

No. 773,926.

PATENTED NOV. 1, 1904.

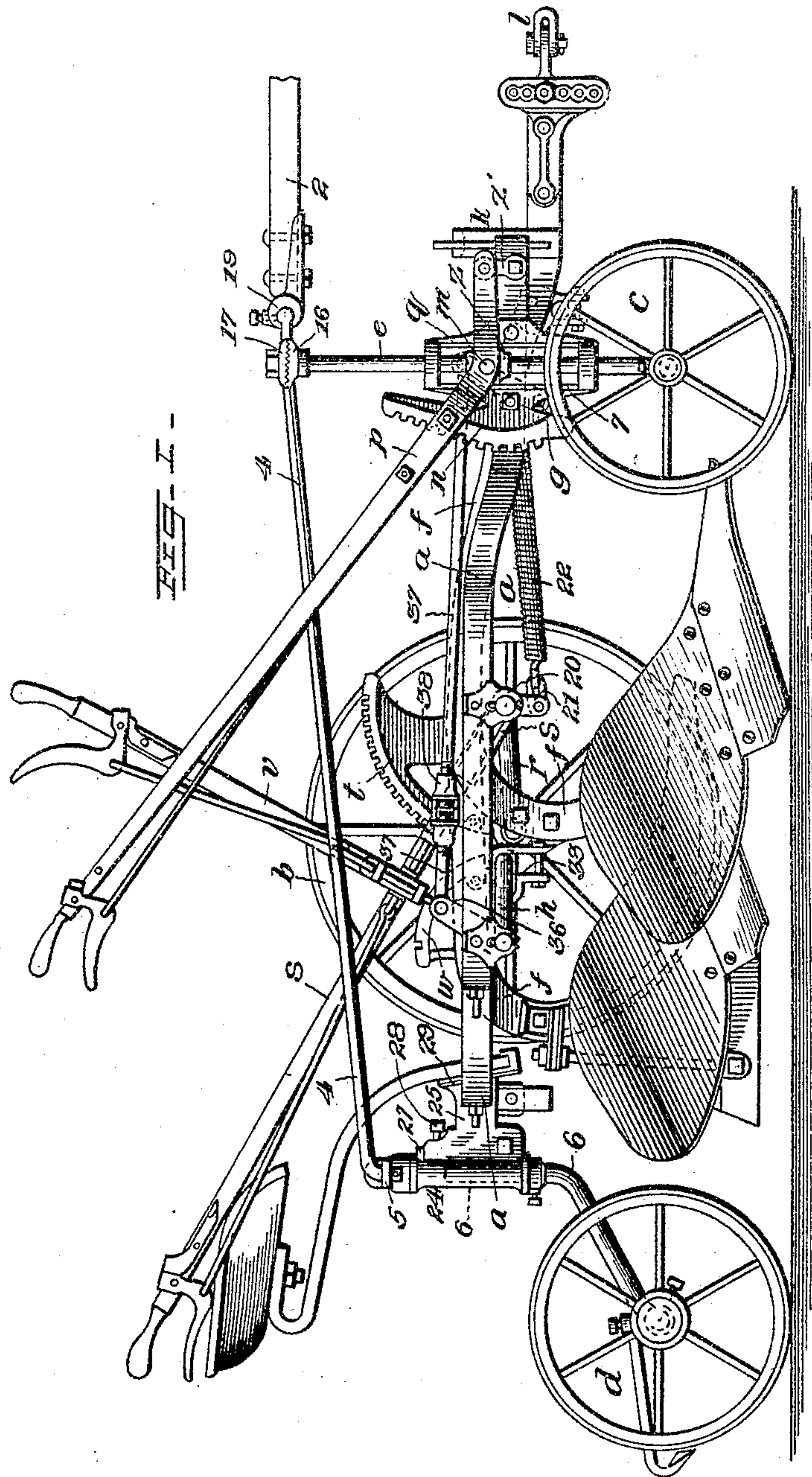
J. CLAYTON.

PLOW.

APPLICATION FILED JAN. 15, 1903.

NO MODEL.

7 SHEETS—SHEET 1.



Inventor

John Clayton

Witnesses.

R. A. Boswell.
George M. Anderson

By

E. W. Anderson

his

Attorney

No. 773,926.

