

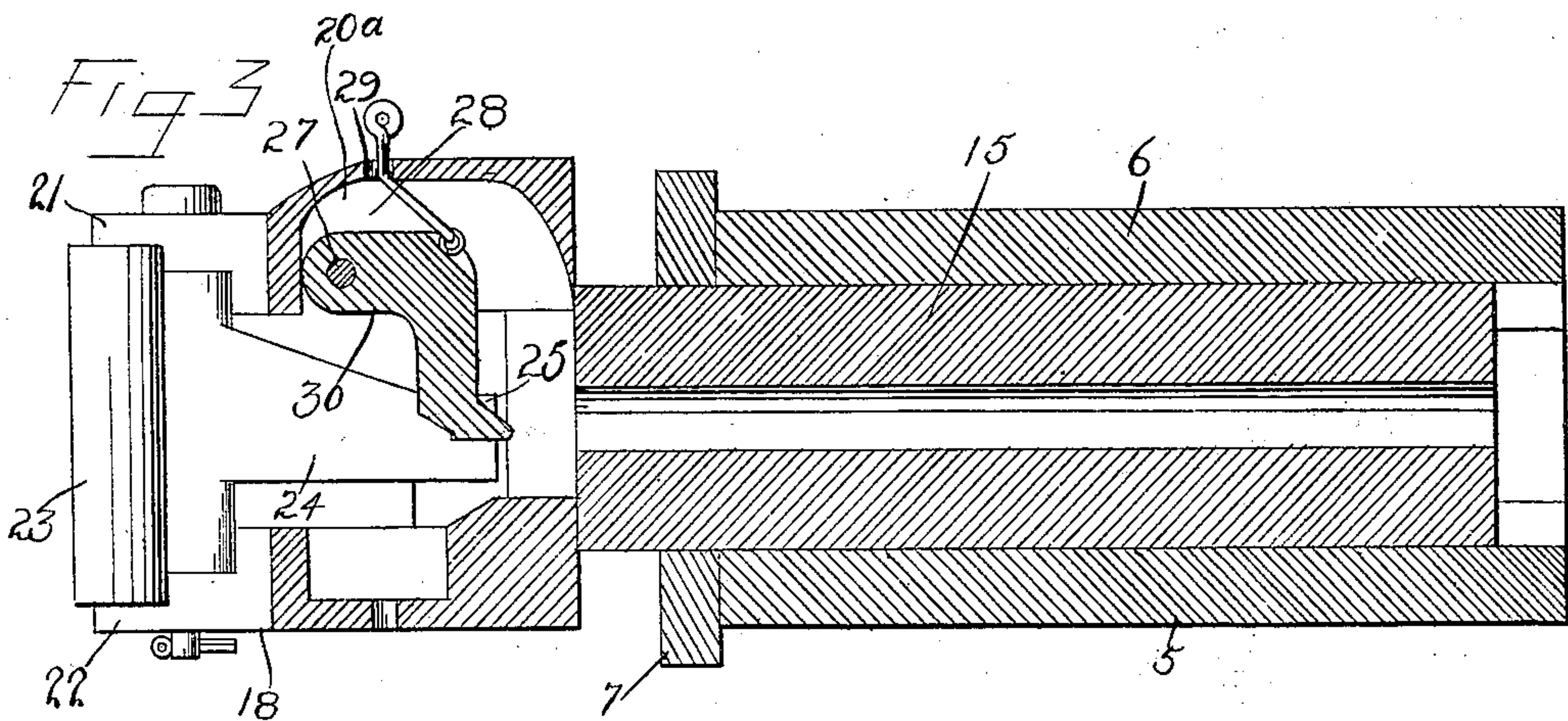
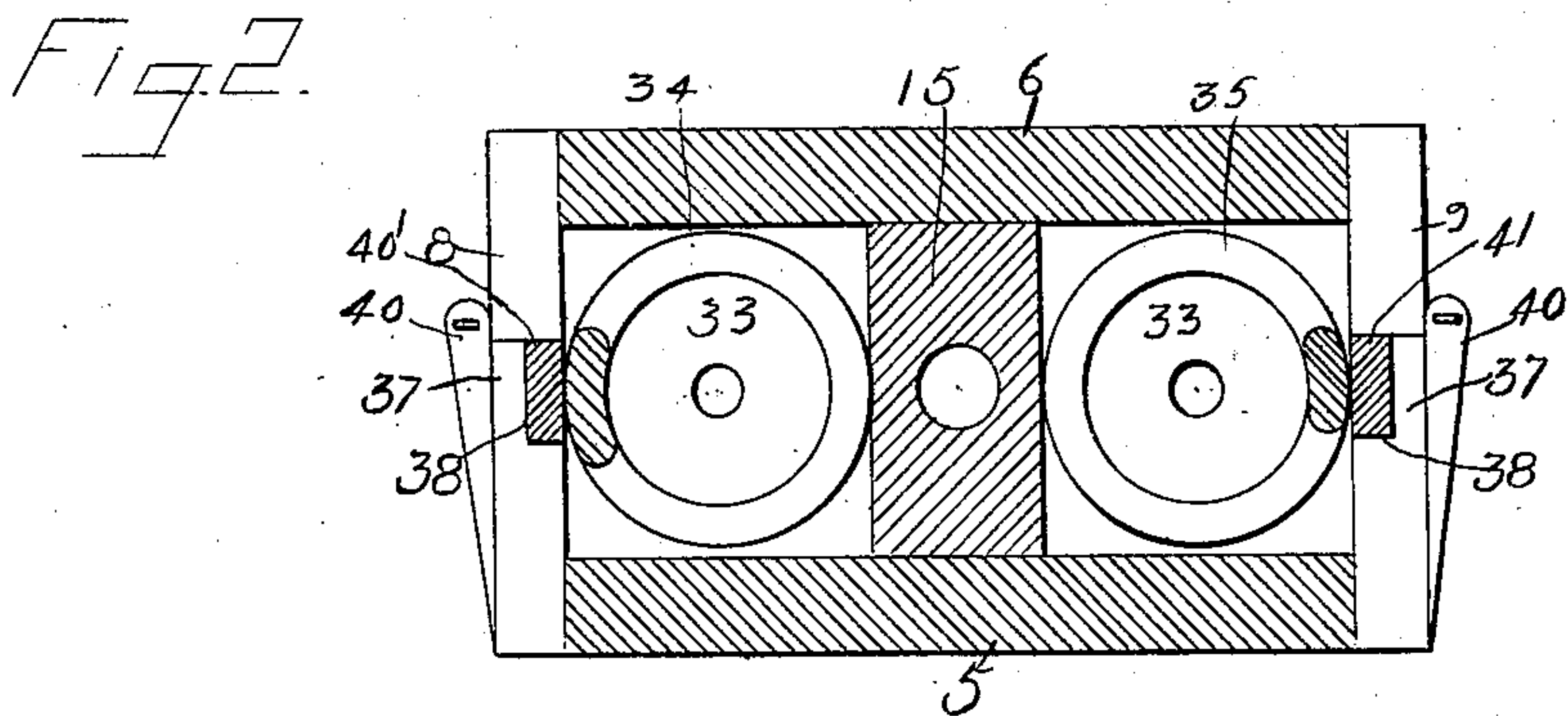
