

No. 803,958.

PATENTED NOV. 7, 1905.

P. ADAMS.  
POWER MECHANISM.

APPLICATION FILED MAY 16, 1905.

3 SHEETS—SHEET 1.

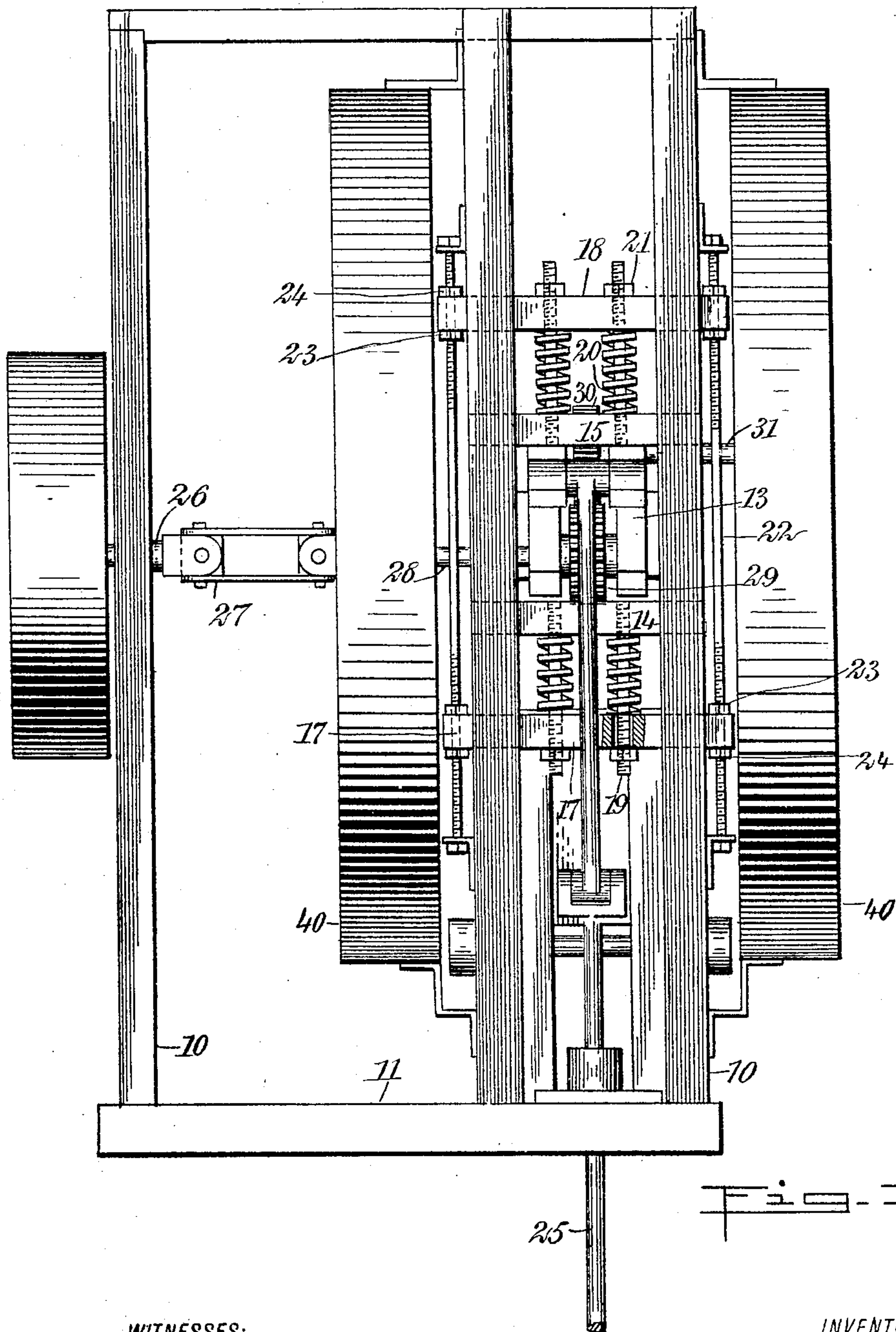


Fig. 1.

