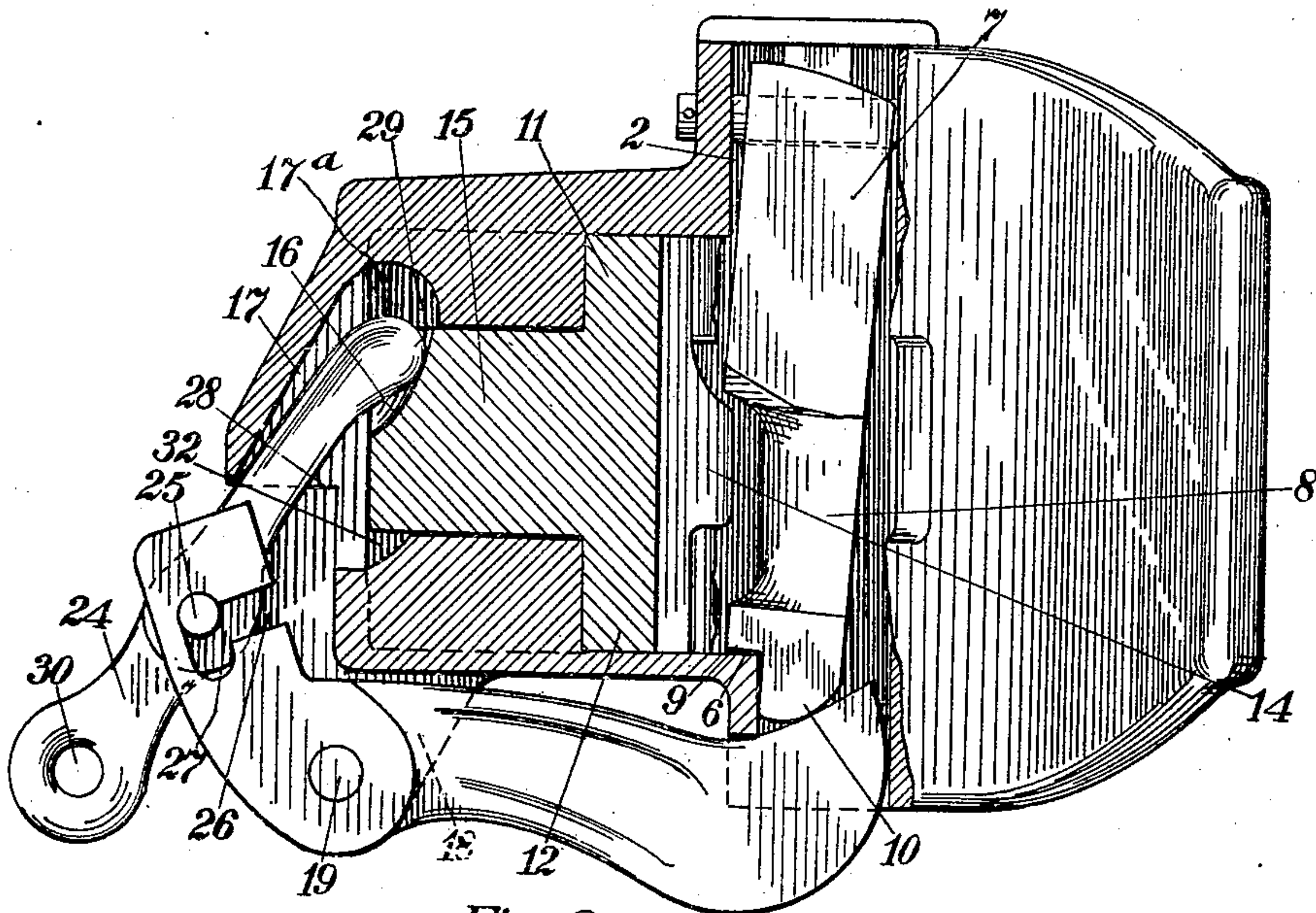
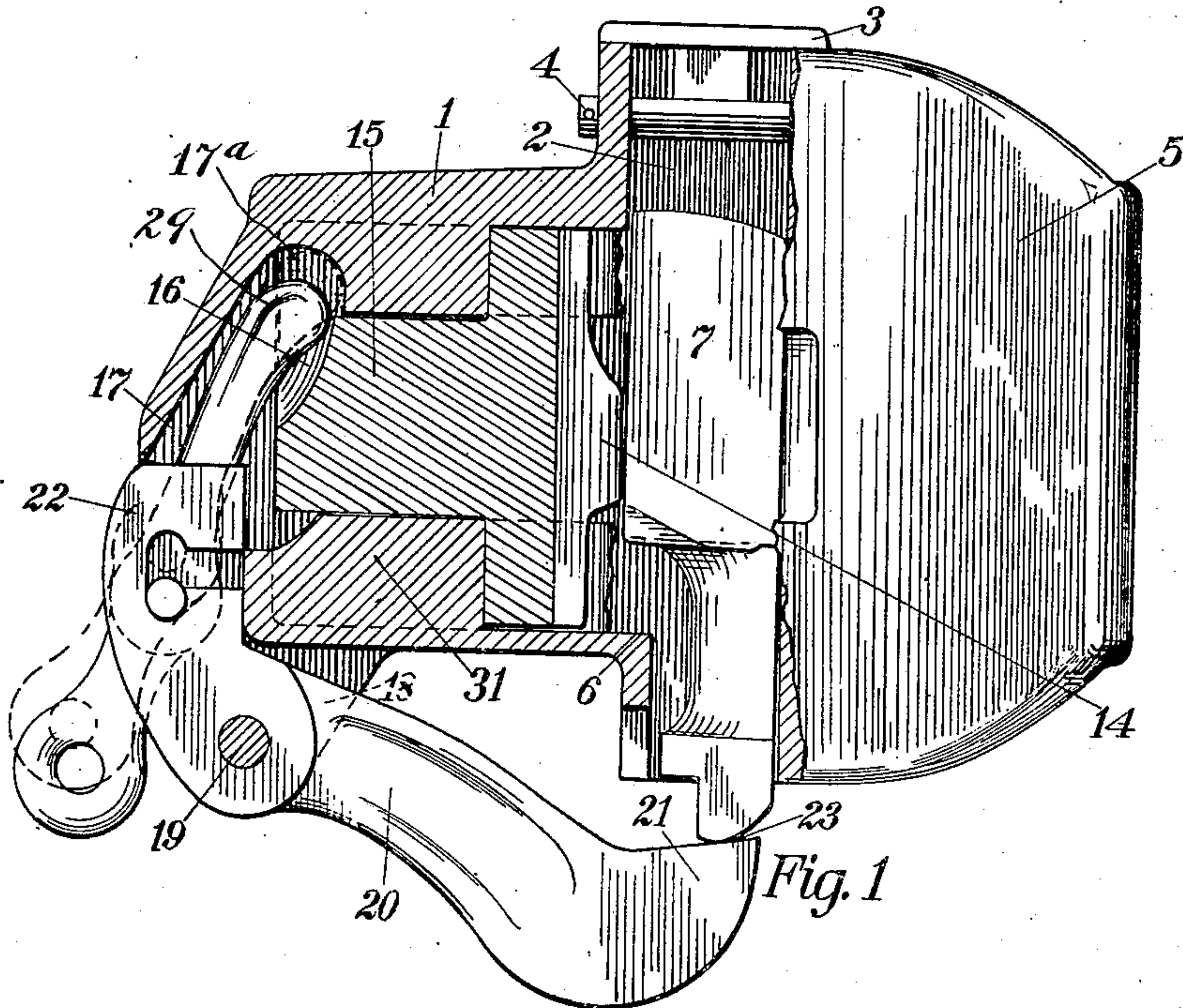