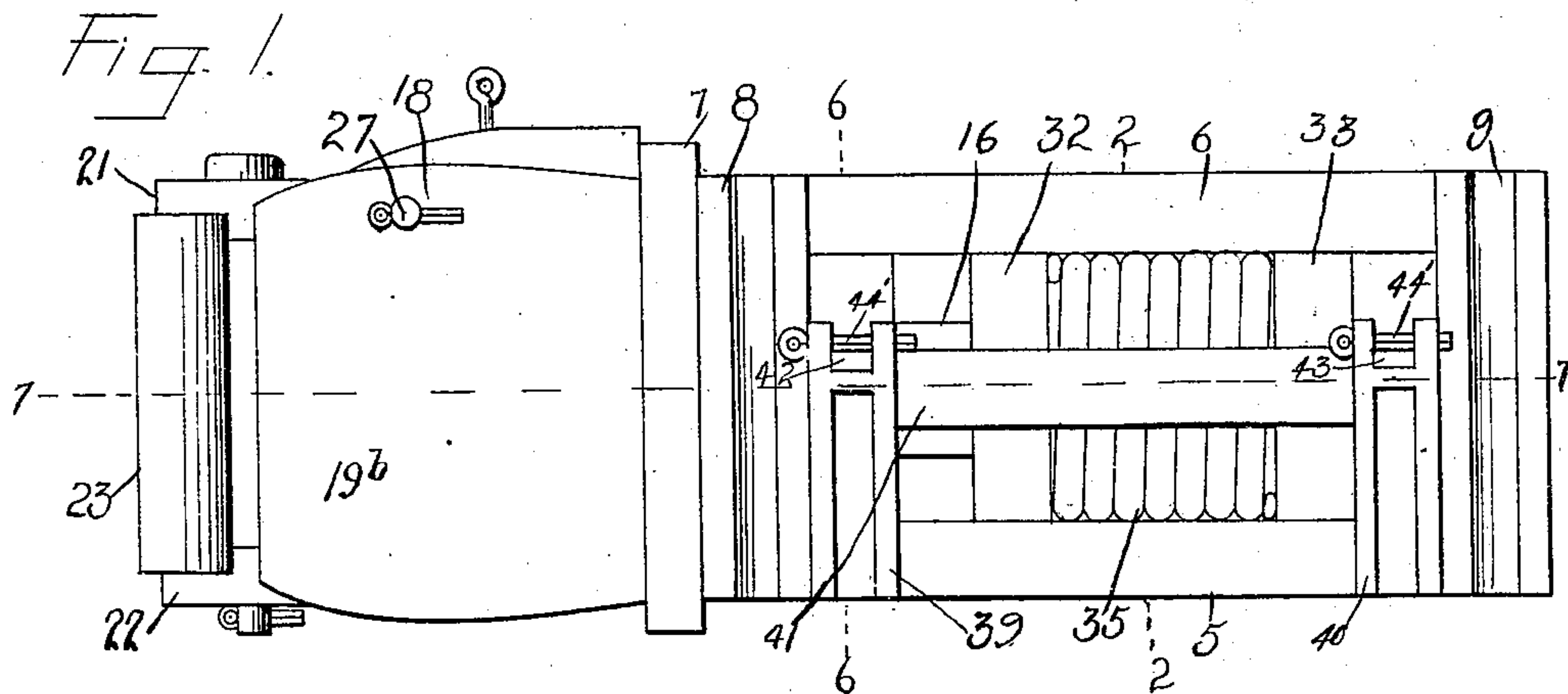
L. DETHIER.
COUPLING.