WITNESSES:  
C. A. Jarvis  
C. R. Ferguson

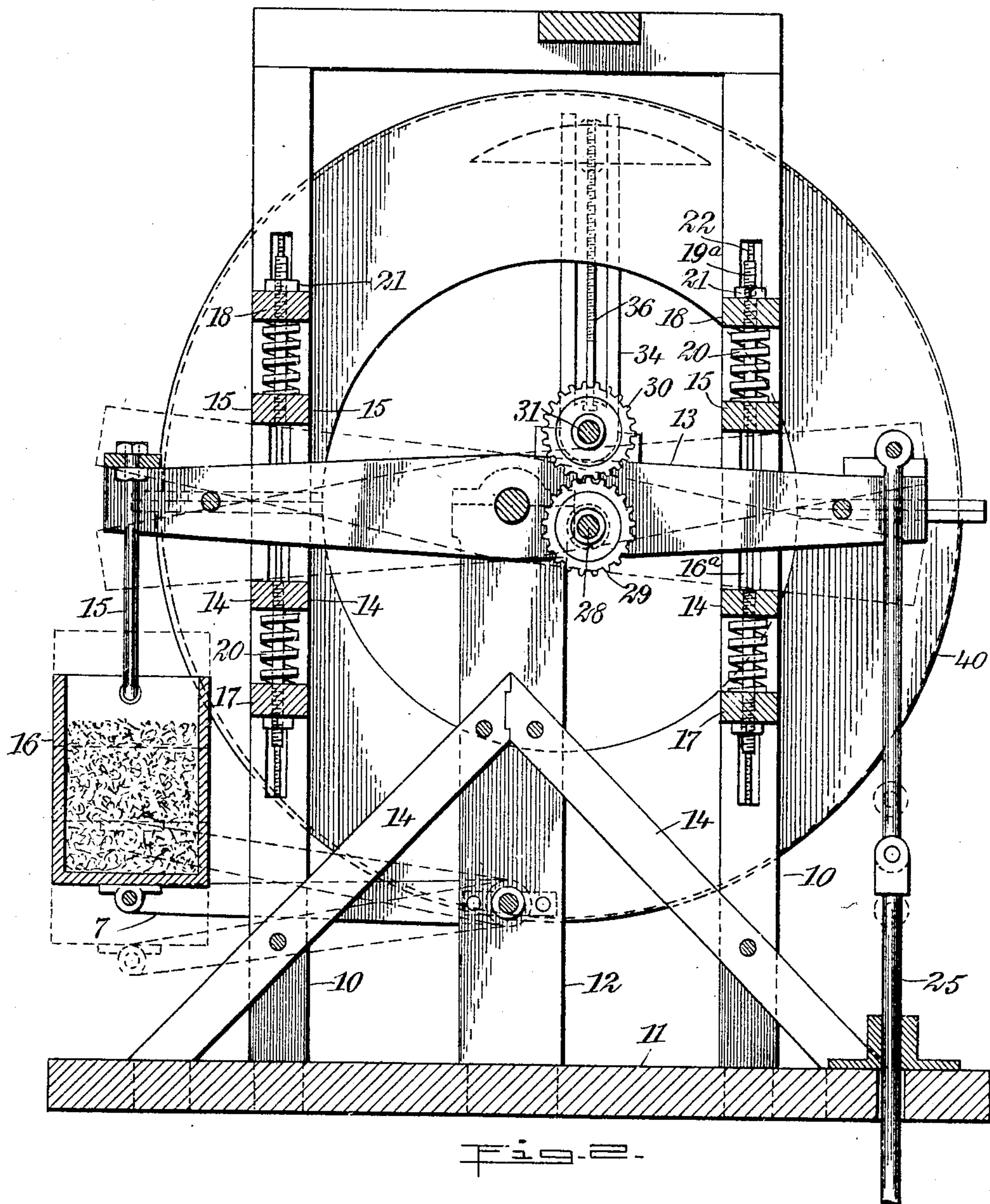
INVENTOR  
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ATTORNEYS

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3 SHEETS—SHEET 2.