J. TIMMS.
CAR COUPLING.
APPLICATION FILED FEB. 1, 1909.

969,674.

Patented Sept. 6, 1910

3 SHEETS—SHEET 1.



WITNESSES:

P. Rogers
Robert Meiklejohn

Fig. 2

James Timms, INVENTOR.

BY

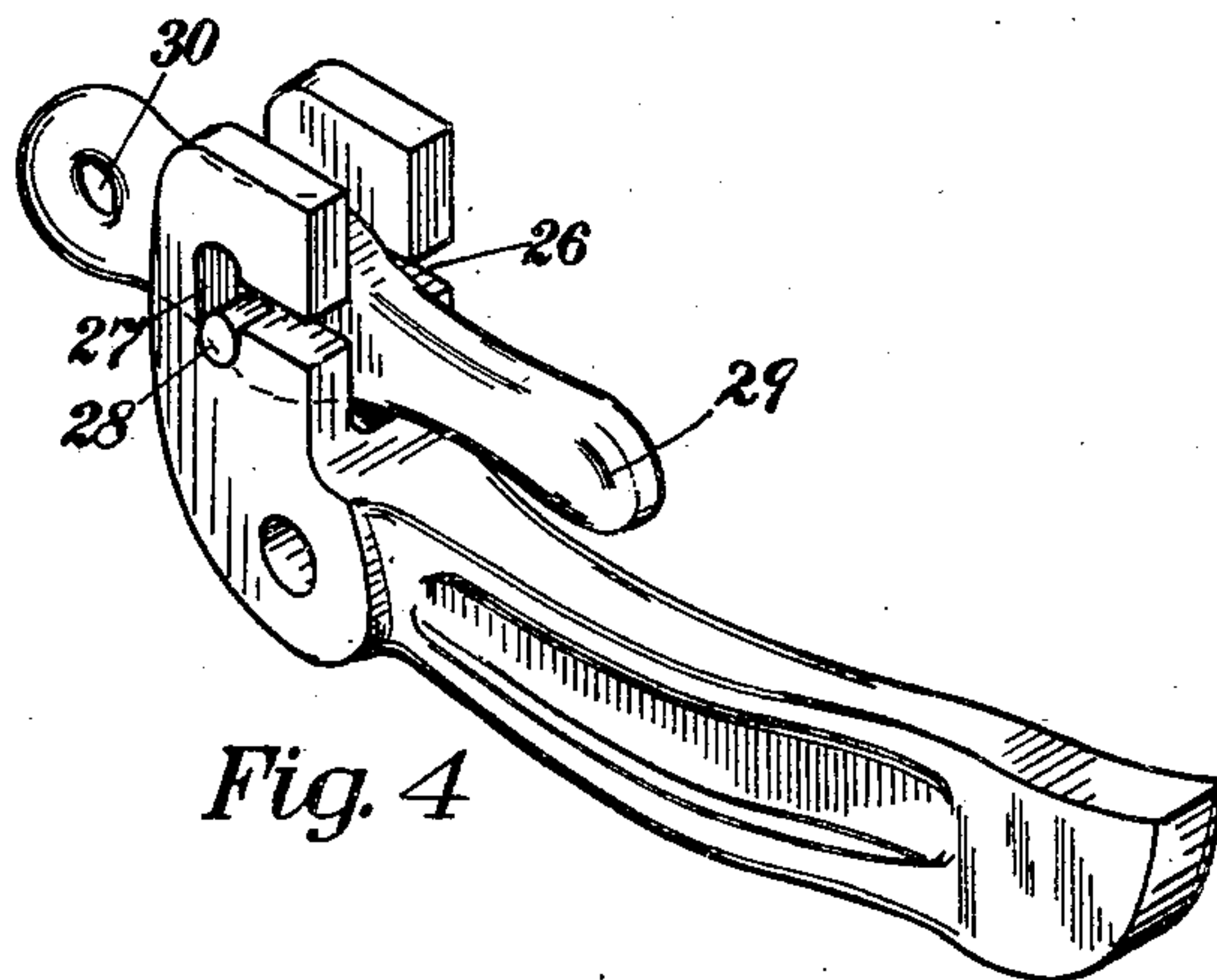
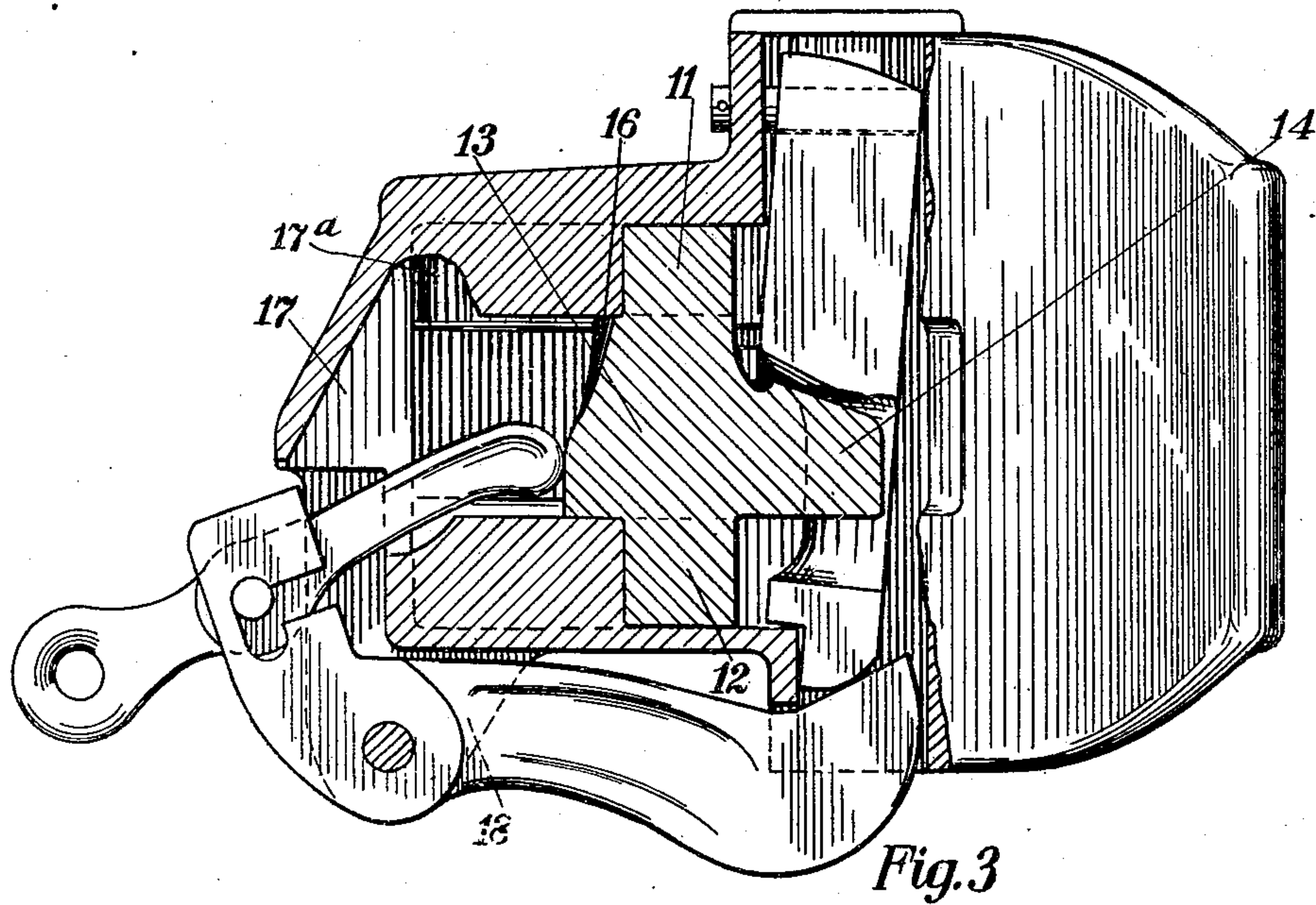
Geo. W. R. R. R.
ATTORNEY.