APPLICATION FILED JULY 21, 1909.

Patented May 9, 1911.

3 SHEETS—SHEET 1.

991,835.



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Witnesses

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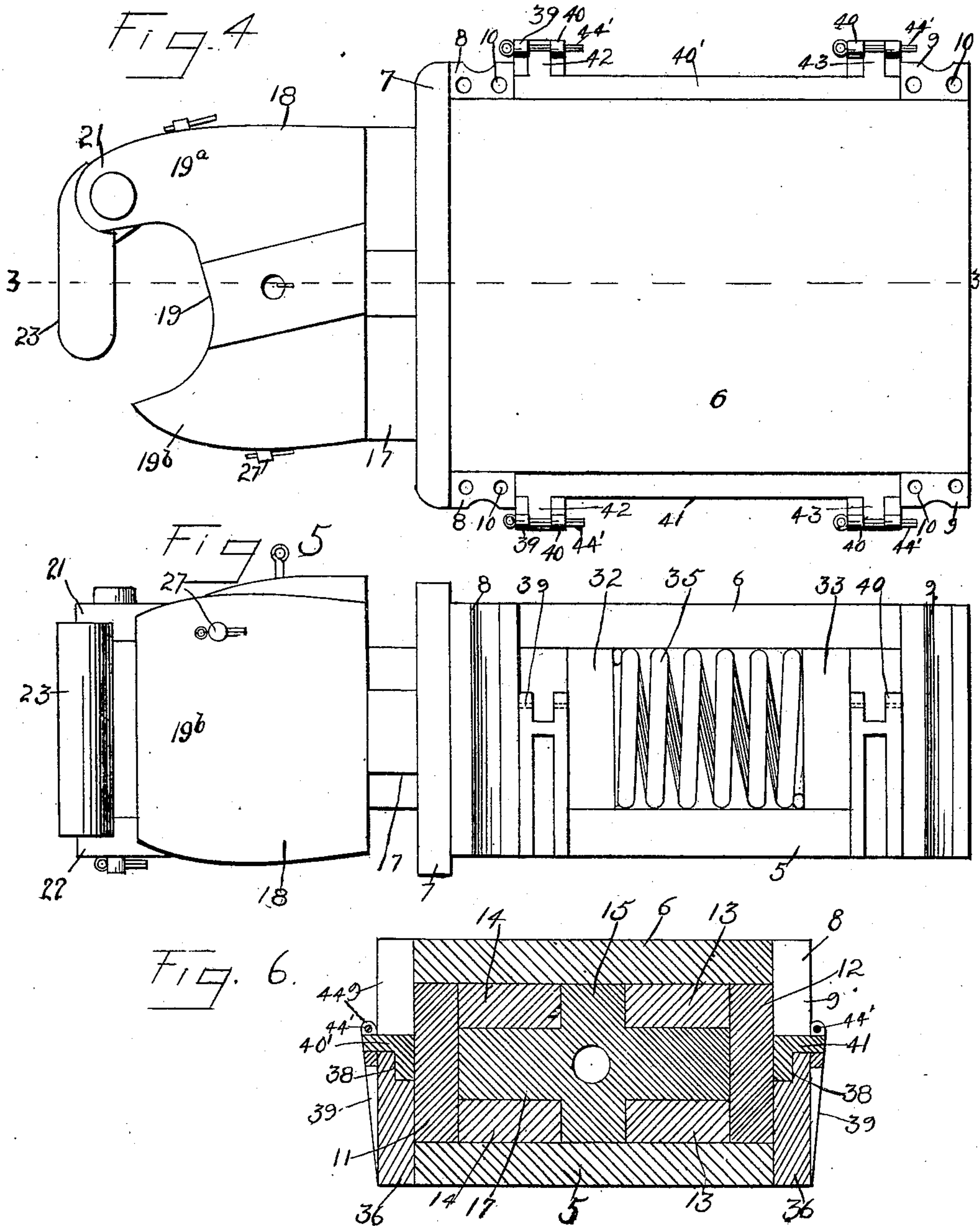
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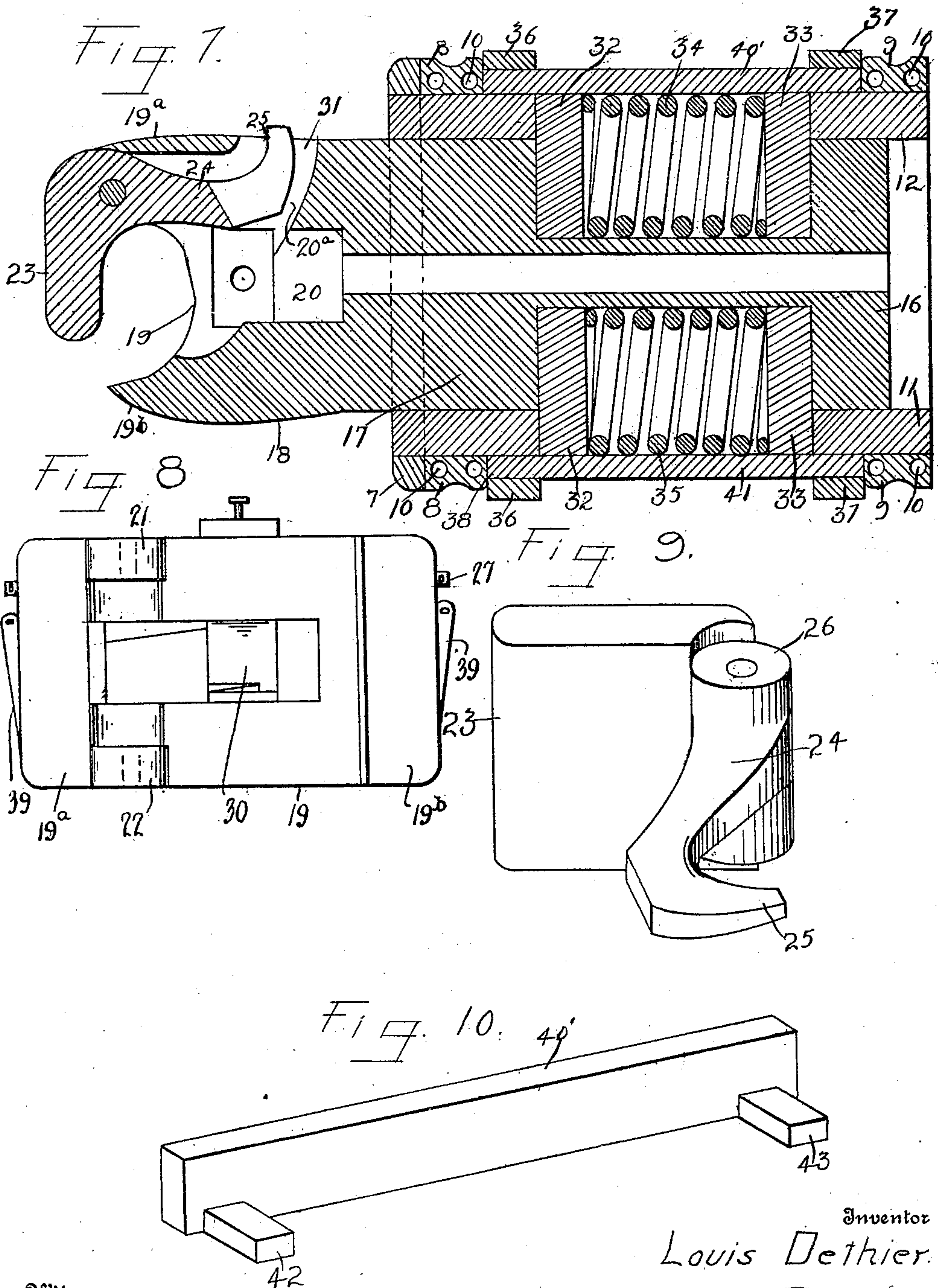
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UNITED STATES PATENT OFFICE.