WITNESSES:  
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3 SHEETS—SHEET 3.

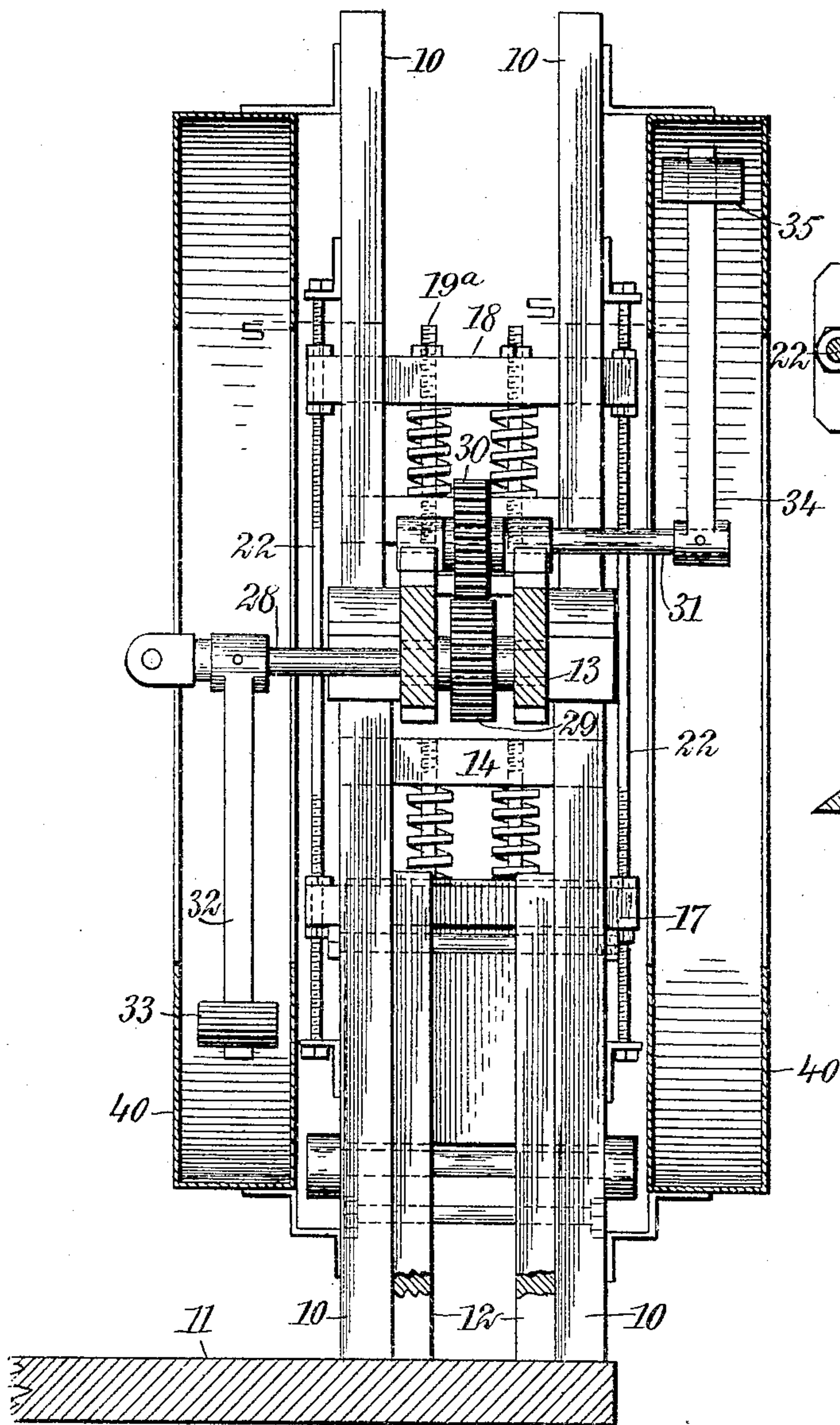


Fig. 3.