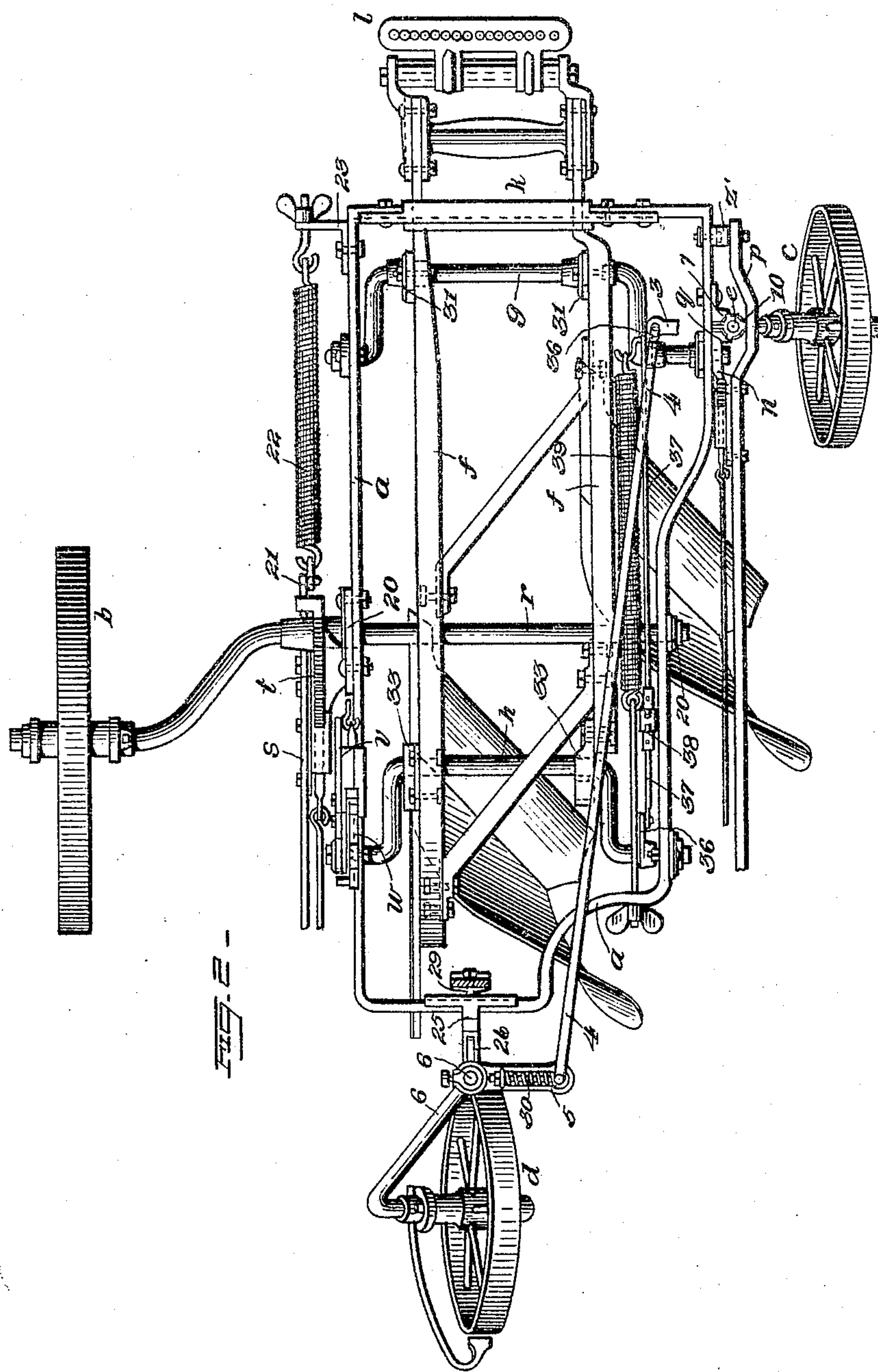
PATENTED NOV. 1, 1904.

J. CLAYTON.
PLOW.

APPLICATION FILED JAN. 15, 1903.

NO MODEL.

7 SHEETS—SHEET 2.



Inventor

John Clayton

Witnesses

R. A. Boswell,
George M. Anderson

By

E. W. Anderson

his

Attorney

No. 773,926.

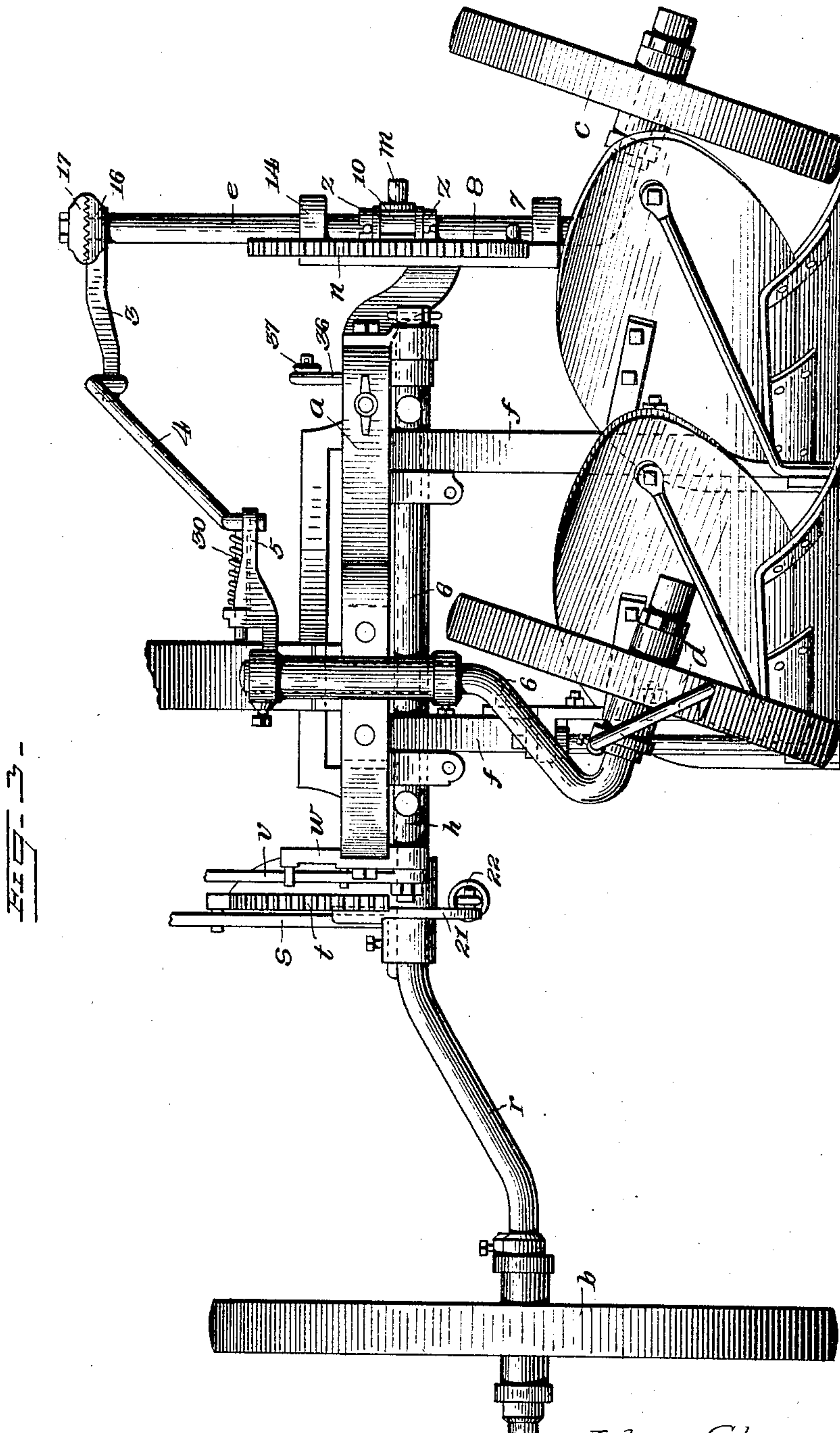
PATENTED NOV. 1, 1904.

