the mower and preferably integral therewith.
40 Secured to the grassward end of the rod 16 and journaling in the lug 18 is the sleeve 19, secured to said rod by means of the cotter-pin 20. This sleeve 19 is provided on its inner end with the shoulders 21, between which shoulders and
45 lug 17 is interposed the coil-spring 22, which tends normally to exert pressure in the direction grassward with respect to the machine or to the left with respect to Figs. 2 and 3. Be-
50 tween the said shoulders 21 and the fixed lug 18 is placed the shipper-cam 23, having the inner face for a part of its length parallel with the outer face and a part of its length convergent thereto, so that as said shipper-cam 23 is moved back and forward on its sup-
55 port the spring 22 will cause the shoulders 21 to follow the inner surface, thus producing longitudinal movement of the said shipper-rod 16. To the shipper-cam 23 is secured the rod or
60 link 24, which extends forwardly and engages an aperture on the lower end of the secondary lever 25, so that movement of this lever will operate to produce longitudinal movement of the gear-shipper rod, thus disengaging the main driving-gear 9 from its driving-ratchet 6.
65 The lifting mechanism consists, essentially,

of the primary lever 26, pivotally supported at 27' to the frame of the mower. Rigidly secured to the primary lever 26, and, in effect, as one piece therewith, is the hand-lever 27. The secondary lever 25 has its pivotal axis 70 coincident with the pivotal axis of the primary lever and vibrates in a plane parallel and adjacent thereto. Usually this secondary lever is secured to and moves with the primary lever 26, but may be made to move in-
75 dependent thereof in the following manner: A small latch-lever 28 is mounted on the upper end of the secondary lever 25, as shown in Fig. 6, and this latch-lever is provided with the two laterally-disposed ears 29 29, 80 adapted to embrace the hand-lever 27 of the primary lever 26 when said latch-lever 28 lies thereagainst, as shown in full lines in Fig. 6. These ears or lugs, however, may be brought to a disengaging position with respect to the
85 said hand-lever 27 and primary lever by throwing it to an outward position, as indicated by dotted lines in said Fig. 6. A spring 30 tends normally to hold the latch-lever 28 against the primary lever, and to the lower end of
90 the said lever is connected the clutch-ship-ping link 24.

Pivotally mounted upon the primary lever at a point forward of the pivotal axis thereof when in normal working position is the two-
95 part foot-lever, the two parts forming a lock or one-way joint. The forward one of these joints 31 (see Figs. 2 and 11) is provided with apertures which receive and form bearings for the forward end of the rear portion 32 of
100 said foot-lever. A lug or shoulder on the primary lever is received intermediate of the end portions or lugs 33 of the said joint 31, while the arm 34 operates as a rearward sup-
105 port and, in effect, forms a one-way joint with the rod 32, which forms the rear member of said foot-lever, as clearly indicated in Figs. 2 and 11. The purpose of having this lock or one-way joint is to permit continued rearward move-
110 ment of the hand-lever 27 after the rear member 32 of the foot-lever contacts the mower-frame, as shown in Fig. 2. The forward joint 31 of the foot-lever is provided with a forwardly-projecting arm 35, which connects, by
115 means of the link 36, with the bell-crank lever 37. This bell-crank lever 37 is pivoted to the downwardly and forwardly projecting lug 38, integral with the main frame of the mower, the pivotal axis being at the point 39. This bell-
120 crank lever 37 is comprised of two parts—viz., the forwardly-projecting arm 37 and the bell-crank bearing 40—the pivotal centers of both being coincident. (See plan view in Fig. 10.) The bearing 40 of the bell-crank is provided with a reinforcing-arm 41, which engages the
125 forwardly-projecting arm 37 of the bell-crank, and 42 is a downwardly and rearwardly projecting arm on the inner end of said bearing 40, which engages the counterbalancing-spring 43. The forward end of the arm 37 of the
130

bell-crank lever connects, by means of the chain 44, with the arm 45, which is secured to the finger-bar E of the mower, the said chain 44 passing beneath the sheave 46 on the coupling-frame B.

