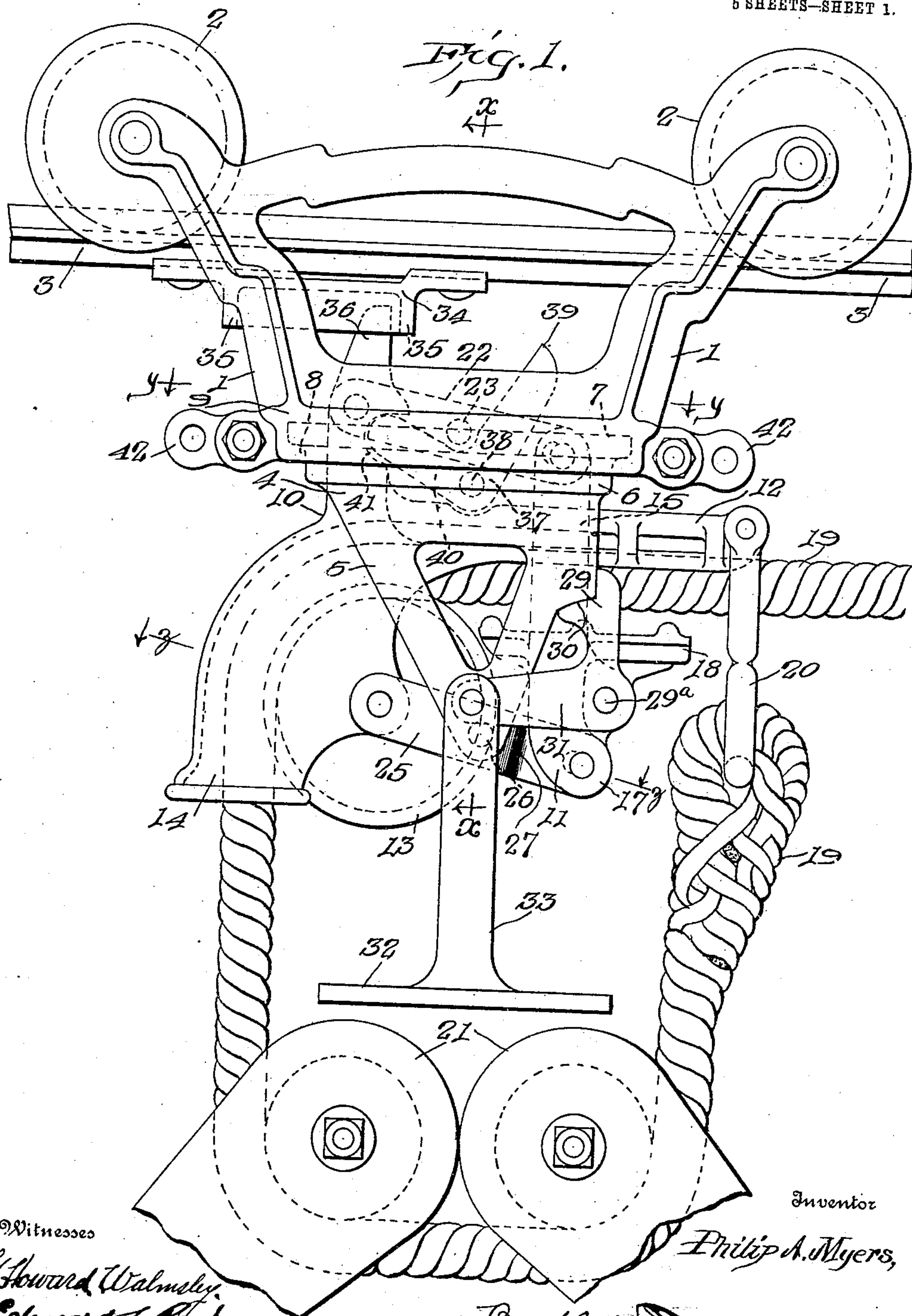


918,077.

P. A. MYERS.
HAY CARRIER.
APPLICATION FILED APR. 16, 1908.

Patented Apr. 13, 1909.
5 SHEETS—SHEET 1.



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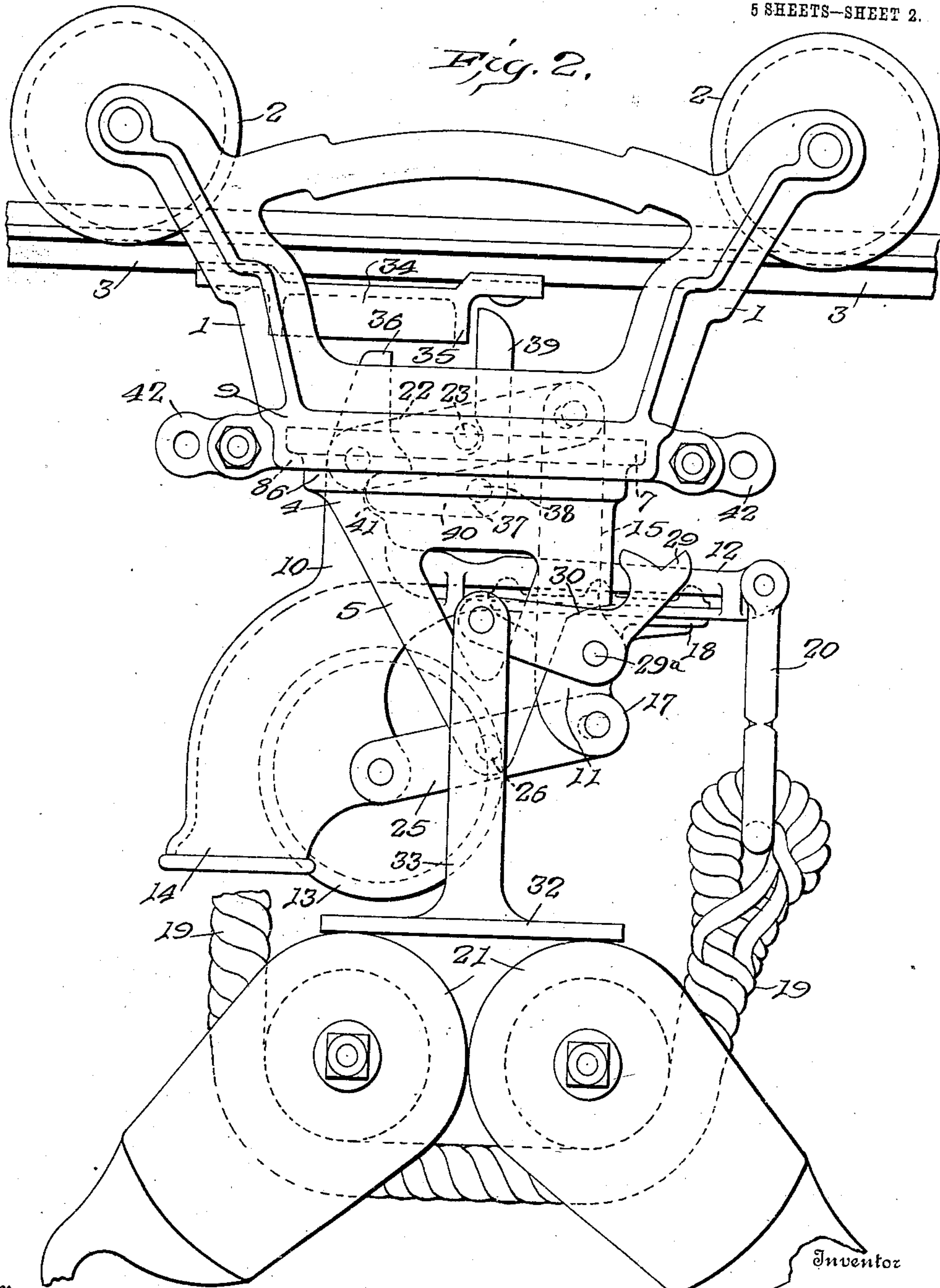
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Patented Apr. 13, 1909.

