

No. 720,325.

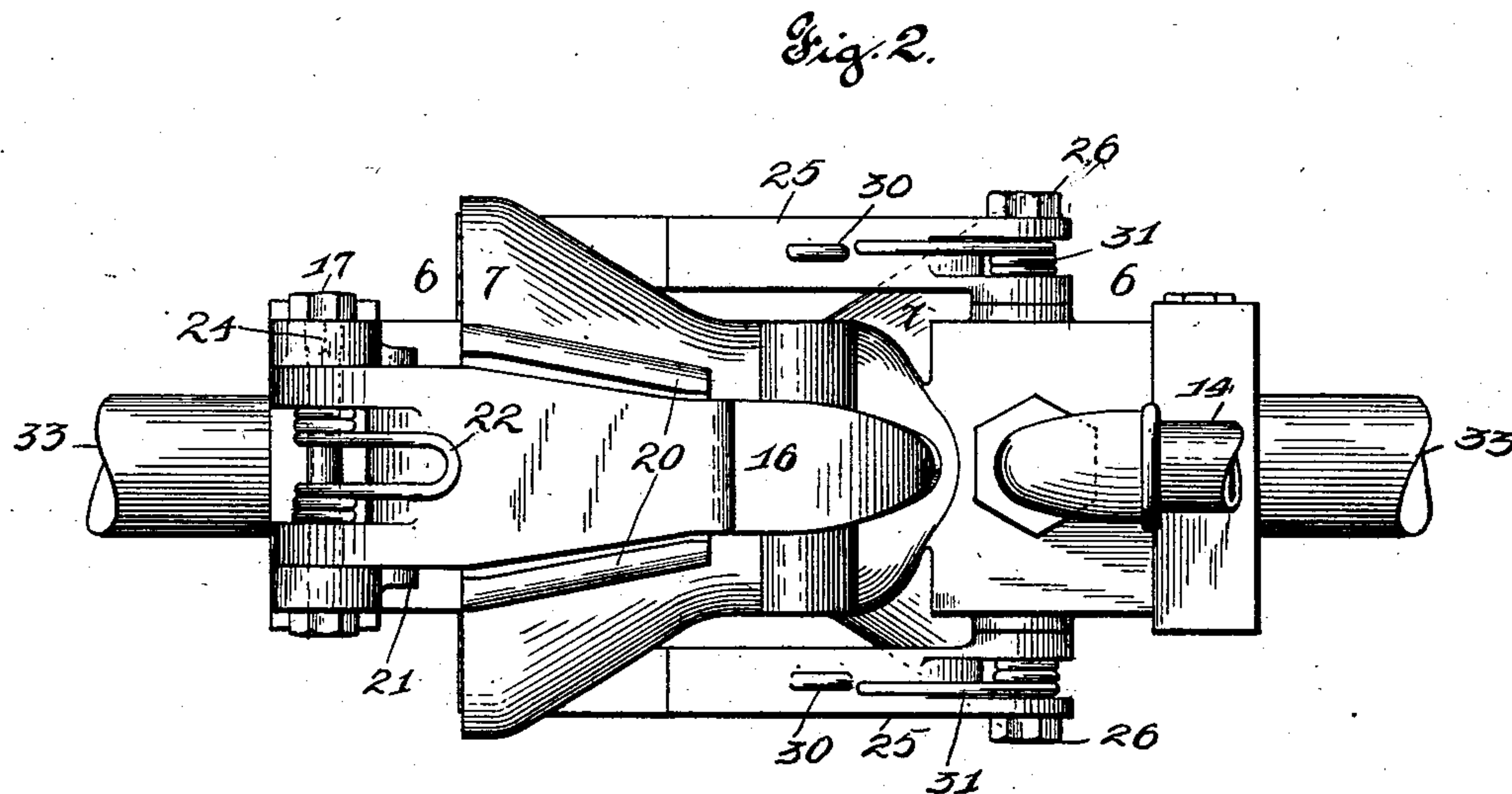