WITNESSES:  
*C. A. Jarvis.*  
*C. R. Ferguson*

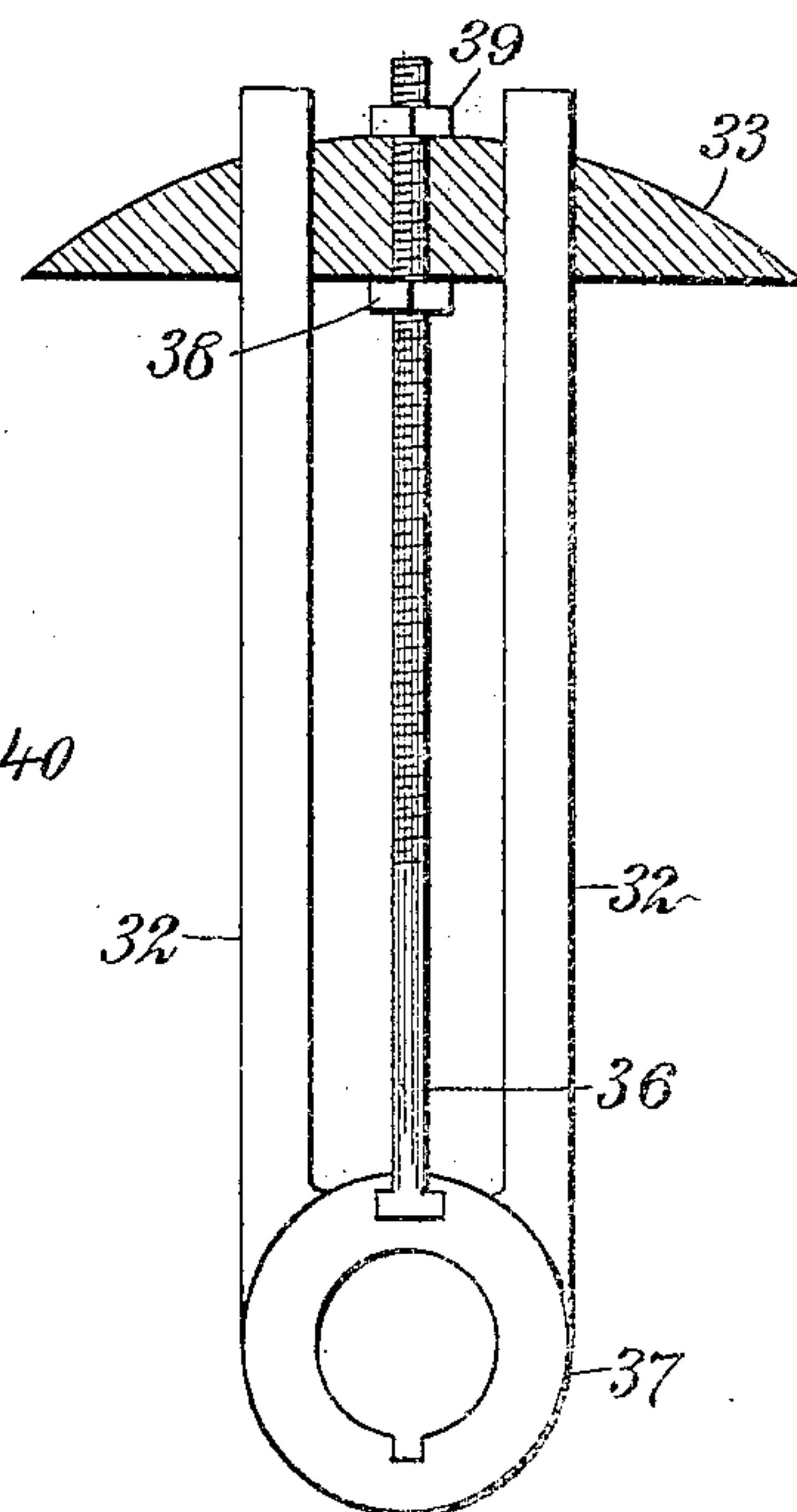