J. CLAYTON.
PLOW.

APPLICATION FILED JAN. 15, 1903.

NO MODEL.

7 SHEETS—SHEET 3.



Inventor

John Clayton

Witnesses

R. A. Boswell.
George M. Anderson

By

E. W. Anderson

his

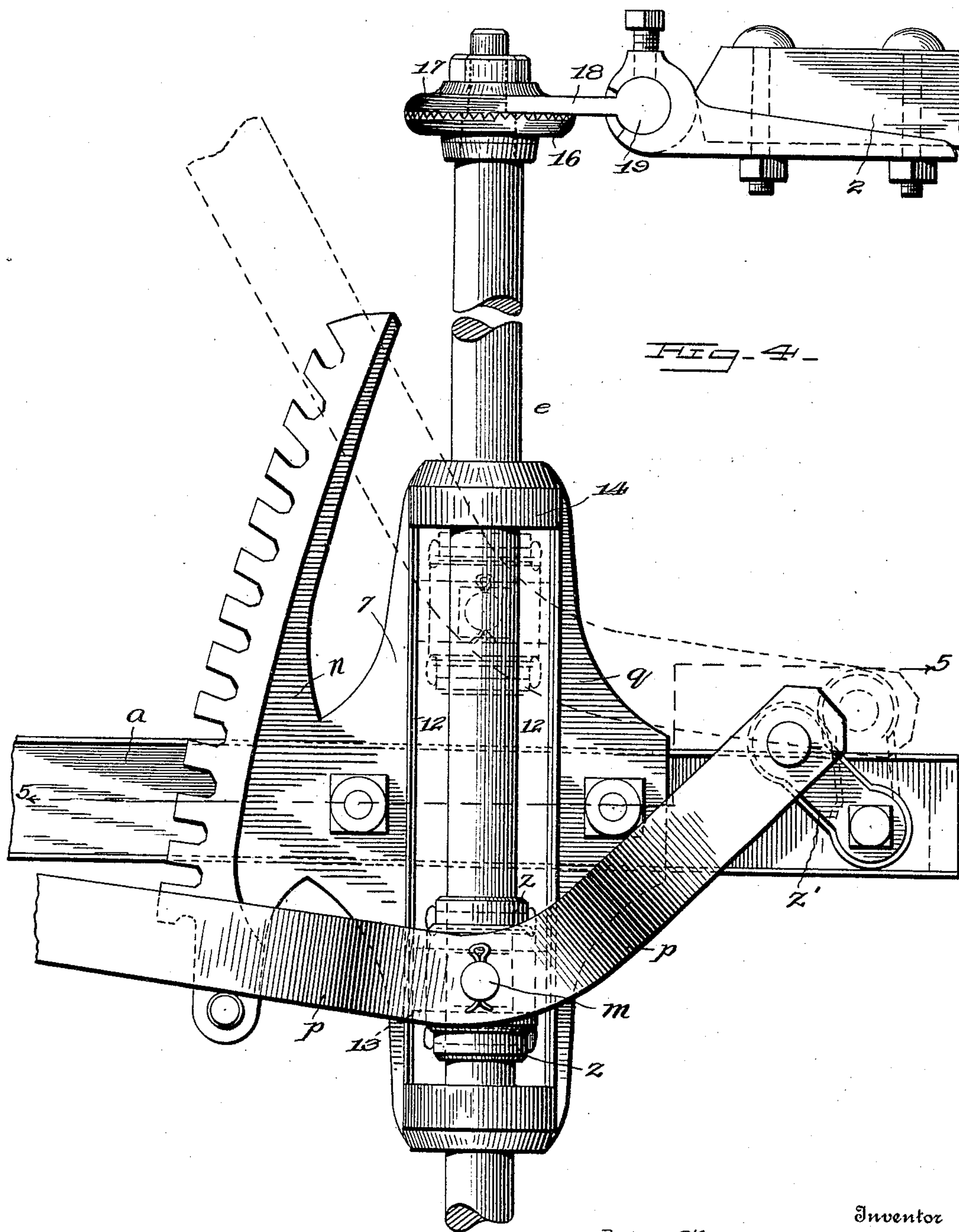
Attorney

PATENTED NOV. 1, 1904.

APPLICATION FILED JAN. 15, 1903.

NO MODEL.

7 SHEETS—SHEET 4.



Inventor

John Clayton

Witnesses

R. A. Boswell.
George M. Hudson

Deij

E. W. Anderson

His

Attorney

No. 773,926.

PATENTED NOV. 1, 1904.

J. CLAYTON.
PLOW.

APPLICATION FILED JAN. 15, 1903.

NO MODEL.