LOUIS DETHIER, OF MOUNT VERNON, OHIO.

COUPLING.

991,835.

Specification of Letters Patent.

Patented May 9, 1911.

Application filed July 21, 1909. Serial No. 508,804.

To all whom it may concern:

Be it known that I, LOUIS DETHIER, a citizen of the United States, residing at Mount Vernon, in the county of Knox, State of Ohio, have invented certain new and useful Improvements in Couplers; and I do hereby 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.

This invention relates to improvements in car couplers and more particularly to the M. C. B. type.

It has for its object the provision of a device of that kind wherein the drawhead is yieldingly held, when in normal position, from outward and inward movements.

Another object is the provision of a device wherein the springs which hold the drawhead in its normal position may be easily detached from the structure without the necessity of removing the cheek plates or screwing bolts or in any way rendering the operation difficult or calling for the services of an expert mechanic.

A further object of the invention is the provision of a construction wherein the springs will at all times be visible so that it can be readily determined when these members become broken.

With these and other objects in view as will more fully hereinafter appear, the present invention consists in certain novel details of construction and arrangement of parts, hereinafter fully described, illustrated in the accompanying drawings and more particularly pointed out in the appended claim, it being understood that various changes in the form, proportion, size and minor details of the device may be made without departing from the spirit or sacrificing any of the advantages of the invention.

In the accompanying drawings forming part of the specification:—Figure 1 is a side elevation of the device showing the gear in compressed position. Fig. 2 is a sectional end elevation on the line 2—2 of Fig. 1. Fig. 3 is a longitudinal view on the line 3—3 of Fig. 4. Fig. 4 is a plan view of the device. Fig. 5 is a view similar to Fig. 1 with the retaining members for the springs removed and the gear in expanded position. Fig. 6 is a sectional end elevation on the line 6—6 of Fig. 1. Fig. 7 is a sectional

plan view approximately on the line 7—7 of Fig. 1. Fig. 8 is a front end view of the device. Fig. 9 is a detailed perspective of the swinging knuckle. Fig. 10 is a similar view of the member for retaining the spring.

Similar numerals of reference are employed to designate corresponding parts throughout.