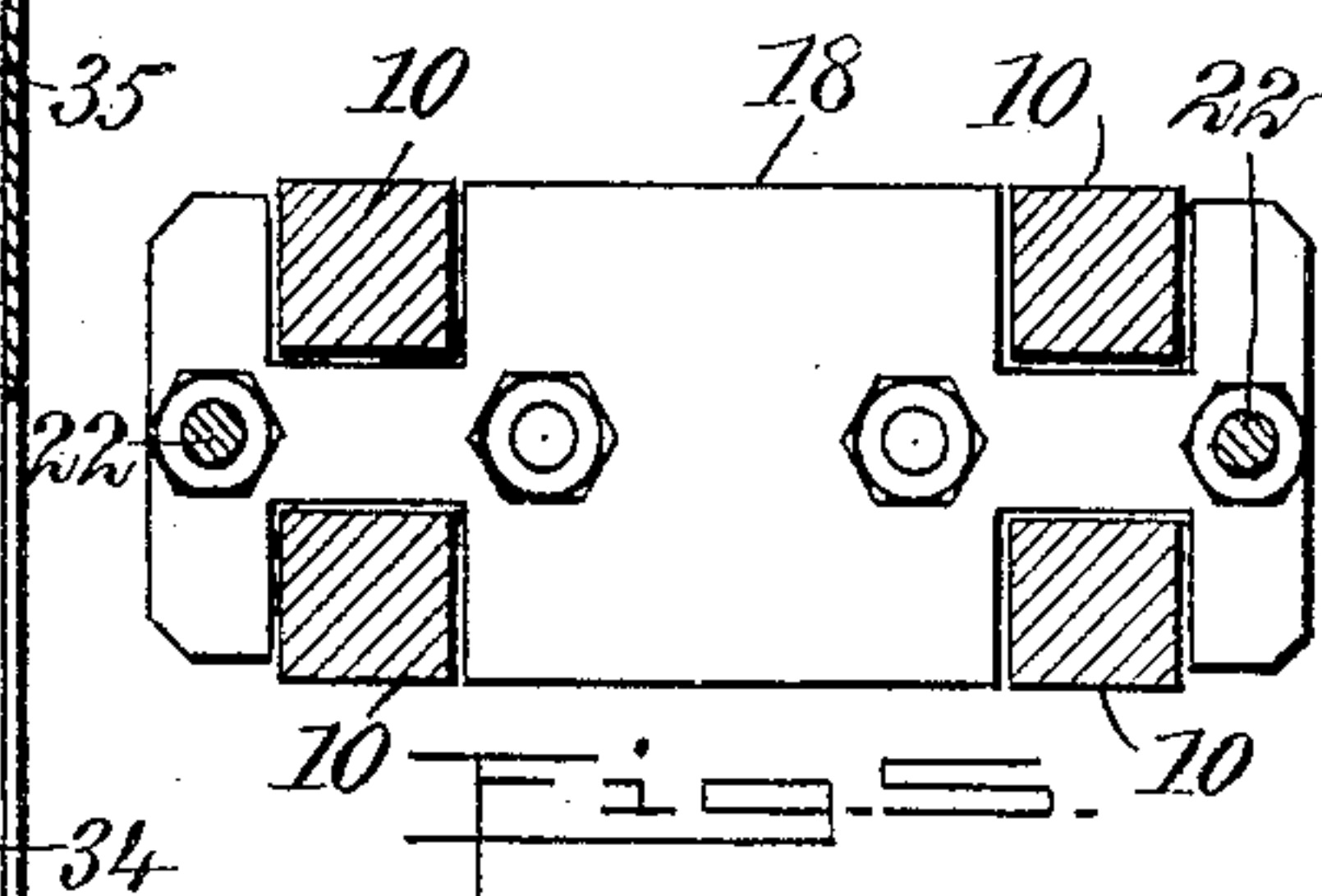


Fig. 4.