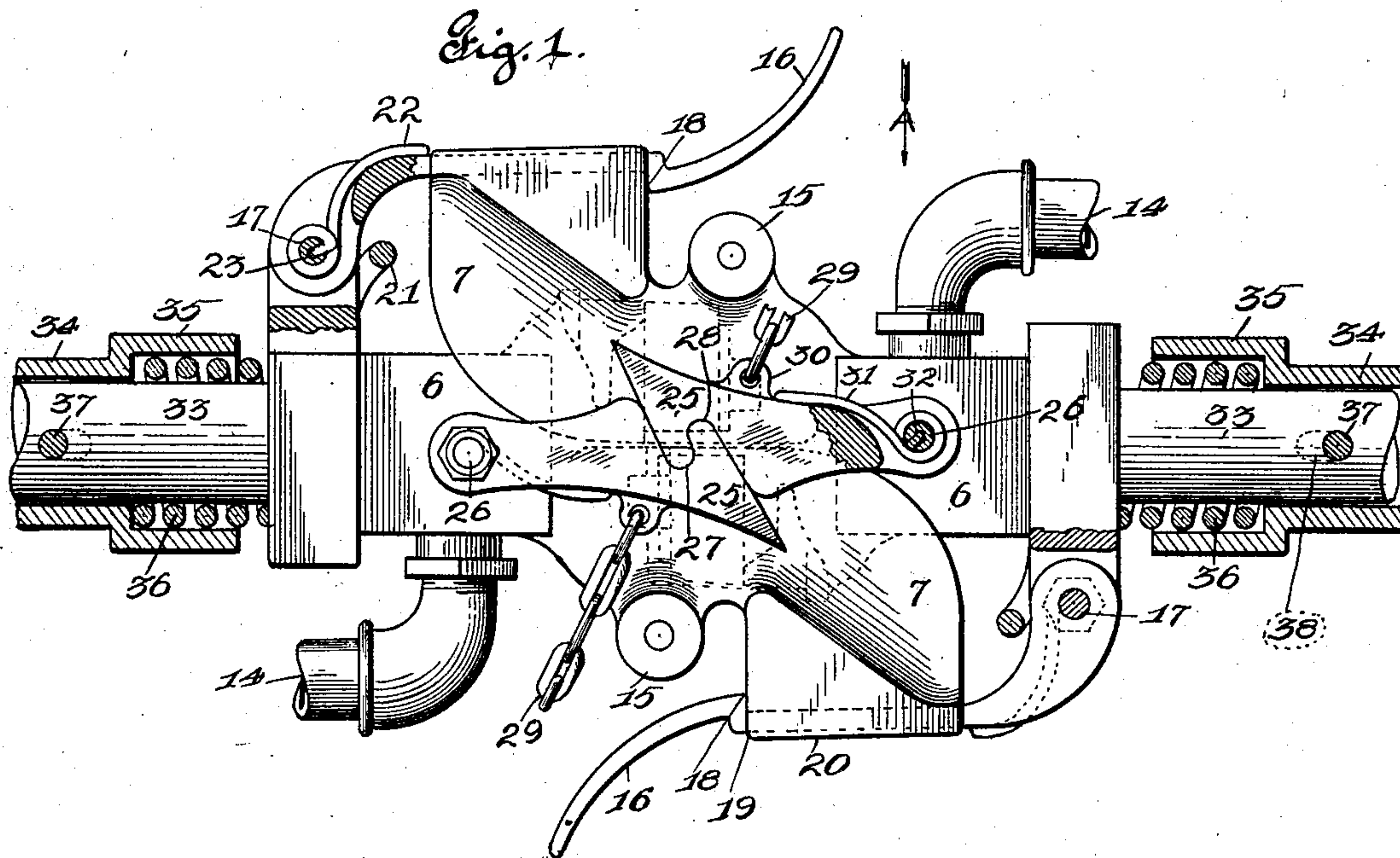
PATENTED FEB. 10, 1903.