As shown in the drawings, a drawhead is inclosed in a casing which is here shown as formed with a bottom plate 5 and top plate 6, the forward ends of which are connected by a front plate 7. The plates are held in spaced relation by means of side posts 8 and 9 which are arranged adjacent the opposite ends of the top and bottom plates and are provided with vertical openings 10 which receive bolts by means of which the casing is secured to the car.

Formed on the inner faces of the side posts with their opposite ends bearing on the top and bottom plates 5 and 6 are plates 11 and 12 which correspond in length to the distance between the plates 5 and 6, and formed on the top and bottom plates 5 and 6 with their outer sides bearing on the plates 12 and 11 are two guides or plates 13 and 14, the opposed sides of which are spaced and arranged on either side of the longitudinal centers of the top and bottom plates as clearly shown in Fig. 6. It is to be understood that this construction is the same at both ends of the casing as shown in Fig. 7, whereby substantially cross shaped guides are formed.

The drawbar is designated by the numeral 15 and is of a size to fit between the opposed faces of the plates 13 and 14 carried by the top and bottom plates 5 and 6. Extending transversely and arranged adjacent the rear end of the drawbar is a cross piece 16 of considerably less thickness than the drawhead and of a length to fit between the side plates 11 and 12 formed on the inner faces of the posts 8 and 9. The outer end portions of the drawhead is provided with a similar cross piece 17 which is adapted to fit between the side plates at the outer end of the casing. With this construction it is obvious that the drawhead and its cross pieces are slidingly fitted in the casing and are held against excessive lateral movement by virtue of the plates.

The outer forward end of the drawbar terminates in a coupling head 18, the front

face of which has a vertical substantially semicircular depression 19, on opposite sides of which are jaws 19^a and 19^b. The chamber 20, which communicates with the recess 19, is formed on the coupling head and has on one side a recess 20^a forming a lateral extension on one side of said chamber and which extends into the jaw 19^a and at its rear end opens on one side of the coupling head as at 31. Said jaw 19^a is formed at its upper and lower sides at its outer or front end with spaced lugs 21 and 22. A swinging knuckle 23 is pivotally mounted between the said lugs and is provided on one face and at its pivoted end with a right angular extension 24 which decreases in thickness toward its outer end and terminates in a lateral offset 25, the upper side of said extension forming an inclined plane. Where the extension 24 meets the knuckle 23 a boss 26 is formed which fits between the lugs 21 and 22 and is provided with an opening which aligns with similar openings formed in the latter, these openings receiving the usual pintles. Extending through the opposite sides of the coupler head and to the rear of the semi-circular depression 19 is a shaft 27 and formed on the upper side wall of the said recess 20 is a recess 28 and extending through this recess to the exterior of the coupler head is an opening 29. Journaled on the shaft 27 is a keeper 30. The latter is preferably in the form of a bell crank lever, one arm of which is journaled on the shaft 27 and disposed in the recess 28, while the opposite arm extends vertically downward and into the path of movement of the tail 25 of the knuckle. With this construction it is obvious when the knuckle is moved to closed position, the reduced end of the tail 25 will lift the lower end of the keeper 30 and the latter will ride over the inclined side of the extension 24 and tail 25 until the knuckle arrives at closed position after which the keeper will gravitate to one side of the extension and prevent outward movement of the knuckle. The extremity of the tail 25 will, when the jaws are in closed position, extend through an opening 31 formed in the side of the coupler head as clearly shown in Fig. 7.

By referring now to Figs. 1, 5 and 7, it will be seen that disposed in the space between the posts 8 and 9 on each side of the casing are two pairs of blocks 32 and 33. Each of these members is substantially square in contour and of a size to fit between that portion of the top and bottom plates 5 and 6 not covered by the plates 13 and 14. When in this position, the outer sides of the blocks will be in coincidence with the inner sides of the side blocks 11 and 12, as clearly shown in Fig. 7.