INVENTOR  
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ATTORNEYS



# UNITED STATES PATENT OFFICE.

PARIS ADAMS, OF LAMAR, COLORADO, ASSIGNOR OF ONE-HALF TO  
LEWIS H. MANVILLE, OF LAMAR, COLORADO.

## POWER MECHANISM.

No. 803,958.

Specification of Letters Patent.

Patented Nov. 7, 1905.

Application filed May 16, 1905. Serial No. 260,709.

*To all whom it may concern:*

Be it known that I, PARIS ADAMS, a citizen of the United States, and a resident of Lamar, in the county of Prowers and State of Colorado, have invented a new and Improved Power Mechanism, of which the following is a full, clear, and exact description.

This invention relates to improvements in mechanism for aiding the working power for a device to be operated over a power initially derived from a steam or other motor, thus resulting in an economical use of motive agent, as an engine of comparatively small horsepower may be employed to perform work requiring a much greater horse-power.

I will describe a power mechanism embodying my invention and then point out the novel features in the appended claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is an end elevation of a power mechanism embodying my invention. Fig. 2 is a sectional elevation thereof. Fig. 3 is a sectional elevation at right angles to Fig. 2. Fig. 4 is a detail showing one of the counterbalancing-weights employed, and Fig. 5 is a section on the line 5 5 of Fig. 3.

The frame of the machine comprises uprights 10, extended from a base 11, and it also comprises uprights 12, in which a walking-beam 13 has its shaft-bearings. The whole frame is strengthened by means of brace-bars 14, bolted to the base 11 and also to the uprights. Attached to one end of the walking-beam by means of a hanger 15 is a box 16, designed to receive a weight material. This box is guided practically in vertical alignment by means of arms 7, pivoted to the lower portion of the box and having swinging connection with the uprights 12. In its movements the shock of the walking-beam is taken up by lower buffer-bars 14<sup>a</sup> and upper buffer-bars 15<sup>a</sup> said buffer-bars having their ends extended between the uprights 10. Said uprights are vertically slotted, as indicated at 16<sup>a</sup>, and the said buffer-bars have tongues at the ends passing into said slots, and thus they are guided.

The lower buffer-bars have yielding connection with a cross-head 17, and the upper buffer-bars have yielding connection with cross-heads 18. These connections consist of

rods 19, extended from the buffer-bars loosely through openings in the cross-heads, and springs 20 are arranged around the rods between the buffer-bars and cross-heads. The tension of these springs may be adjusted by nuts 21 on the screw-rods. The cross-heads have portions extended outward through the slots 16<sup>a</sup>, and these extended portions are perforated to receive threaded rods 22, rigidly attached to the uprights 10. At opposite sides of the cross-heads nuts 23 24 engage with the threads of the rods, and by adjusting these nuts it is obvious that the space between the buffers may be diminished or increased, depending upon the stroke required of the walking-beam—that is, in shallow wells, for instance, when the device is used for pumping the walking-beam may have less movement than when the device is employed for pumping from deep wells.

It may be here stated that while I have shown a pump-rod 25 as connected to the walking-beam at the end opposite to that to which the box 16 is connected it is to be understood that the mechanism embodying my invention may be employed for operating other devices or machinery.

A driving-shaft 26 has a universal or toggle-link connection 27 with a shaft 28, which has its bearings in the walking-beam at one side of the fulcrum-point of said walking-beam—that is, at the side toward the applied power—and on this shaft 28 is a pinion 29, meshing with a pinion 30 on a shaft 31, having bearings in boxes supported on the walking-beam, said shaft 31 being directly over the shaft 28.

Carried by the shaft 28 are arms 32, on which a weight 33 is adjustably arranged, and connected rigidly to the shaft 31 are similar arms 34, on which a weight 35 is adjustably mounted. As a means for adjusting the weights screw-rods 36 are extended from the ring portions 37, connecting the arms to the shafts. These screw-rods pass through perforations in the weights, and the weights are held as adjusted by means of nuts 38 engaging against the inner sides of the weights and nuts 39 engaging against the outer sides of the weights. Obviously by manipulating the nuts 38 and 39 the weights may be moved inward and outward to form more or less counterbalancing power, depending upon the work to be done by the machine.