5 SHEETS—SHEET 2.



Witnesses

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6 SHEETS—SHEET 3.

Fig. 3.

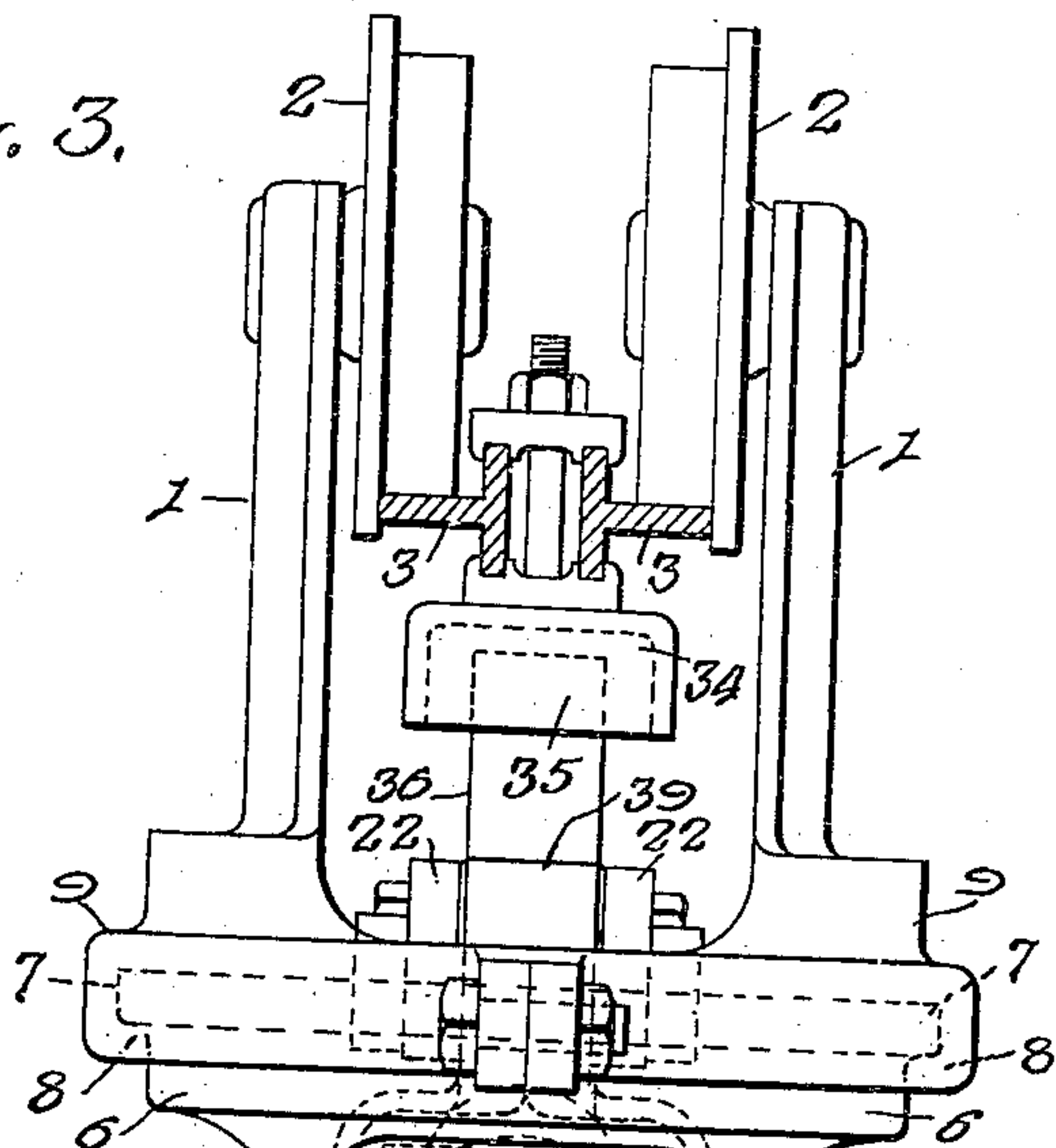
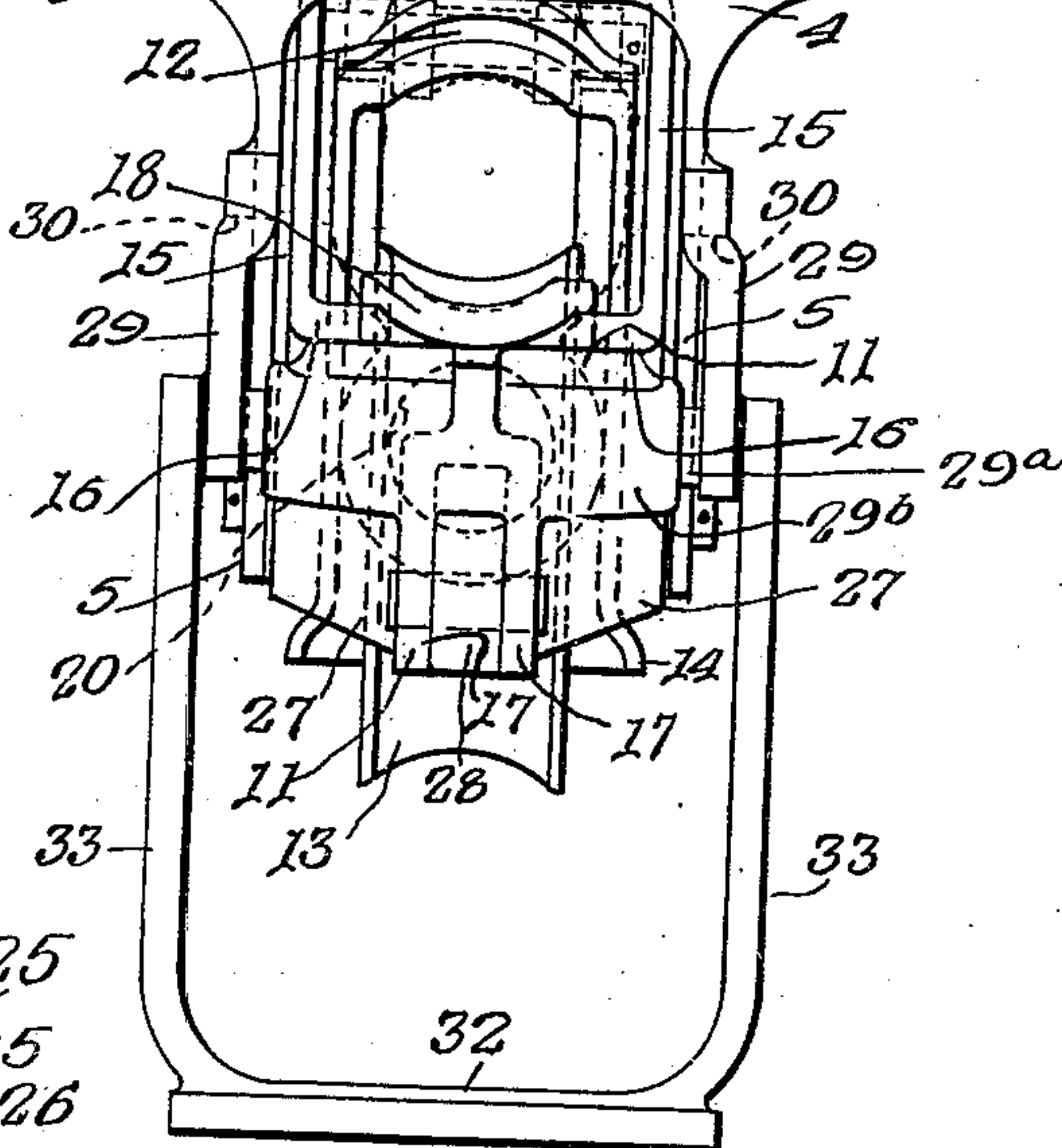
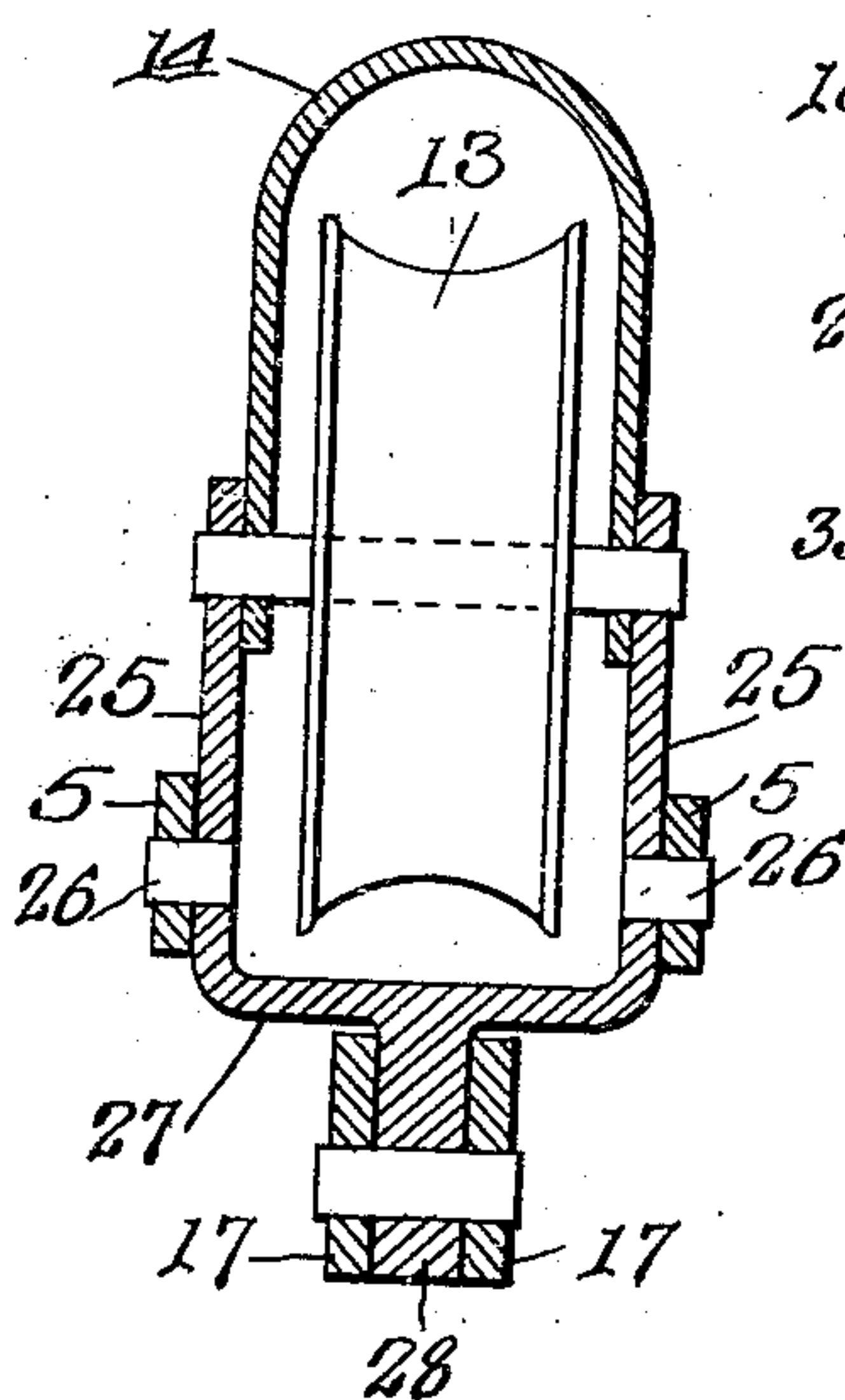


Fig. 7.