It might here be stated, that the space between the opposed sides of the cross pieces

16 and 17 arranged adjacent the opposite ends of the drawhead corresponds exactly to the distance between the opposed inner faces of the plates carried by the side posts and top and bottom plates so that when the blocks 32 and 33 are in position as shown in Fig. 7, their remote faces will bear on the opposed faces of the plates carried by the top and bottom plates 5 and 6 and the side posts and opposed faces of the cross pieces. Disposed in the space between the blocks 32 and 33 with their terminals bearing on the opposed faces of said blocks are a pair of helical compression springs 34 and 35, the function of which is to yieldingly hold the drawhead in its normal position, that is to say, with a space between the rear end of the coupler head and front end 7 of the casing. Thus it will be seen during the operation of coupling, the drawhead will move inwardly for a distance equal to the space between the rear end of the coupler head and front wall 7 of the casing, whereby the springs 34 and 35 will be compressed by virtue of the front cross piece bearing on the blocks 32. After the coupling operation has been completed and the train begins to move, the drawhead will move outwardly on the initial pull of the engine, whereby the springs 34 and 35 will be again compressed by virtue of the rear cross piece 16 bearing on the rear blocks 33. Thus it will be seen that with this construction the jar usually experienced at the initial movement of the car will be eliminated.

It will be seen by referring to Fig. 7 that the inner sides of the springs 34 and 35 bear on the drawhead while their outer sides are visible in the space between the blocks. It is obvious that some means must be employed for maintaining the springs in position and in order to accomplish this result the following construction is employed:—By referring now to Figs. 1, 2 and 4 to 7 inclusive it will be seen that on the opposed sides of the corner posts 8 and 9 are two pairs of sockets 36 and 37. Each of these sockets is preferably formed of a single piece of metal, oblong in contour and substantially rectangular in cross section and of a length corresponding to one-half the length of the posts. The sockets are so secured that their lower sides and outer faces will be coincident with the lower sides and outer faces of the posts and formed in their upper ends are vertical recesses 38. Formed integral or otherwise secured to the outer faces of the sockets and extending longitudinally of the same are a pair of spaced lugs 39 and 40, the upper ends of which extend considerably beyond the upper ends of the sockets as clearly shown in Figs. 1, 4 and 6 and the function of which will appear later. A pair of keepers are designated by the numerals 40' and 41. Each of these members is pref-

erably formed of a single piece of metal, oblong in contour and rectangular in cross section. The length of each keeper corresponds exactly to the distance between the 5 opposed faces of the posts and the width and thickness of each keeper corresponds to the width and depth of the recesses 38. Projecting laterally from the opposite ends of each keeper are a pair of tongues 42 and 10 43, of a width to fit between the projecting portions of the lugs 39 and 40, extending beyond the upper ends of the sockets. The lugs are provided adjacent their upper ends with a pair of alining openings 44 which are 15 disposed directly above the tongues 42 and 43 when the latter are placed between the lugs, and are adapted to receive a suitable cotter 44' which maintains the keepers in position. With this construction it is ob- 20 vious that the springs will at all times be visible and in order to remove either of said springs the operation can be accomplished by simply removing the cotter 44' and then lifting the keepers from the sockets after 25 which the blocks and springs may be removed with a common tool. It will be observed when the springs and blocks have been removed that the drawhead may be readily moved from its position in the casing. 30 With this construction it is obvious that it will be possible to repair breaks in the coupler apparatus of a car without the necessity of sending the latter to a shop. It can be seen that in order to replace a broken 35 spring or in fact a new drawhead the new operation can be accomplished in a few minutes. It will be further observed that the

device is exceedingly simple in structure and comparatively inexpensive to manufacture, embodying few parts.

Having thus described my invention what 40 is claimed as new, is:—

In a draft rigging, a casing having longitudinal openings in its vertical sides, two longitudinal movable follower blocks in the 45 opposite ends of said casing respectively, means to limit the movement of said follower blocks, a longitudinally movable draw bar having cross pieces operating between the top and bottom and the vertical sides of 50 said casing and bearing respectively against the front side of the front follower blocks and the rear side of the rear follower blocks and further provided with a narrowed portion extending through said cross pieces and 55 operating between the said follower blocks, longitudinally disposed springs between said narrowed portions of the draw bar and the vertical sides of the casing, bearing against the front and rear follower blocks, and 60 keepers and means to detachably mount the said keepers on the vertical sides of the casing, across said openings therein and at the outer sides of the springs, said keepers retaining said springs in place and permitting 65 removal thereof through said openings of the casing.

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

LOUIS DETHIER.

Witnesses:

ROBT. T. CARR,
ALINE NASH.