To prevent possible damage to persons stand-



ing near the machine, the weights and their carrying-arms are arranged in shields 40. The weight material placed in the box 16 should substantially equal the weight of the two weights 33 and 35 combined with that of the pump-rod or the work to be done.

In the operation as the power-shaft 26 is rotated from an engine or other motor of small horse-power the shaft 28 will be rotated, and through the medium of the gear connections the shaft 31 will be rotated, thus causing the arms carrying the weights 33 and 35 to move in opposite directions. When the two weights approach each other and pass at the side toward the pump-rod, the said weights will overcome the weight in the box 16 and swing the rod-engaging end of the walking-beam downward. When the said weights approach each other and pass at the opposite side or toward the box 16, the weight in said box 16 will cause the walking-beam to rock to move the pump-rod upward. Obviously the toggle-link connection 27 between the shafts 26 and 28 permits of the swinging movements of the walking-beam.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. In a machine for the purpose specified, a walking-beam, an adjustable weight attached to one end thereof, a device to be operated having connection with the opposite end of the walking-beam, a driving-shaft having bearings in the walking-beam at one side of the fulcrum-point of the walking-beam, a weighted arm carried by said shaft, a pinion on the shaft, another shaft carried by the walking-beam, the pinion of said other shaft engaging with the first-named pinion, and a weighted arm carried by the last-named shaft.

2. In a machine for the purpose specified, a walking-beam, an adjustable weight device attached to one end thereof, a part to be actuated having connection with the opposite end of the walking-beam, a shaft having bearings in the walking-beam forward of the walking-beam fulcrum, a driving-shaft having universal-joint connection with the first-named shaft, another shaft carried by the walking-beam and having gear connection with the first-named shaft, arms extended from said shafts carried by the walking-beam, and weights adjustably mounted on said arms.

3. A machine for the purpose specified comprising a walking-beam, an adjustable weight attached to one end thereof, a part to be operated having connection with the opposite end, adjustable buffers above and below the

walking-beam, a shaft having bearings in the walking-beam between its fulcrum and the device to be operated, a pinion on said shaft, another shaft carried by the walking-beam, a pinion on said other shaft engaging with the first-named pinion, arms extended from said shafts, screw-rods arranged between the arms, weights guided on the arms and having perforations to receive the screw-rods, and adjusting-nuts engaging the rods at the inner and outer sides of the weights.

4. A machine for the purpose specified comprising a frame having slotted uprights, a walking-beam movable up and down between the uprights, buffer-bars arranged above and below the walking-beam and having tongues extended into the slots of the uprights, cross-heads having portions extended through said slots and provided with perforations, rods extended from the cross-heads closely to the buffer-bars, springs surrounding the rods between the buffer-bars and cross-heads, screw-rods attached to the frame, nuts on said rods for engaging the upper and lower sides of the cross-heads for adjusting the same, and movable weights having connection with the walking-beam.

5. In a machine for the purpose specified, a walking-beam, an adjustable weight suspended from one end thereof, a device to be operated having connection with the opposite end, a driven shaft having bearings in the cross-head at one side of its fulcrum, arms extended from said shaft, a weight adjustable on said arms, another shaft carried by the cross-head and having gear connections with the first-named shaft, arms extended from said other shaft, a weight adjustable on said arms, and shields in which the weights and arms move.

6. In a machine for the purpose specified, a walking-beam, a weight attached to one end of said walking-beam for swinging it in one direction, and weights carried by the walking-beam, the said last-named weights being mounted to rotate in opposite directions and to overbalance the first-named weight to move the walking-beam in the opposite direction.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

PARIS ADAMS.

Witnesses:

JOHN A. WILLIAMS,  
ALFORD E. DOWNER.