The operation of the device is as follows: When it is desired to raise the cutting apparatus an amount sufficient to clear a slight obstruction or enough to permit of turning corners, it may be accomplished without disengaging the clutch by means of the foot-lever 32 and the bell-crank lever 37, the primary lever 26 and the secondary lever 25 remaining stationary, and hence no movement resulting in the gear-shipping link 24, while the said foot-lever and bell-crank lever will be moved to the position A A, as shown in dotted lines in Fig. 2.

If it is desired to raise the cutting apparatus toward a vertical position, then it becomes necessary to disengage the clutch mechanism, which is accomplished by moving the hand-lever 27 and the primary lever connected therewith rearwardly. The secondary lever 25, moving with the primary lever, will simultaneously actuate the gear-shipping mechanism through the gear-shipping link 24, the gear-shipping cam 23, the rod 16, the gear-shipping cone 15, and other intermediate members hereinbefore described.

If it is desired to raise the cutting apparatus by means of the hand-lever 27 without disengaging the clutch mechanism, the latch-lever 28 on the secondary lever 25 is thrown to the position shown in dotted lines in Fig. 6 or to a position in which the ears or lugs 29 will not engage the hand-lever 27, which will thus permit the hand-lever to be moved without actuating the said clutch-shipping mechanism. On the other hand, if it is desired to throw the cutting apparatus out of operation without raising it to a position in which it will be done automatically, it can also be accomplished by disengaging the latch-lever from the hand-lever 27, after which the said hand-lever may be moved without affecting the gear-shipping mechanism.

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

1. In a mower, in combination, the lifting mechanism comprising a primary lever, a secondary lever having its pivotal axis coincident therewith and releasably secured thereto, a gear-shipping cone mounted on the main axle of said mower and means controlled by the said secondary lever for actuating the said gear-shipping cone, substantially as and for the purpose described.

2. In a mower, in combination, the lifting mechanism comprising a primary lever, a secondary lever having its pivotal axis coincident therewith and releasably secured thereto, a gear-shipping cone mounted on the axle of

said mower, a longitudinally-movable gear-shipping rod in connection with said cone and a link having a cam-surface on the rear end thereof for imparting movement to the said gear-shipping rod, said link actuated by the said secondary lever, substantially as and for the purpose described.

3. In a mower, in combination, a coupling-frame, cutting apparatus secured thereto, and means for controlling the position of the said coupling-frame and cutting apparatus said means comprising a primary lever pivotally supported upon the frame of the mower, a foot-lever having its pivotal axis of support upon the said primary lever and forward of the pivotal axis thereof, a secondary lever having its axis of movement coincident with that of the primary lever to which it is releasably secured, a bell-crank lever having its pivotal axis independent of the axis of either the said primary lever or the said foot-lever, one arm of the said bell-crank lever being engaged by the counterbalancing-spring and the other arm having connection with the forward end of said foot-lever and the coupling-frame, and a counterbalancing-spring interposed between one arm of said bell-crank lever and a fixed part of the mower-frame, substantially as and for the purpose described.

4. In a mower, in combination, a coupling-frame, cutting apparatus secured thereto, and means for controlling the position of the said coupling-frame and cutting apparatus, said means comprising a primary lever pivotally supported upon the frame of the mower, a foot-lever consisting of two parts forming a lock or one-way joint said foot-lever having its pivotal axis of support upon the said primary lever and forward of the pivotal axis thereof, a secondary lever having its axis of movement coincident with that of the primary lever to which it is releasably secured thereby rendering it independently vibratable with respect thereto, means for securing at will said secondary lever to the primary lever, a bell-crank lever provided with one downwardly and one forwardly projecting arm, the pivotal axis of said bell-crank lever being independent of the axis of support of either the said primary lever or the foot-lever, and connecting means interposed between the forwardly-projecting arm of the said bell-crank lever and the said foot-lever and also connecting means between the said arm and the cutting apparatus, and a counterbalancing-spring interposed between the downwardly-projecting arm of said bell-crank lever and a fixed part of the frame of the machine, substantially as and for the purpose described.

JOHN W. LATIMER.

Witnesses:

MARGARET A. SWEENEY,
J. C. WARNES.