7 SHEETS—SHEET 5.

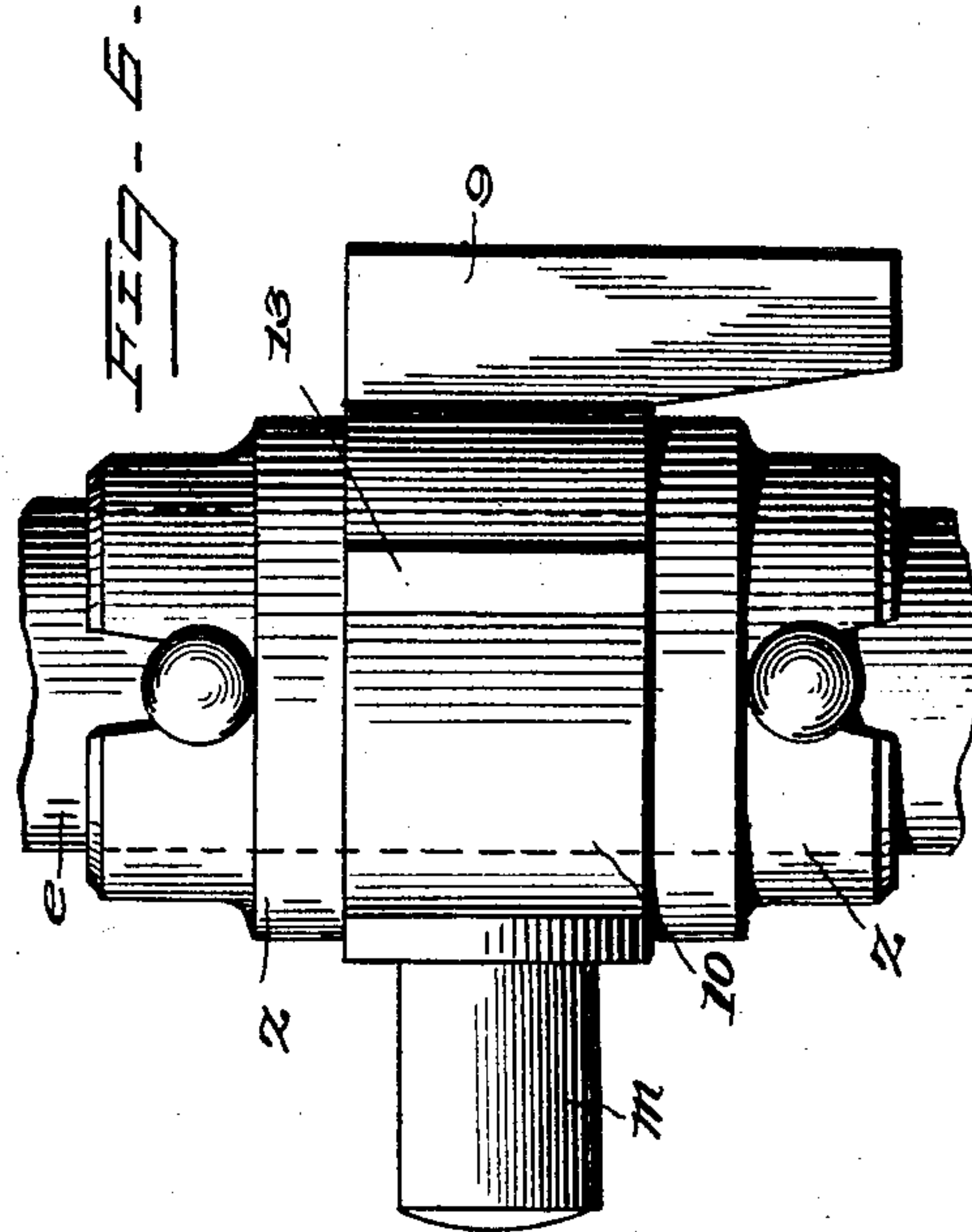
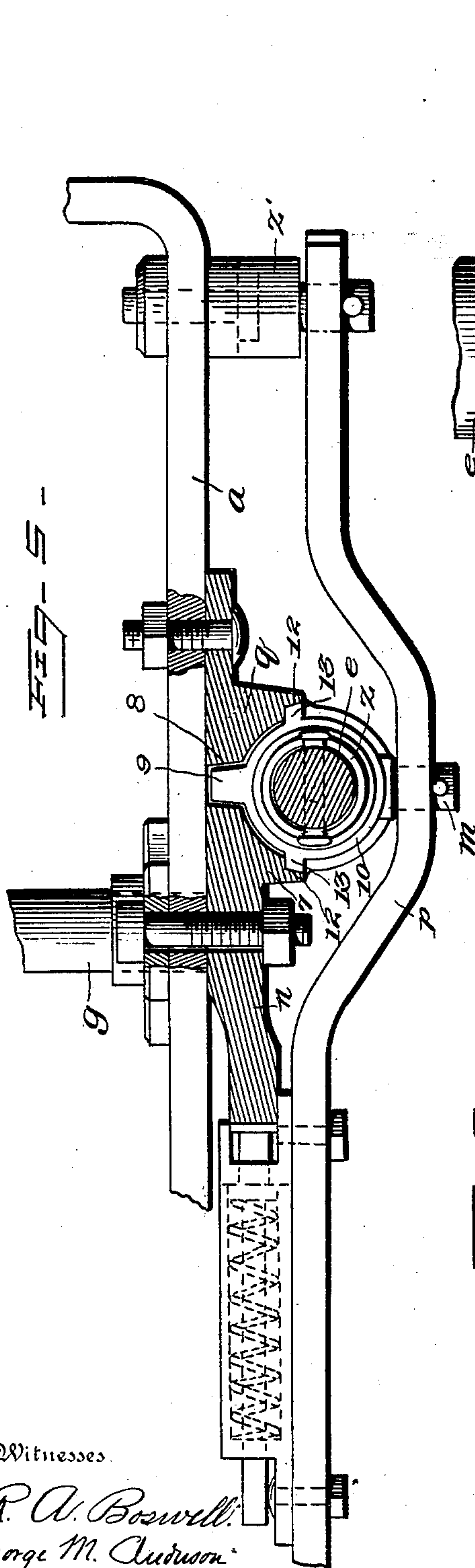
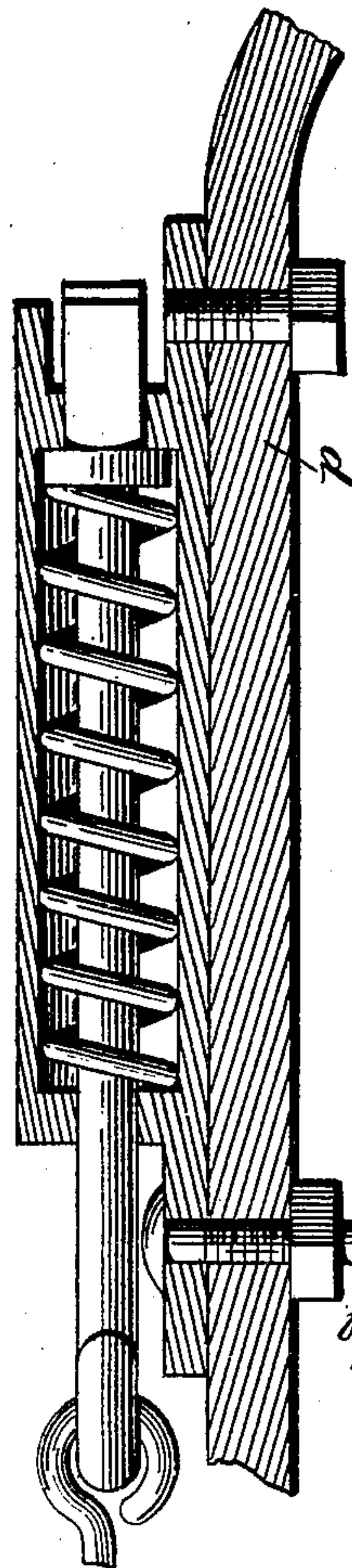