Witnesses

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5 SHEETS—SHEET 4.

Fig. 5.

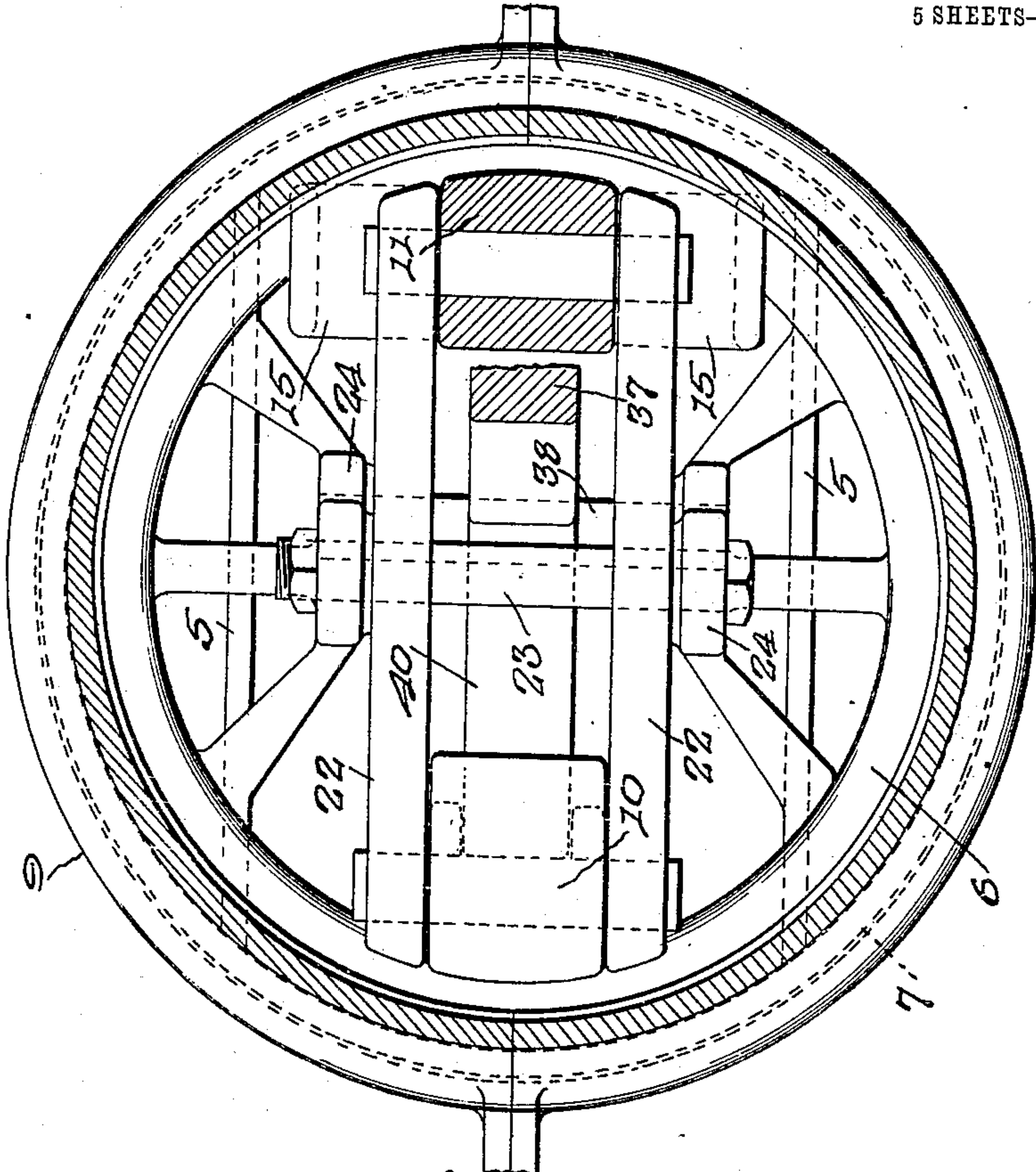
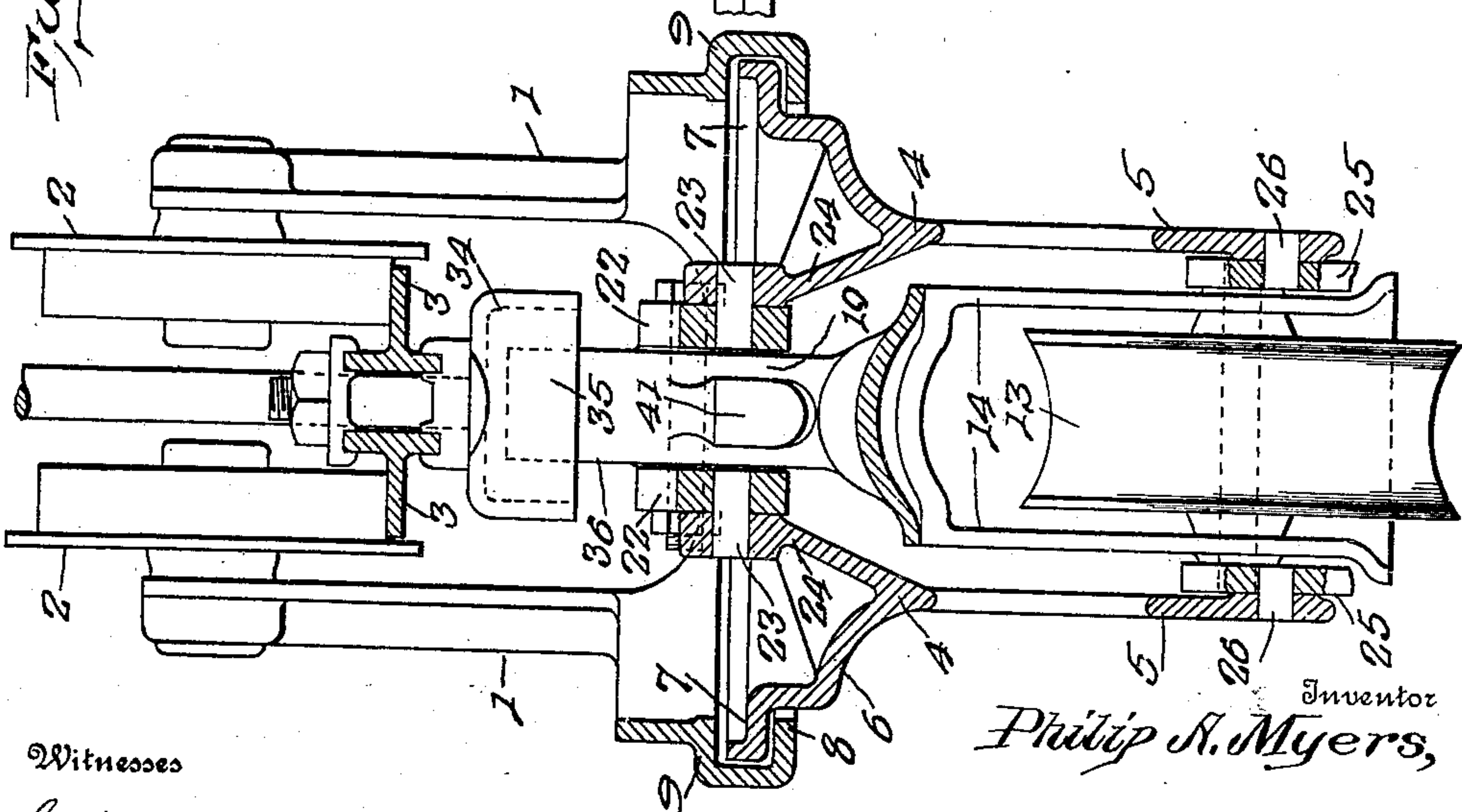