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3 SHEETS—SHEET 2.



WITNESSES:

A. Rogers
Robert McKeljohn

James Timms, INVENTOR.

BY

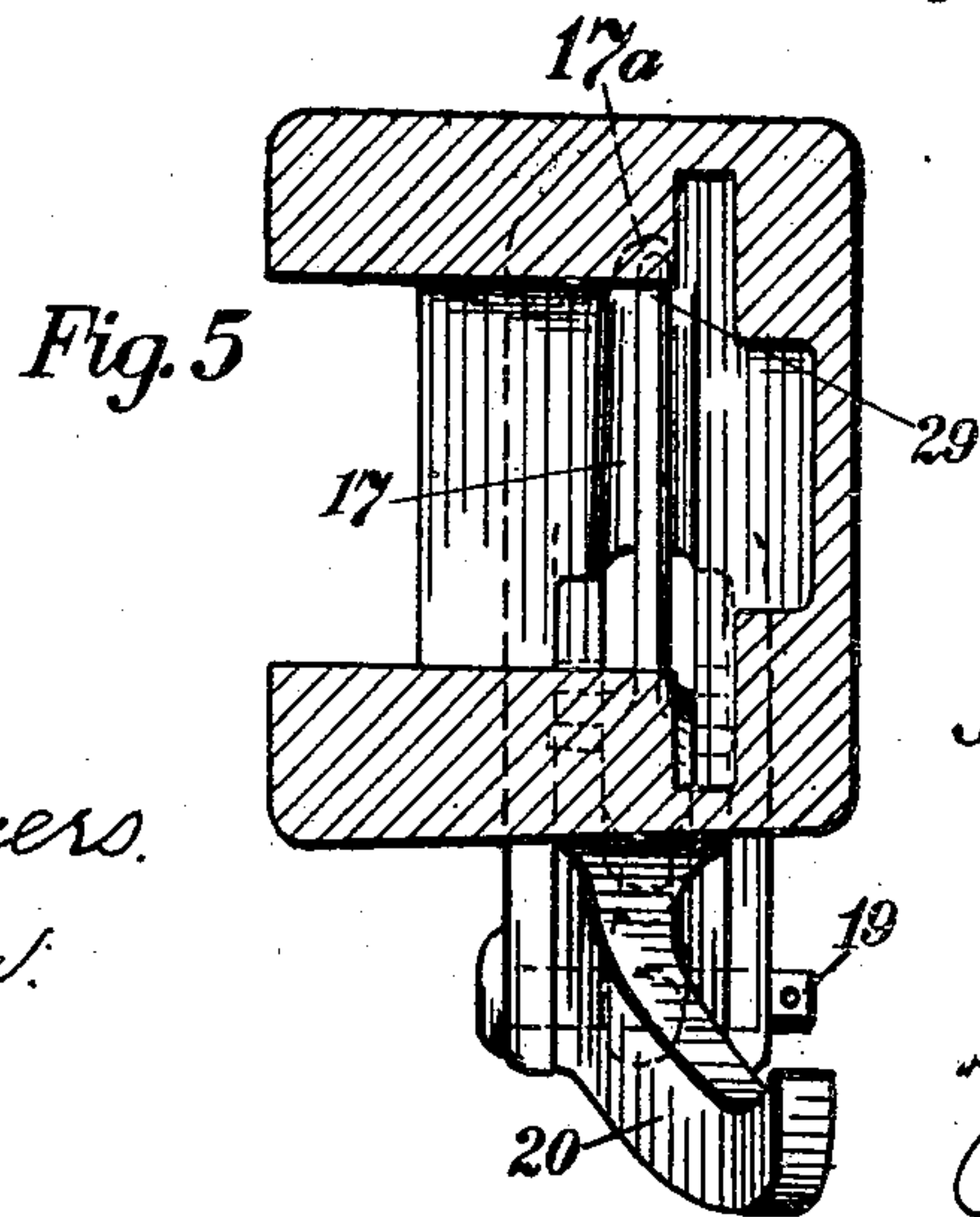
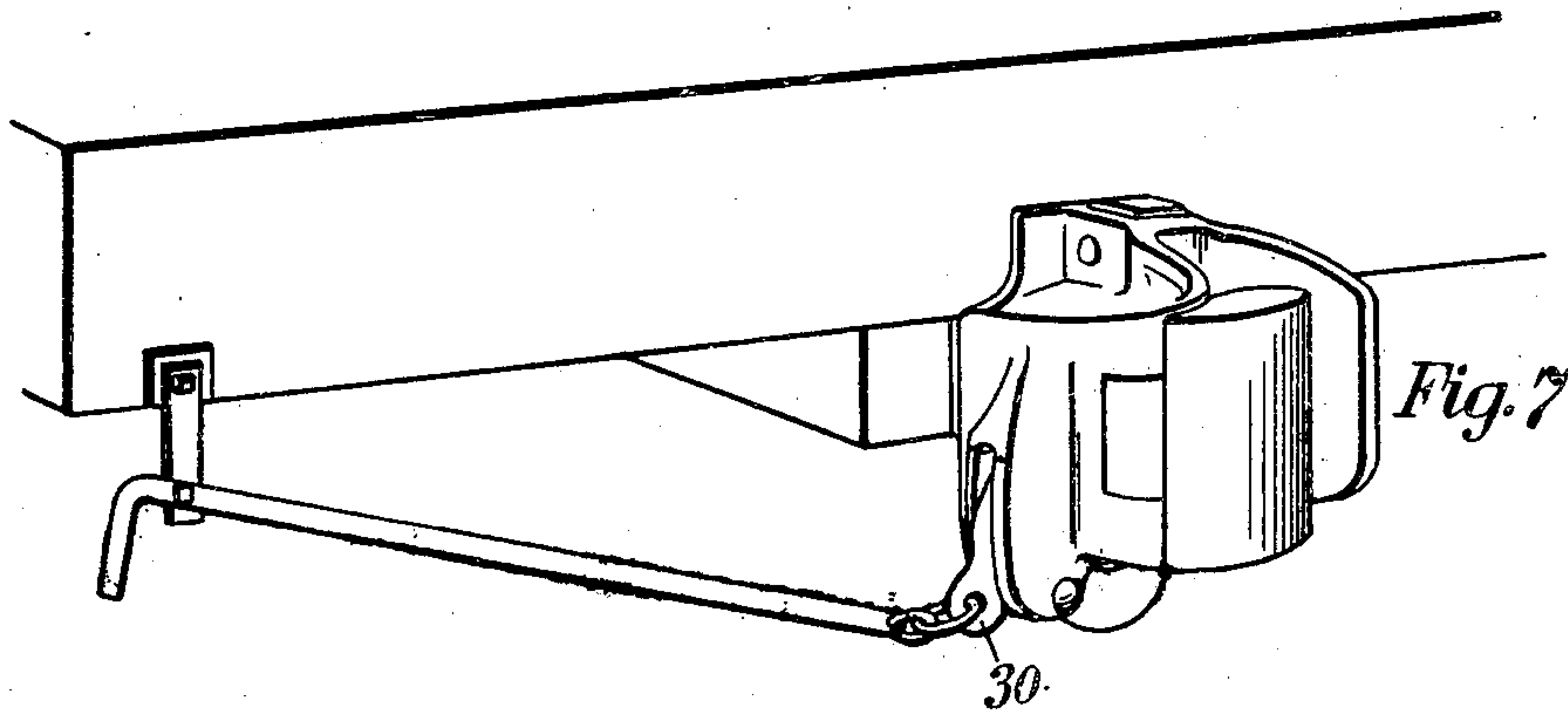
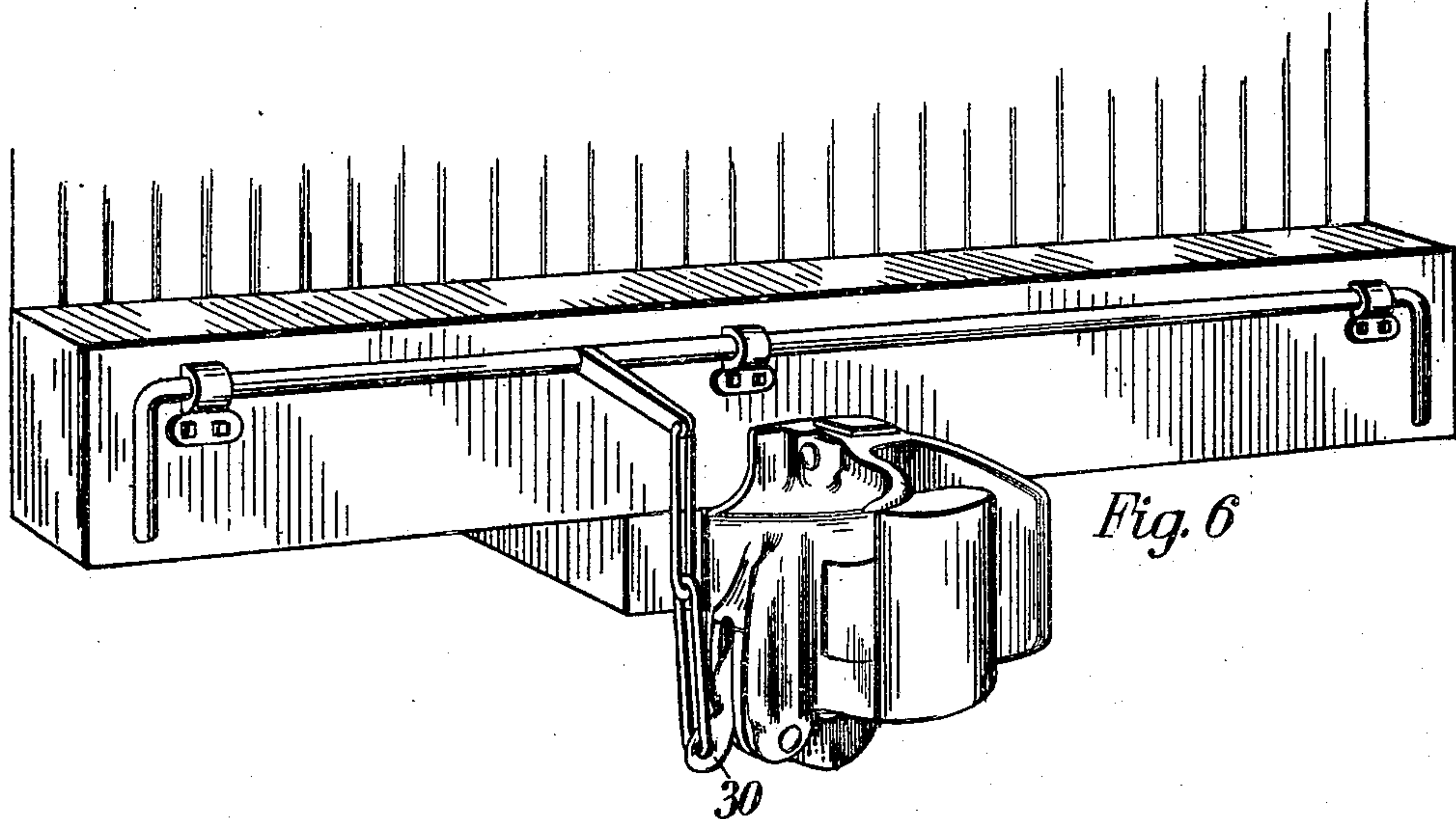
George R. Rightmire
ATTORNEY.