FIG. 7-



Witnesses.

R. A. Boswell.
George M. Anderson.

Inventor
John Clayton
by E. W. Anderson
Attorney

No. 773,926.

PATENTED NOV. 1, 1904.

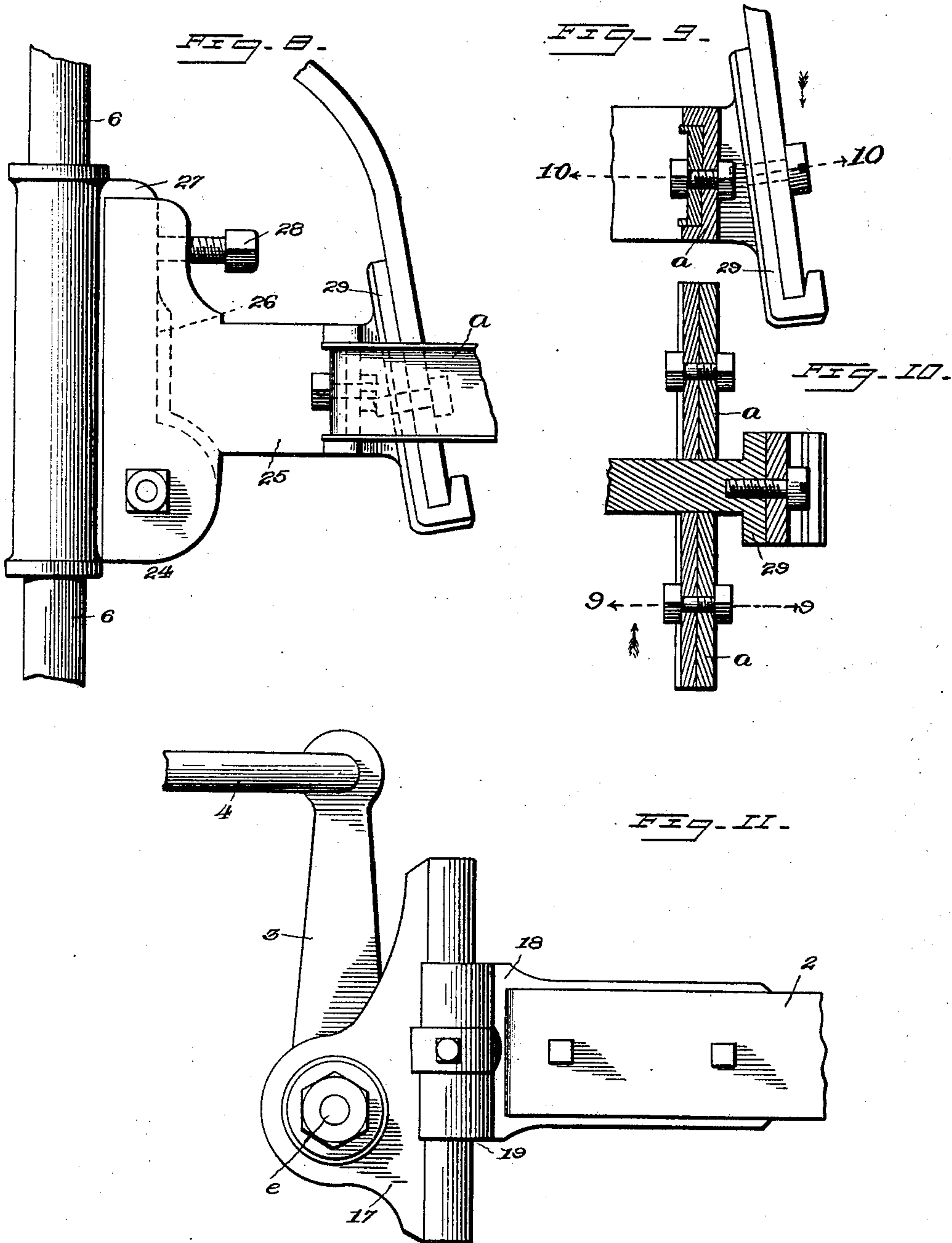
J. CLAYTON.

PLOW.

APPLICATION FILED JAN. 15, 1903.

NO MODEL.

7 SHEETS—SHEET 6.



Inventor

John Clayton

Witnesses

R. A. Boswell.
George M. Anderson

By

E. W. Anderson

his

Attorney

No. 773,926.

PATENTED NOV. 1, 1904.