Fig. 4.



Witnesses

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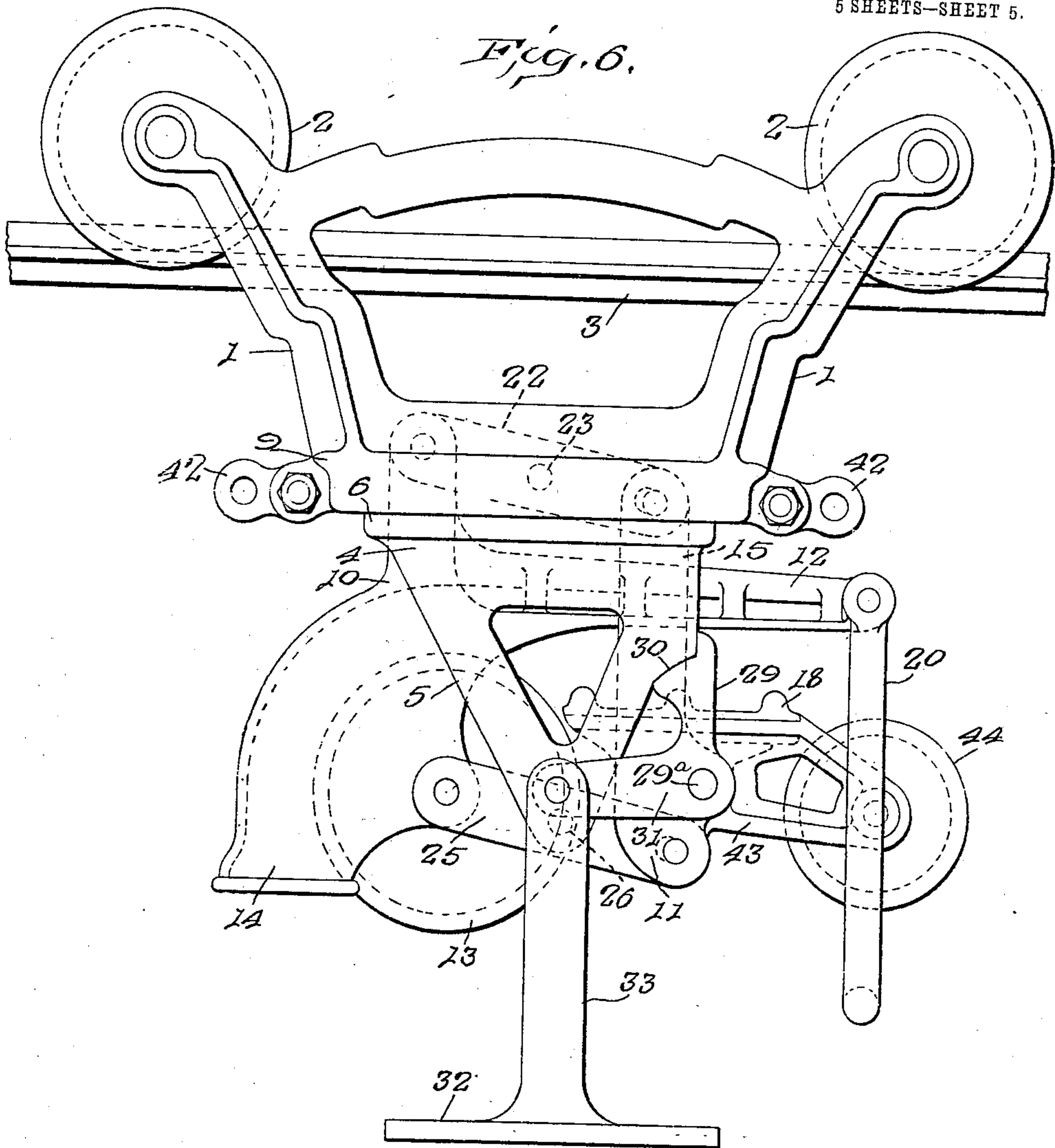
HAY CARRIER.

APPLICATION FILED APR. 16, 1908.

918,077.

Patented Apr. 13, 1909.

5 SHEETS—SHEET 5.



Witnesses

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UNITED STATES PATENT OFFICE.

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HAY-CARRIER.

No. 918,077.

Specification of Letters Patent.

Patented April 13, 1909.

Application filed April 16, 1908. Serial No. 427,519.