J. TIMMS.
CAR COUPLING.
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969,674.

Patented Sept. 6, 1910.

3 SHEETS—SHEET 3.



Witnesses
R. Rogers.
W. Rager.

James Timms, Inventor.

BY
Geo. W. Wright
Attorney.

UNITED STATES PATENT OFFICE.

JAMES TIMMS, OF COLUMBUS, OHIO.

CAR-COUPLING.

969,674.

Specification of Letters Patent.

Patented Sept. 6, 1910.

Application filed February 1, 1909. Serial No. 475,457.

To all whom it may concern:

Be it known that JAMES TIMMS, a citizen of the United States, residing at Columbus, in the county of Franklin and State of Ohio, has invented certain new and useful Improvements in Car-Couplings, of which the following is a specification.

My invention relates to improvements in car couplings and is especially designed for use with the well known Janney type of coupling, in which a recessed locking pin is adapted to be moved to lock-set position to permit the knuckle to be swung open by the manipulation of levers; these levers are operated from the side of the car, preferably, by a lateral pull thereon, and in the present invention I have perfected a construction which will permit of the operation of the levers by a vertical pull also.

The invention especially comprises the use of one lever pivoted upon the coupling head and a second lever pivotally associated therewith, extending into the coupling head, the latter having a housing formed thereon, which incloses the levers in part, the latter lever being operated to swing the knuckle open.

These features and their combinations will appear specifically hereinafter.

In the drawings which are hereto attached and hereby made a part of this specification, Figure 1 is a vertical transverse section through a car coupling with my improvements thereon, showing the parts in their normal position; Fig. 2 is a similar view showing the locking pin raised to its lock-set position, the knuckle being now free to be swung open; Fig. 3 is a similar view showing the knuckle in its open position, the three figures thus far designated showing the steps necessary to unlock the parts; Fig. 4 is a perspective of the levers in their associated relation. Fig. 5 is a vertical transverse section through the coupling construction on the line of the knuckle pivot, the knuckle being omitted from the view. Fig. 6 is a view of the device for operating the lever 30 by a vertical pull thereon; Fig. 7 is a construction for operating the lever 30 laterally.