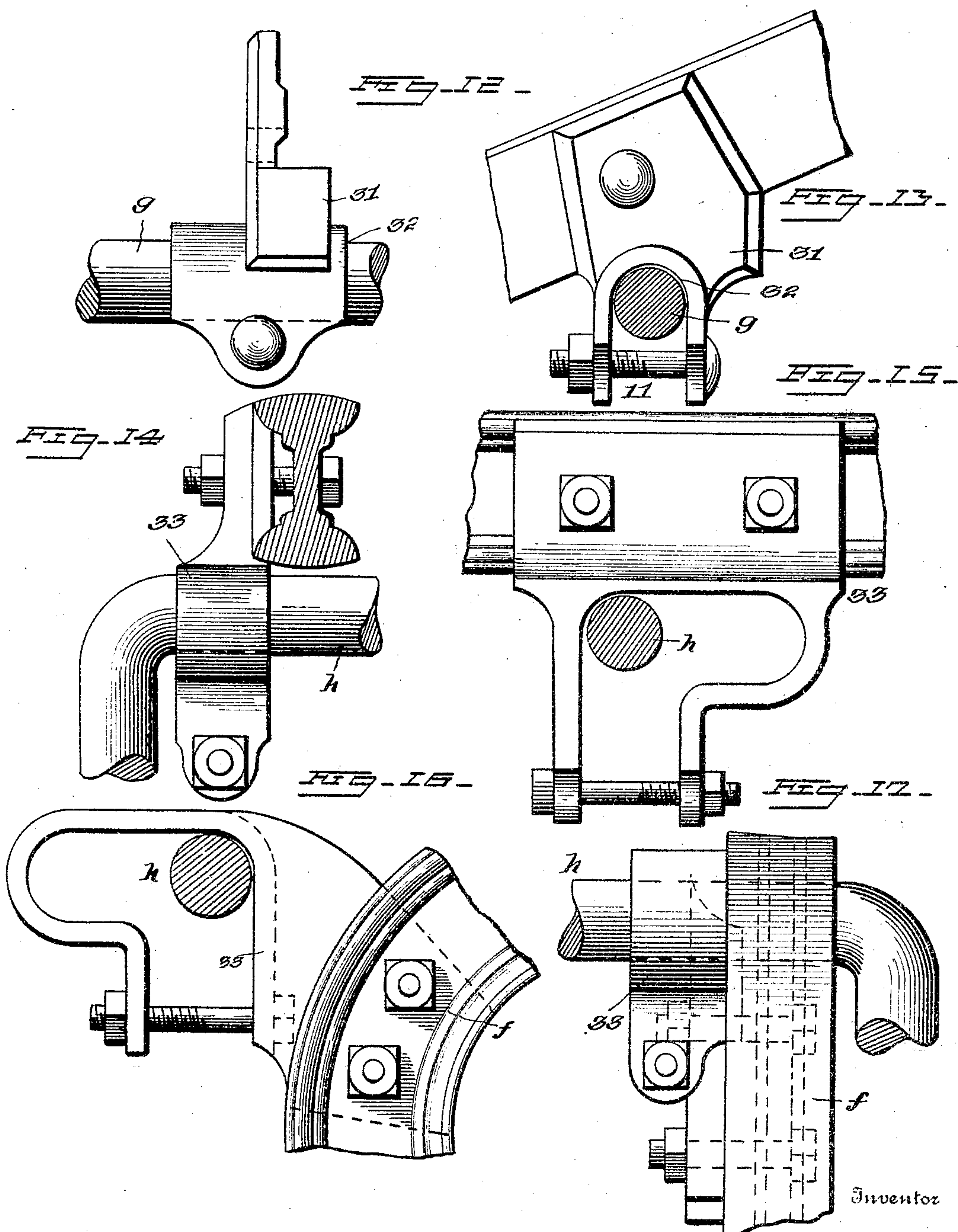
J. CLAYTON.

PLOW.

APPLICATION FILED JAN. 15, 1903.

NO MODEL.

7 SHEETS—SHEET 7.



Witnesses

R. A. Boswell.
George M. Anderson

By

John Clayton

E. W. Anderson

his Attorney

UNITED STATES PATENT OFFICE.

JOHN CLAYTON, OF MINNEAPOLIS, MINNESOTA.

PLOW.

SPECIFICATION forming part of Letters Patent No. 773,926, dated November 1, 1904.

Application filed January 15, 1903. Serial No. 139,157. (No model.)

To all whom it may concern:

Be it known that I, JOHN CLAYTON, a citizen of the United States, and a resident of Minneapolis, in the county of Hennepin and State of Minnesota, have made a certain new and useful Invention in Plows; and I declare the following to be a full, clear, and exact description of the same, such as will enable others skilled in the art to which it appertains to make and use the invention, reference being had to the accompanying drawings, and to letters and figures of reference marked thereon, which form a part of this specification.

In the accompanying drawings, Figure 1 is a side elevation of my plow. Fig. 2 is a plan view of the same. Fig. 3 is an end elevation of the same, on a larger scale, and partly broken away. Fig. 4 is a detail side view of the means for adjusting the furrow-wheel and for adjusting the pole 2. Fig. 5 is a section on the line 5 5, Fig. 4. Fig. 6 is a detail side view of collar 10 and adjacent parts. Fig. 7 is a detail longitudinal sectional view of the spring-pawl for the holding-ratchet of the adjusting-lever for the furrow-wheel. Fig. 8 is a detail side view of the rear wheel-bracket 25. Fig. 9 is a section on the line 9 9, Fig. 10. Fig. 10 is a section on the line 10 10, Fig. 9. Fig. 11 is a detail plan view illustrating the means for adjusting the pole 2. Fig. 12 is a detail end view of the front crank-bearing 31. Fig. 13 is a detail side view of the same. Fig. 14 is a detail rear view of the rear crank-bearing 33 upon the land side of the machine. Fig. 15 is a side view of the the same. Fig. 16 is a detail side view of the rear crank-bearing on the furrow side of the machine. Fig. 17 is an end view of the same.

The invention relates to wheeled plows; and it consists in the novel construction and combinations of parts as hereinafter set forth.