To all whom it may concern:

Be it known that I, PHILIP A. MYERS, a citizen of the United States, residing at Ashland, in the county of Ashland and State of Ohio, have invented certain new and useful Improvements in Hay-Carriers, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to hay carriers and the object of the same is to provide what may be designated a balanced-lock carrier, that is, a carrier in which the gripping jaws are movably supported and are connected one to the other in such a manner that they will move simultaneously each toward or away from the other, thereby reducing the amount of movement of the several parts, and, by enabling both jaws to be moved entirely out of the path of the hoisting rope, eliminating all chafing between that rope and the gripping jaws; in which the load will be supported from the rope lock in such a manner as to divide the weight of the same between the two gripping jaws; and further, to provide suitable automatic means for securing the rope lock in its open position and other automatic means for locking the carrier as a whole against movement on the track while the load is being hoisted. With these objects in view my invention consists in certain novel features of construction and in certain parts and combinations hereinafter to be described, and then more particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a side elevation of a hay carrier embodying my invention with the rope lock in its open position; Fig. 2 is a similar view with the rope lock closed; Fig. 3 is a front elevation of the same; Fig. 4 is a vertical section, taken on the line *z z* of Fig. 1 and looking in the direction of the arrows; Fig. 5 is a transverse section, taken on the line *y y* of Fig. 4 and looking in the direction of the arrows; Fig. 6 is a side elevation of a slightly modified form of the invention; and Fig. 7 is a detail of the lower oscillator, taken on the line *z z* of Fig. 1.

In these drawings, I have illustrated the preferred form of my invention and have shown the same as comprising a carriage 1 provided with wheels 2 adapted to travel upon a suitable track 3. Supported from this carriage 1, and preferably rotatably connected thereto, is a suitable supporting frame 4 which is here shown as comprising

two substantially triangular side members 5 having their apices extending downwardly and connected at their upper ends by an annular frame member 6 having an outwardly extending flange 7 adapted to engage and cooperate with an inwardly extending flange 8 carried by the lower portion 9 of the carriage 1, thereby forming a swiveled connection between the supporting frame 4 and the traveling carriage 1. Mounted within the supporting frame 4 is a suitable oscillating support, by the opposite sides of which are carried the gripping jaws forming the rope lock. This oscillating support preferably comprises two vertically movable members 10 and 11 located on the opposite sides of the fulcrum of the oscillating support. One of the vertically movable members, here shown as the member 10, carries the upper gripping jaw 12, which is preferably formed integral therewith and extends parallel with the side members 5 of the supporting frame 4. This member also has connected thereto a guide or pulley 13 for the hoisting rope and preferably has its lower end constructed in the form of a housing 14, within which said pulley 13 is journaled. The other vertically movable member, 11, preferably comprises two substantially parallel members or arms 15 which extend downwardly on opposite sides of the upper jaw 12 and have their lower portions extending inwardly, as shown at 16, to form a support for the lower gripping jaw 18, which is supported between the parallel arms 15 of the vertically movable member 11 and is preferably formed integral therewith, extends parallel and moves in substantially the same vertical plane with the upper jaw 12. The side members 15 of the vertically movable member 11 also have their upper extremities extending inwardly, and preferably joined one to the other, while the lower extremity of this member 11 is provided with depending apertured lugs 17. The upper jaw 12 is also provided with suitable means for securing thereto the upper end of a hoisting rope 19. In the present instance, this connecting means is in the form of a clevis 20 secured to the jaw 12 near the forward end thereof and having its side members spaced apart a distance sufficient to permit the free passage of the hoisting rope 19 as the same passes from the gripping jaws. The hoisting rope 19 is connected at

one end to the clevis 20 and extends downwardly through the sheave or sheaves 21 which carry the hay sling or fork, thence extends upwardly over the pulley 13 and between the jaws 12 and 18, and thence to the source of power, by means of which the load is to be elevated.

The vertically movable members 10 and 11 may be connected one to the other in any suitable manner. In the present instance, I have shown the same as connected at their opposite ends by suitable oscillators, the upper oscillator being here shown as comprising a pair of arms or levers 22 pivotally mounted at points intermediate their ends on the carriage 1 by means of a shaft 23 mounted on inwardly extending projections or lugs 24 carried by the upper portion of the supporting frame 4. These levers 22 are connected at their rear ends to the opposite sides of the upper portion of the vertically movable member 10, and at their opposite ends are connected to the upper portions of the corresponding arms 15 of the vertically movable member 11. The lower oscillator also comprises a pair of arms or levers 25 which are pivotally connected intermediate their ends to the side members 5 of the frame 4, preferably by means of stud-shafts 26 mounted in said side members near the apices thereof. These arms 25 extend on opposite sides of the pulley 13 and are pivotally connected to the side walls of the housing 14. Those portions of the arms 25 lying in front of the pivotal centers thereof converge forwardly, as shown at 27, and have their forward ends extending between the apertured lugs 17 of the arms 15 of the vertically movable member 11, as shown at 28. If desired, the lower oscillating member may be in the form of an integral bifurcated member, as herein shown, having the arms of the bifurcation forming the levers 25 of the oscillator. Thus it will be seen that the entire weight of the load is thrown upon the rope lock and that, through the medium of the oscillating support of these jaws, the weight of the load is divided between the two jaws and each jaw is moved toward the other to grip the rope, thus materially reducing the length of movement necessary to be imparted to either one of the jaws and providing a strong, positive rope lock and one which, when in its open position, will be entirely out of engagement with the hoisting rope, and, therefore, will not chafe that rope when the load is being hoisted.