Referring to the drawings, 1 indicates the coupling head, channeled at 2, the channel or opening being closed at its upper end by the cap 3 secured in place by the pin 4; the guard arm is shown at 5. The channel 2

extends through the coupling head, and in its lower portion is formed a shoulder or shelf 6 in the wall of the coupling head for the purpose hereinafter mentioned. Positioned in the channel 2 is the locking pin 7, which has the depression or cut out 8 therein and adjacent to its lower end has the shoulder 9 formed thereon and at its lower end is beveled as shown at 10. Pivotally mounted in the coupling head at 11 and 12 is the knuckle 13, having the extension 14 formed thereon at such a point as to engage the body of the locking pin 7 and be held against movement thereby when the parts are in their normal position as shown in Fig. 1; when the locking pin 7 has been lifted as shown in Fig. 2, the extension 14 on the knuckle 13 is free to pass through the depression 8 when the levers are further operated as shown in Fig. 3. In the construction here shown, the knuckle tail 15 has the cam surface 16 formed thereon for a purpose to be hereinafter described. The coupling head 1 has formed thereon the housing 17, which projects rearwardly and has at its lower end the lugs 18, which are preferably formed integral therewith, in which is pivotally mounted at 19 the lever 20; this is a bell crank lever, the long arm 21 of which is heavier than the short arm 22, whereby the lever normally rests in the position shown in Fig. 1. In this position the upper face 23 of the outer end 21 of the lever is in contact with the lower end 10 of the locking pin 7, the face 23 being also slightly beveled, to engage more readily the bevel face 10 of the locking pin. The lever 20 is adapted to be rotated on its pivot 19 vertically, and the manner of its engagement with the bevel face 10 of the locking pin 7 is clearly shown in Fig. 2, the effect being to give the lower end of the locking pin a lateral movement, whereby the shoulder 9 is seated on the ledge or shelf 6, and the locking pin will remain seated thereon until dislodged by the opening of the knuckle.

In Fig. 1 it is seen that the extension 14 in the normal position of the parts is in contact with the locking pin 7, and is thereby held against movement; while in Fig. 2 it is noted that the locking pin has been lifted and is occupying its lock-set position, and in this condition the extension 14 is opposite to the depression or cut out 8 in the locking pin, and if the knuckle 13 be

now operated, the extension 14 will pass freely through the depression 8, permitting the knuckle to be thrown open.

The manipulation of the lever 20 and the swinging open of the knuckle is accomplished as follows: The lever 24 is provided with the pin 25, which is inserted in the slot 26 in the arm 22 of lever 20; the slot 26 is formed transversely of the lever arm 22, and at its inner end a longitudinal slot 27 is formed opening into the slot 26. The pin 25 is moved inwardly through the slot 26 until it reaches the slot 27 in which it may be operated upwardly or downwardly as desired. The housing 17 contains the opening 28 therein, and the lever 24 is inserted through this opening into the housing in an inclined direction, as appears in Figs. 1 and 2 especially, in which position its inner end 29 lies in engagement with the pocket-like end 17^a of the housing inclosure 17. This engagement is maintained during the pull on the lever 24 whereby lever 20 lifts the locking pin 7 to its lock-set or unlocking position; thereupon the continued pull on lever 24 brings the end 29 of the same into contact with the cam face 16 on the knuckle tail 15, whereby the knuckle is thrown open. By slotting the lever 20 the pivot point of lever 24 may shift, and less length is required in the cavity in the housing to accommodate its movement, the inner end of the lever traveling over the cam face 16. An appropriate chain or rod (Figs. 6 and 7) may be secured to the lever 24 at 30, and carried away to the side of the car in such manner that there may be a direct lateral pull thereon to operate the parts, or a vertical pull thereon, the effect of a force exerted thereon in either direction being to unlock the knuckle. When the parts are in their normal position as seen in Fig. 1, the housing 17 incloses the greater part of the lever 24 and the connection between the same and lever 20, and also receives the upper arm 22 of the lever 20, and provides at its lower end a pivotal mounting for the lever 20; therefore, this construction affords protection to the levers at the points where they are most likely to be damaged in the operation of the car. It frequently happens in handling cars that they are driven together with such force that the coupling heads strike and slide past each other thereby endangering the lever mountings and the levers themselves, but in my construction herein shown, the blow would be warded off by the housing and the lever parts would escape injury. The lever 24 can be so mounted on lever 20 as to project into the coupling head more nearly in a horizontal plane, but to accomplish this it would be necessary to cut away the opening 28 into the coupling head at a lower point

than shown herein; the additional cutting away would occur in the portion of the coupling head indicated at 31, and if this were removed to any greater extent than appears in Fig. 1, it would materially weaken the coupling head, and render it unequal to the service demanded. To avoid this weakening of the coupling head, and at the same time to accommodate the lever 24, I provide the housing 17 preferably cast integral with the coupling head, which accomplishes the purposes hereinbefore described.