In the accompanying drawings the letter *a* designates the frame, which is supported by the landside-wheel *b*, the furrow-wheel *c*, and the rear or caster wheel *d*. The frame is vertically adjustable on the stem *e* of the furrow-wheel and is adjustable crankwise on the landside-wheel.

The plow-beam *f* is connected to a forward crank *g* and to a rear crank *h*, these cranks

having bearings on the frame-bars, the front ends of which are attached to a yoke portion *k*, which opens downward, providing an interval for the free movement of the end of the plow-beam, to which is attached the clevis *l* of the draft.

The front portion and right side of the frame is adjustable on the stem of the furrow-wheel, the loose collar of which is provided with a fulcrum-stud *m*, to which is pivoted the lever *p*, said lever being connected to the front or yoke portion of the frame by means of rocker-link *q* projecting upward. The holding-ratchet *n* for this lever forms a part of the bracket *q*, which is secured to the frame.

The rear portion and land side of the frame is adjustable by means of the crank-axle *r* of the landside-wheel, said crank-axle being rigidly secured to a lever *s*, which is arranged to be held in adjusted position by means of a ratchet *t* of the frame.

The rear crank *h* of the plow-beam is also provided with a rigidly-attached lever *v*, whereby the plow-beam is adjusted up or down at its rear portion, such adjustment being secured by means of the ratchet *w* of the frame.

The pole 2 is connected to the top of the stem of the furrow-wheel, said stem being provided with an arm 3, to which is attached the front end of a connecting-rod 4, the rear end of which is connected to an arm 5 of the stem 6 of the caster-wheel in such wise that in turning the plow these wheels are properly directed in a correlative manner.

7 indicates the furrow-wheel bracket, which is adjustably secured to an outward bend of the frame on the right side of the same and is formed with a vertical channel 8 in its back portion to receive a brace-rib 9 of the loose collar 10 between the fast collars *z z*, to which the stem *e* of the furrow-wheel is secured. The collar 10 is provided with the spindle or stud *m*, to which the furrow-wheel lever is pivoted. In this bracket are also provided front and rear channels 12 the front and rear rib-guides 13 of the collar 10, the construction being such that this collar is braced in position on the side, front, and rear by the channels of the bracket. This collar-bearing

10 thereupon forms an extended guide for the bracket of the frame in any position of the adjustment of the latter. It also facilitates the adjustment of the frame by the lever
 5 of this side, because the extent of the bearing precludes binding. The bracket is provided with a guide-cap 14, forming a stop, and when the lever is lifted to its full height the bottom of plowshare is depressed below the wheel
 10 in position for opening first furrows. The teeth of the holding-ratchet of the adjusting-lever line with the lever in its different positions, so as to secure it firmly in holding the adjustment in any position.

15 To the top of the furrow-wheel stem is secured a toothed cap-plate 16, having a square bearing for a square seat at the end of said stem, to which this plate is rigidly secured. To the stem is also connected the toothed pole-
 20 plate 17, which engages the cap-plate 16 and is adjustable circularly thereon. The pole-plate 17 is provided with an arm or lug 18, to which the pole is secured. The adjustment of the plates 16 and 17 is secured by means
 25 of a suitable nut. By means of these devices the pole can be adjusted to suit the draft according to the work. The arm or lug 18 is formed with a cylinder edge 19 to receive the pole-coupling plate, which is secured thereto
 30 by means of a set-screw. The cap-plate 16 is provided with an arm 3, hereinbefore referred to, for the attachment of the connecting-rod 4, extending to an arm of the stem of the caster-wheel.

35 The adjustments of the cap and pole plate are for the purpose of lining up the pole with the neck-yoke of the team.

The axle *r* of the land-wheel extends from the land side to the furrow side of the frame
 40 and is seated in bearings 20 of said frame. By running this axle to the furrow side great strength is secured to the structure on account of the extending bracing provided, the combination being such that in the lowest throw
 45 of the levers the plow-beams do not touch the axle. The shoe of the land-lever, whereby it is secured to this axle, is provided with an arm or lug 21, to which the rear end of the equalizing coil-spring 22 is attached, the front
 50 end of said spring being connected to a lug 23 of the frame in front by means of a hook and thumb-nut.

The stem 6 of the rear or caster wheel is seated in an adjustable bearing 24 of a bracket
 55 25, which is bolted to the rear of the frame. The bracket is provided with a vertical channel or seat 26 for the longitudinal rib 27 of the stem-bearing, which is pivoted in the seat 26 at its lower end. At the upper end of the
 60 seat 26 is provided a set-screw 28, which is used for adjusting the position of the rear wheel. By setting up this screw the stem-bearing is forced backward, thereby pressing the wheel to the ground. At this part of the
 65 frame the seat-spring is attached, being bolted

to the back support 29, which may form a part of the bracket, the whole being secured to the frame by one bolt.

The upper end of the stem of the rear wheel is provided with the arm 5, which carries a
 70 spring rod or bolt 30, to which the connecting-rod 4 is attached. The bolt has a movement back and forth in its spring connection as pulled by the rod when the rear wheel is brought to short angles in turning corners,
 75 and when the plow is pulled in line by the team the spring assists in throwing the rod into position.

The plow-beam is provided with a front crank-bearing 31, which is secured to the side
 80 of the plow-beam and has an opening semi-circular at the top, as indicated at 32, to conform to the crank *g*, on which this bearing rests. This opening is extended downward and is provided with a closing-bolt 11. In
 85 this manner the crank is allowed free movement in the bearing. When the bolt 11 is removed, the crank will drop out of the bearing, thereby facilitating the knocking down of the plow. The rear crank-bearing 33 is also bolt-
 90 ed to the side of the plow-beam and is formed with an angular rounded opening to receive the rear crank *h*, this opening being closed at its lower end by means of a bolt. The opening of this rear crank-bearing comprises a
 95 horizontal upper branch and a vertical descending branch communicating therewith at its end, and the opening is of sufficient extent to allow play of the crank-axle therein up and
 100 down and back and forth. By this construction the crank is allowed to drop vertically when the land-wheel drops down into holes or depressions in the ground or to allow the plow
 105 to rise up over obstructions without sharp shocks, thereby reducing the friction on the bottom and conserving the general structure. Also by means of the horizontal portion of the opening the plow-beams are allowed to
 110 slide forward upon the action of the cranks when the lifting-lever is operated, which materially facilitates the throw.