A suitable lock is provided for retaining the rope lock in its open position while the load is being elevated and preventing the weight of the load from locking the rope against movement. As herein shown, this locking means comprises suitable dogs 29, preferably two in number, and pivotally mounted on the opposite sides of the verti-

cally movable member 11 by means of a shaft 29^a mounted in a transverse bearing lug 29^b, carried by the member 11 beneath the lower jaw 18 and preferably cast integral therewith, and adapted to engage shoulders or projections 30 formed on the side members 5 of the frame 4, the relation of the dogs 29 and the shoulders 30 being such that when the dogs are in engagement with said shoulders, the lower jaw 18, which is carried by the vertically movable member 11 upon which the dogs are mounted, will occupy such a position relatively to the frame members 5 that the rope lock will be in its open position and will be so held inasmuch as the lower jaw is held against movement. In order that this locking means may be automatically released to permit the jaws to close when the load has reached the desired elevation, each of the dogs 29 is provided with a rearwardly extending arm 31, to which is connected a suitable bumper, preferably comprising a trip plate 32 located in the path of the upwardly moving pulleys 21 which support the load and connected to the rear ends of the arms 31 by upwardly extending members or arms 33, whereby the engagement of the plate 32 by the upwardly moving load will rock the arm 31 and the dog 29 about their pivotal center and move the dog out of engagement with the shoulder 30, thereby permitting the weight of the load to move the gripping jaws each toward the other and lock the hoisting rope against movement relatively thereto. Suitable means are also provided for holding the hay carrier as a whole against movement on the track 3 while the load is being elevated, and, to this end, a suitable stop block 34 is secured to the track 3, preferably immediately above the point at which the wagon is to be unloaded. This stop block is preferably cup-shaped or provided at its opposite ends with downwardly extending flanges 35 and adapted to receive between said projections or flanges 35 an upwardly extending stop or projection 36 movably mounted on the frame 4 and preferably carried by that side of the oscillating support which carries the upper jaw 12. In the present instance, this projection 36 is shown as a continuation of the vertically movable member 10 and occupies such relation thereto that, when the gripping jaws are in their open position, the upper end of the projection 36 will lie above the lower ends of the flanges 35 of the stop block, but, when the gripping jaws are in their closed position, the upper end of said stop 36 will lie below the lower ends of the flanges 35, thus leaving the carriage free to move longitudinally of the track 3. Inasmuch as the stop 36 forms an oscillating support for the gripping jaws, it will be seen that the locking dog 29 will serve to control the movement of the stop 36, as well as of the gripping jaws, and that

when said jaws are locked in their open position, the stop 36 will be held in such a position as to engage the stop block 34 and thereby prevent movement of the carriage longitudinally of the track. Suitable means are also provided for moving the jaws into their open position and for moving the stop 36 into such a position as to engage the stop block 34 when the empty carrier is returned to its normal position. This actuating means, as here shown, comprises a suitable pivoted lever or bell-crank-shaped dog 37 which is pivotally supported on the frame 4, preferably by mounting the same upon a suitable shaft 38 mounted in the inwardly extending lugs or projections 24. The vertically extending arm 39 of the dog 37 is of such a length that, when in its normal or vertical position, it will be engaged by the depending flange or projection 35 of the stop block as the carriage is moved along the track 3. The horizontal arm 40 of the stop 37 is connected to the stop 36, preferably by inserting the rounded end of said arm 40 in a recess 41 formed in the vertically movable member 10. Thus, it will be seen that when the arm 39 of the dog 37 comes into engagement with the flange 35 of the stop block, the dog will be rocked about its pivotal center, the stop 36 moved into its uppermost position, the gripping jaws moved into their open position and the dogs 29 permitted to move into engagement with the shoulders 30 of the frame members 5, this movement of the dogs 29 being automatically accomplished through the weight of the bumper which is carried by the arms 31 and which tends to move the dogs toward the frame members 5.

From the foregoing description it will be apparent that with the parts shown in the position in Fig. 1, the load will be connected to the pulleys 21 and power applied to the hoisting rope 19, and, inasmuch as the carriage is held against movement on the track 3, the pull on the hoisting rope will serve to elevate the load until the same is brought into engagement with the bumper plate 32, thereby disengaging the dog 29 from the frame and allowing the weight of the load to move the gripping jaws 12 and 18 into engagement with the hoisting rope, thereby locking the same against further movement relatively to the frame 4, and, at the same time, moving the stop 36 out of alignment with the stop block 34 and permitting the pull on the hoisting rope 19 to move the carrier along the track 3 to convey the load to the point where it is desired to dump the same. When the load has been dumped, the carriage is returned to its normal position by any suitable means, such as a return rope, which may be secured to the carriage in any suitable manner, as by means of apertured lugs 42. When the carriage arrives at its position above the wagon which is being

unloaded, the arm 39 of the dog 37 will engage the stop block 34, thereby rocking said dog about its pivotal center and causing the arm 40 thereof to move the stop 36 into its locking position, and, at the same time, move the jaws 12 and 18 apart and permit the locking dogs 29 to engage the shoulders 30 on the respective side members 5 of the frame 4. It will also be observed that the supporting frame 4 being swiveled within the carriage 1 and all the parts of the hoisting mechanism and rope lock being carried by this supporting frame that the mechanism is reversible and can be operated in either direction and the load conveyed along the track 3 on either side of the stop block 34, and that the locking mechanism for securing the carriage against movement on the track will operate equally well to prevent movement in either direction.

While the invention has been above described as embodied in that form of carrier in which the hoisting rope serves to elevate the load and also to convey the carriage longitudinally of the track 3, and in which the carriage is provided with suitable locking mechanism to prevent its movement during the hoisting of the load, it will be apparent that the invention can also be readily applied to what is known as the right angle carrier, that is, a carrier in which the load is hoisted at right angles to the track and means other than the hoisting rope employed for moving the carriage along the track. In this construction, as shown in Fig. 6, the stop block 34 and the stop 36 are omitted and the lower jaw 18 is provided with an extension or frame 43 in which is journaled a pulley 44 over which the hoisting rope extends, the clevis 20 being of such a construction as to permit the free movement of the pulley 44 within the same. In the operation of this construction the frame and gripping jaws extend at right angles to the carriage which is located on the track immediately above the point from which the load is to be lifted. Thus, the pull of the hoisting rope, which extends over the pulleys 13 and 44 and thence to the source of power, will be exerted at right angles to the track 3 and will not tend to move the carriage longitudinally thereof. With the exception of the changes noted, the construction and operation of this modified form of the device are the same as that of the principal form.

I wish it to be understood that I do not desire to be limited to the exact details of construction shown and described, for obvious modifications will occur to a person skilled in the art. Further, I wish it to be understood that while I have shown and described the invention as applied to hay carriers, it can be readily adapted to other uses, such, for instance, as store-service carriers,

to which use the modification shown in Fig. 6 is particularly adapted.

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

1. In a carrier, the combination, with a frame provided with a rope lock comprising a pair of gripping jaws, each movable toward the other, of a hoisting rope operatively connected to both of said jaws, whereby the weight of the load carried by said rope will tend to move each of said jaws toward the other.