The operation is as follows: The pull being directed either laterally or vertically on the lever 24, the inner end 29 thereof engages the wall of the pocket 17^a, and the knuckle being locked against movement by engagement of the extension 14 with the locking pin 7, rotation of the knuckle is, for the time being, prevented. The pull upon the lever 24 will cause the pin 25 to travel upwardly in the slot 27, and simultaneously will cause the lever 20 to be rotated on its axis 19, thereby causing the end 23 to engage the beveled end 10 of the locking pin, and to lift the latter into its lock-set position shown in Fig. 2. To accomplish this, the pin 25 has moved into the upper end of the slot 27, and the inner end 29 of the lever 24 has maintained its engagement with the wall of the pocket 17^a. Further pull on the lever 24 will cause the end 29 to engage the cam face 16 of the knuckle tail 15 to cause the knuckle 13 to rotate on its pivots, the extension 14 passing through the depression 8, the lever 24 swinging to the position shown in Fig. 3 to accomplish this opening movement of the knuckle tail 15. To permit the lever 24 to assume this operated position, the wall 31 of the coupling head is cut away as shown at 32. During the movement necessary to accomplish the change of location of parts shown in Fig. 2, the lever 20 swings on its pivot 19 and the lever 24 travels in the slot 27, reaching the upper end thereof; to accomplish the further change of parts as shown in Fig. 3, the lever 24 is fulcrumed in the upper portion of the slot 27, in lever 20, and operates from this fulcrum to effect the opening of the knuckle. It is apparent that either a lateral or a vertical pull at the end 30 of lever 24 will accomplish this movement of the parts, and it is further apparent that this is accomplished by continuous pull either laterally or vertically on the lever 24, and therefore the disadvantages inherent in a construction in which an operating lever is moved through two or more directions are avoided. Further, the combination of the lever constructions with the housing on the coupling head for the purposes set out herein, provides additional protection and security of operation and thereby lengthens

the period of usefulness of the device. It is well known that in car operation, the parts are subject to constant jarring and buffing and any means for giving greater protection to the operating parts is a desired improvement.

Variations in the construction to accomplish the purposes herein set out may be made, and I do not therefore confine myself to the specific form shown and described but desire to have the advantage of all variations and modifications which lie within the scope of the appended claims.

What I claim is:

1. In a coupler having a swinging knuckle and a locking device to secure the knuckle in locked position, a housing provided thereon, a lever fulcrumed in said housing and constructed to move the locking device to its unlocked position, and a second lever fulcrumed upon said first lever, and extending into said housing and adapted to be actuated to operate said first lever and to open the knuckle.

2. In a coupler having a swinging knuckle and a locking device to secure the knuckle in locked position, a housing thereon, a lever fulcrumed in said housing, a second lever slidably fulcrumed on said first lever and positioned in said housing, said second lever being adapted to be operated to actuate said first lever to move the locking device to its unlocked position.

3. In a coupler having a swinging knuckle and a locking device to secure the knuckle in locked position, a housing on said coupler having a pocket formed at its inner end, a lever fulcrumed on said housing to unlock said locking device, a second lever fulcrumed on said first lever and positioned in said housing and arranged to have its inner end in engagement with the walls of said pocket during the said unlocking operation.

4. In a coupler having a swinging knuckle and a locking device to secure the knuckle in locked position, a housing on said coupler having a pocket formed at its inner end, a lever fulcrumed on said housing to unlock said locking device, a second lever slidably fulcrumed on said first lever and positioned in said housing, its inner end being arranged to bear against the wall of said pocket during the unlocking operation.

5. In a coupler having a swinging knuckle and a locking device to secure the knuckle in locked position, a housing on said coupler having a pocket formed at its inner end, a lever fulcrumed on said housing to unlock

said locking device, a second lever slidably fulcrumed on said first lever and positioned in said housing, its inner end being arranged to bear against the wall of said pocket during the unlocking operation, whereupon it is shifted to open the knuckle.

6. In a coupler having a swinging knuckle and a locking device to secure the knuckle in locked position, a housing thereon, a lever fulcrumed on said housing and adapted to unlock said locking device, a second lever fulcrumed on said first lever to actuate the same, and positioned in said housing and adapted to engage a wall of said housing during said unlocking operation.

7. In a coupler having a swinging knuckle and a locking device to secure the knuckle in locked position, a lever fulcrumed to the outside of the coupler and constructed to move the locking device to its unlocked position, said lever being slotted both longitudinally and transversely, a second lever fulcrumed in said slotted portion of said first lever and adapted to be moved in one direction to actuate said first lever and to open the knuckle.

8. In a coupler having a swinging knuckle and a locking device to secure the knuckle in locked position, a housing thereon having an opening therein, a lever fulcrumed in said housing and constructed to move the locking device to its unlocked position and having a slot formed longitudinally and transversely therein, a second lever fulcrumed in said slotted portion and extending through said opening into said housing and adapted to be moved by a vertical or longitudinal pull thereon to actuate said first lever and also to force the knuckle open.

9. In a coupler having a swinging knuckle and a locking device to secure the knuckle in locked position, a housing formed on said coupler having an opening therein, a lever fulcrumed in said housing to move said locking device to its unlocked position and having adjacent to one of its ends a transverse slot and a longitudinal slot in connection therewith, a second lever fulcrumed in the slotted portion of said first lever and positioned normally within the housing through said opening and engaging a wall of the housing during the unlocking operation.

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

JAMES TIMMS.

Signed in the presence of—

GEO. W. RIGHTMIRE,
HORACE S. KERR.