The front and rear plow-beam cranks are provided with arms 36, which are connected by a rod 37, consisting of two portions hav-
 115 ing their proximate ends threaded to engage the turnbuckle connections 38, whereby the rod is rendered adjustable. When the turnbuckle is operated to lengthen the rod, the front crank is depressed, the rear crank being
 120 held stationary by its lever connection. This adjustment enables the operator to give more or less dip to the plowshare. The front arm 36 is usually made in hook form for the attachment of the crank-spring 39, this being an-
 125 chored to the rear part of the frame by means of a threaded rod and thumb-nut.

The rear crank-bearing of the plow-beam may be made closed at its lower end; but the open end and bolt construction is preferred.

Two plow-beams are readily connected in a 130

wheel-plow of this character, the right plow-beam being usually shorter than that on the left, as indicated in the drawings.

By the improvements described it is designed to secure an easy adjustment of the frame and plow-beams and a vertical motion of the pivot-pin, whereby the lever is connected to the stem of the furrow-wheel. Also it is designed to facilitate the action and security of the furrow-wheel lever by making the distance from the pin center to the teeth on the ratchet equal in whatever position the lever is placed in said ratchet. The crank-bearings of the plow-beams being open gap-bearings not only allow for play of the plow-beams and frame, but also facilitate the setting up and knocking down of the plow, in this way providing for the exigencies of shipment. The adjustment of the front plow-beam crank by means of the connecting-rod provides for raising or lowering the point ends of the plows. When the plow becomes worn or loses its dip or suction, the point can be lowered, so as to give it a sharper inclination to take the ground. The draft is readily adjusted by the pole-connection devices to suit the neck-yoke of the team and to cause the furrow-wheel to track in a satisfactory manner.

Having described this invention, what I claim, and desire to secure by Letters Patent, is—

1. In a wheel-plow, the combination of the supporting-frame, the plow-beam, double-cranked shafts connecting said beam and frame, and means for altering the dip of the plow consisting in a direct sectional rod connection of said cranks having a turnbuckle connection, and an adjusting-lever fast upon one of said shafts, substantially as specified.

2. In a wheel-plow, the combination of the main frame, the plow-beam, double-cranked shafts connecting said beam and frame, and means for allowing one of said shafts a vertical movement in its frame connection consisting of a vertically-slotted boxing carried by said frame, substantially as specified.

3. In a wheel-plow, the combination of the main frame, the plow-beam, double-cranked shafts connecting said beam and frame, and means for allowing one of said shafts a horizontal and vertical movement in its frame connection consisting of an angularly-slotted boxing carried by said frame, substantially as specified.

4. In a wheel-plow, the combination of a main frame and means for adjusting said frame comprising a landside-wheel having a cranked axle provided with journal-bearings in the side bars of said frame, an adjusting-lever fast upon said axle, said axle having a second cranked extension, an equalizing coil-spring connecting said cranked extension with the main frame, a plow-beam above said axle, and means independent of said frame-

adjusting means for adjusting said beam and comprising double-cranked shafts connecting said beam and frame, a connecting-rod for said shafts, and an adjusting-lever fast upon one of said shafts, substantially as specified.

5. In a wheel-plow, the combination of a main frame, and means for adjusting said frame comprising a landside-wheel, having a cranked axle provided with journal-bearings in the side bars of said frame, an adjusting-lever fast upon said axle, said axle having a second cranked extension, an equalizing coil-spring connecting said cranked extension with the main frame, a plow-beam above said axle, double-cranked shafts connecting said beam and frame, means for altering the dip of the plow consisting in a direct sectional rod connection of said cranked shafts having a turnbuckle connection, and an adjusting-lever fast upon one of said shafts, substantially as specified.

6. In a wheel-plow, the combination of the main frame, of the rear wheel having a stem, a journal-bearing for said stem to provide for rotary movement thereof in a horizontal plane, a pivotal connection of said stem-bearing and frame and an adjusting-screw to provide for rotary or angular movement of said stem-bearing and stem in a vertical plane, substantially as specified.

7. In a wheel-plow, the combination with the frame and furrow-wheel stem, of the frame-bracket, the adjusting-lever, the ratchet, the loose collar and its fulcrum-pin, the fast collars and their rib projections adapted to engage rings of said frame-bracket, substantially as specified.

8. In a wheel-plow, the combination with the frame, its bracket, and the furrow-wheel stem, of the lever, the aligned ratchet, the loose fulcrum-pin collar and the ribbed collars of the stem, and the rocker-link connecting the frame and lever, substantially as specified.

9. In a wheel-plow, the combination with the frame and its bracket, of the furrow-wheel stem, and the fulcrum-collar thereof, of the rocker-link connection, the ratchet, and the lever engaging said ratchet, fulcrum and rocker-link, substantially as specified.

10. In a wheel-plow, the combination with the furrow-wheel stem having a toothed cap-plate, provided with a connection with the rear wheel-stem, of an adjustable toothed plate having a connection with the pole, and engaging said first-named plate, substantially as specified.

11. In a wheel-plow, the combination of the furrow-wheel stem having a toothed cap-plate provided with a laterally-extending arm, the rear wheel-stem having a laterally-extending arm, the connecting-rod for said arms, the adjustable toothed plate engaging said first-named plate, and having a lateral arm provided with a cylindrical bearing portion, and

the adjustable pole-coupling plate engaging said cylindrical bearing portion, substantially as specified.

12. In a wheel-plow, the detachable plow-
5 beam crank-bearing, having an elongated angular opening, and provided with a bolt-stop at its lower end, substantially as specified.

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

JOHN CLAYTON.

Witnesses:

A. D. SMITH,
S. A. RICE.