2. In a hay carrier, the combination, with a frame provided with a rope lock comprising a pair of gripping jaws extending in the direction of travel of said carrier and each movable in a vertical plane, of a hoisting rope operatively connected to both of said jaws, whereby the weight of the load carried by said rope will tend to move each of said jaws toward the other.

3. In a hay carrier, a frame provided with a rope lock comprising a pair of gripping jaws, each movably mounted on said frame, and means for so connecting said jaws one to the other that, when one of said jaws is moved in one direction, the other of said jaws will be moved in the opposite direction.

4. In a carrier, a frame provided with a rope lock comprising a pair of gripping jaws, a support therefor pivotally mounted in said frame, said jaws being connected to said support on the opposite sides of its pivotal center.

5. In a carrier, a frame, a plurality of levers pivotally supported on said frame at points between their ends, vertically movable members extending between the adjacent ends of said levers, and gripping jaws carried by said vertically movable members.

6. In a carrier, a frame, an oscillating support mounted on said frame, gripping jaws connected to said oscillating support near the opposite ends thereof, and load-supporting means connected to said oscillating support.

7. In a carrier, a frame, an oscillating support mounted on said frame, upper and lower gripping jaws connected to said oscillating support near the opposite ends thereof, and load-supporting means connected to that end of said oscillating support to which said upper jaw is connected.

8. In a carrier, a frame, an oscillating support mounted in said frame, a jaw supported from one side of said oscillating support, a sheave supported from said oscillating support near one end of said jaw, means for connecting one end of a hoisting rope to said jaw, and a second jaw connected to the opposite side of said oscillating support.

9. In a carrier, a frame, a pair of oscillators mounted on said frame one above the other, vertically movable members extending between the adjacent ends of said oscillators, a gripping jaw carried by the vertically mov-

able member at one end of said oscillators, a rope sheave supported from said vertically movable member, means for connecting one end of the hoisting rope to said jaw, and a second jaw supported between said oscillators near the opposite ends thereof.

10. In a carrier, a frame provided with a rope lock comprising a pair of gripping jaws movable each toward the other, and means for positively controlling the movement of said jaws.

11. In a carrier, a frame provided with a rope lock comprising a pair of gripping jaws movable each toward the other, and a detent adapted to retain said jaws in their open position.

12. In a carrier, a frame provided with a rope lock comprising a pair of gripping jaws movable each toward the other, and a detent connected to one of said jaws and adapted to engage said frame to retain said jaws in an open position.

13. In a carrier, a frame provided with a rope lock comprising a pair of gripping jaws movable each toward the other, a detent connected to one of said jaws and adapted to engage said frame, a bumper connected to said detent and adapted to be engaged by the upwardly moving load to disengage said detent from said frame.

14. In a carrier, a frame having a shoulder and provided with a rope lock comprising a pair of gripping jaws connected one to the other and adapted to move simultaneously in opposite directions, a detent connected to one of said jaws adapted to engage the shoulder on said frame, and means for automatically moving said detent out of engagement with said shoulder.

15. In a carrier, a frame provided with a rope lock comprising a pair of gripping jaws movable each toward the other, means for moving said jaws into their open position, and means for locking said jaws in their open position.

16. In a carrier, the combination, with a track, and a carriage mounted thereon, of a frame carried by said carriage and provided with a rope lock comprising a pair of oppositely moving gripping jaws, means for controlling the movement of said gripping jaws, and means carried by said frame for locking said carriage against movement on said track.

17. In a carrier, the combination, with a track, and a carriage mounted thereon, of a frame supported by said carriage and provided with a rope lock comprising a pair of gripping jaws, a detent for holding said jaws in their open position, means for holding said carriage against movement on said track, and means for simultaneously releasing said detent to allow said jaws to engage the hoisting rope and releasing said holding means to permit said carriage to move longitudinally of said track.

18. In a carrier, the combination, with a track, a carriage mounted on said track, and a stop block carried by said track, of a frame supported by said carriage and provided with
 5 a rope lock comprising a pair of gripping jaws, means for controlling the movement of said gripping jaws, a stop movably mounted on said frame and adapted to engage said
 10 stop block, and means for simultaneously actuating said stop and said controlling means for said jaws.

19. In a carrier, the combination, with a track, a carriage mounted thereon, and a stop block secured to said track and having
 15 downwardly extending projections at the opposite ends thereof, of a frame, a rope lock carried by said frame, means for controlling the movement of said rope lock, a stop movably mounted on said frame and adapted to
 20 be moved into alinement with the projections on said stop block, and means for controlling the movement of said stop and the controlling means for said rope lock.

20. In a carrier, the combination, with a
 25 track, a carriage mounted thereon, and a stop block secured to said track, of a frame supported from said carriage and provided with a rope lock comprising a pair of gripping jaws, an oscillating support for said
 30 gripping jaws, a stop carried by said oscillating support and adapted to engage said stop block, and means for controlling the movement of said oscillating support.

21. In a carrier, the combination, with a
 35 track, a carriage mounted thereon, and a stop block secured to said track, of a frame supported from said carriage, an oscillating support mounted on said frame, gripping jaws carried by the opposite sides of said
 40 oscillating support, a stop mounted on said oscillating support and adapted to engage said stop block, and means for actuating said

oscillating support to move said jaws into their open position and to move said stop into its operative position.

22. In a carrier, the combination, with a track, a carriage mounted thereon, and a stop block secured to said track, of a frame supported from said carriage, an oscillating
 50 support mounted on said frame, gripping jaws carried by the opposite sides of said oscillating support, a stop mounted on said oscillating support and adapted to engage said stop block, means for actuating said
 55 oscillating support to move said jaws into their open position and to move said stop into its operative position, and a detent carried by said oscillating support adapted to engage said frame to retain said jaws in their
 60 open position and said stop in its operative position.

23. In a carrier, the combination, with a track, a carriage mounted thereon, and a stop block secured to said track, of a frame supported from said carriage, an oscillating
 65 support mounted on said frame, upper and lower gripping jaws carried by the opposite sides of said oscillating support, a stop carried by that side of said oscillating support to which the upper gripping jaw is secured, a
 70 dog pivotally mounted on said frame and having one arm in engagement with said oscillating support and the other arm adapted to engage said stop block and actuate said
 75 oscillating support to move said stop into operative position and to move said gripping jaws apart.

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

PHILIP A. MYERS.

Witnesses:

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 W. W. INGMAND.