L. C. CARY.
COMBINED STREET CAR AND AIR BRAKE COUPLING.

APPLICATION FILED NOV. 24, 1902.

NO MODEL.

2 SHEETS—SHEET 1.



Witnesses
Alfred A. Eicher
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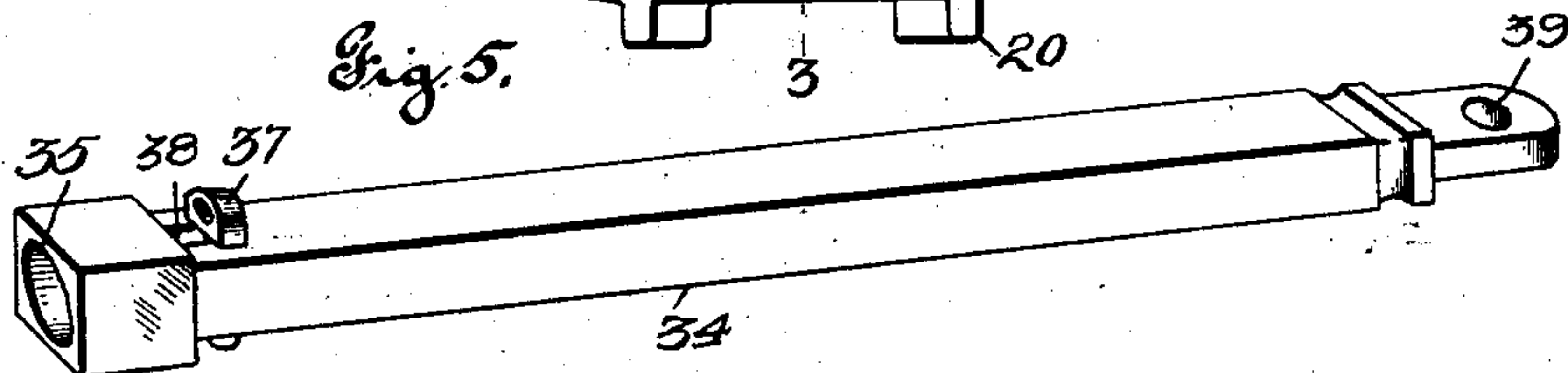
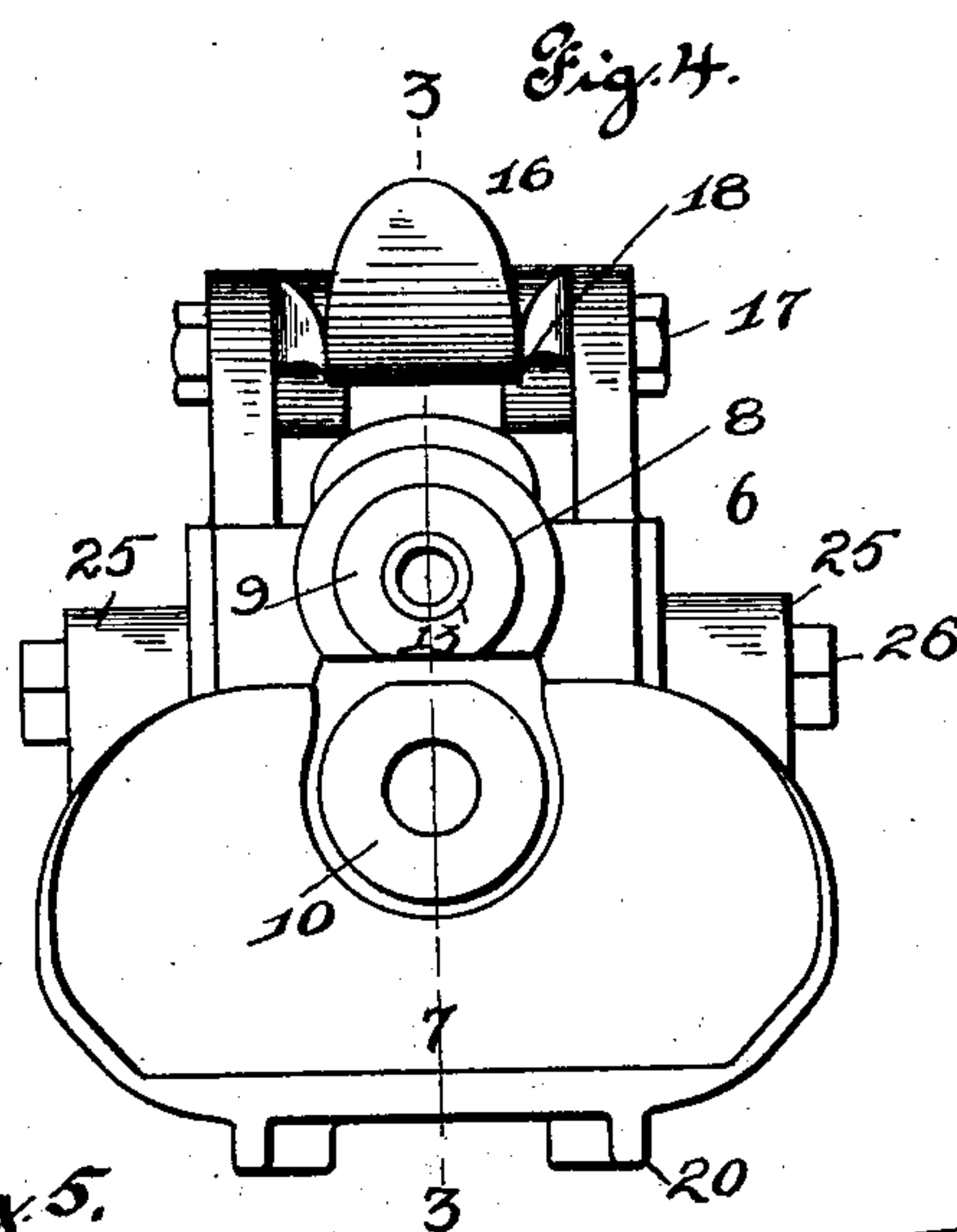
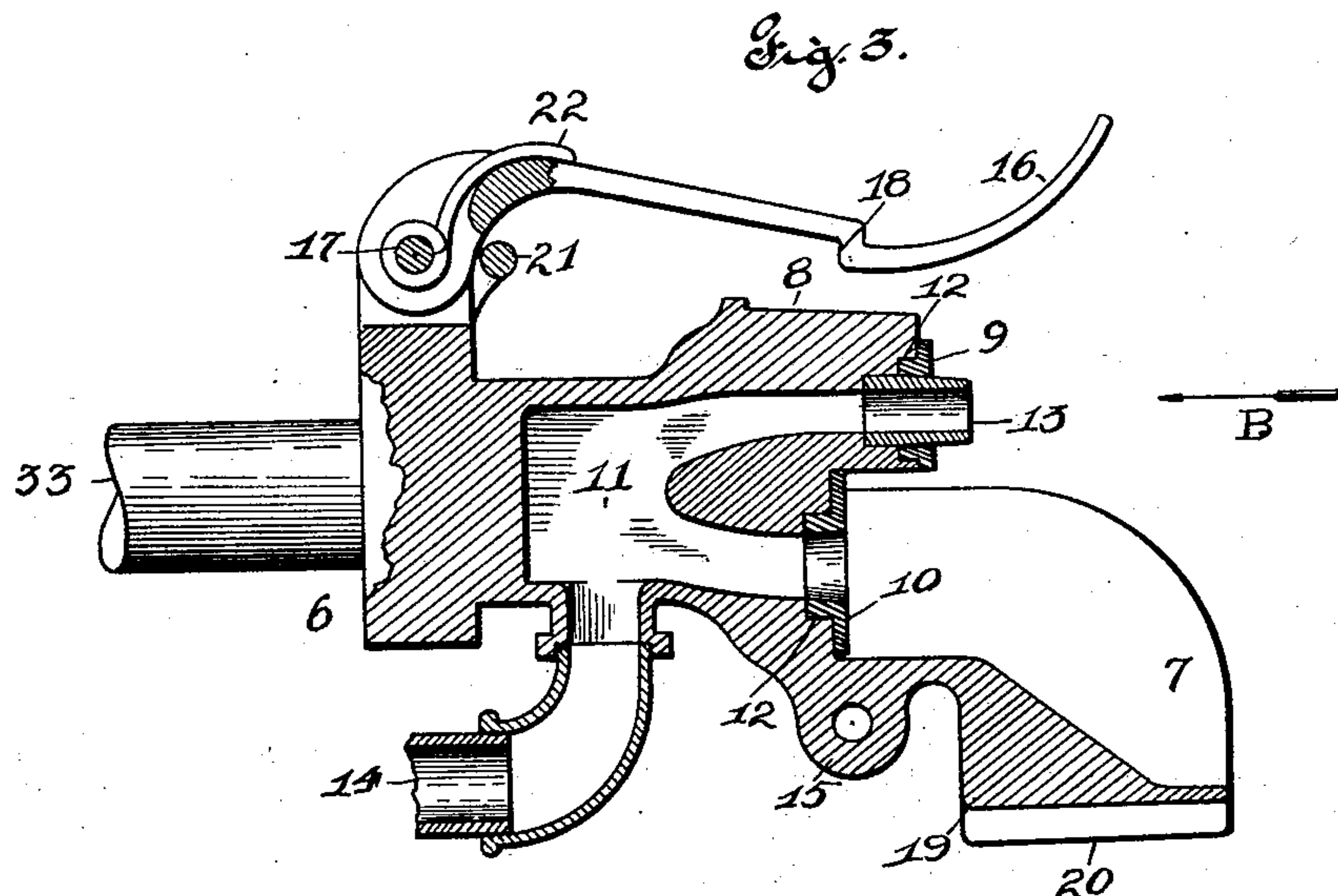
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2 SHEETS—SHEET 2.



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Alfred A. Eick
M. L. Linn

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UNITED STATES PATENT OFFICE.

LEWIS C. CARY, OF ST. LOUIS, MISSOURI, ASSIGNOR OF ONE-HALF TO JULIA CALDWELL, OF EL PASO, TEXAS.

COMBINED STREET-CAR AND AIR-BRAKE COUPLING.

SPECIFICATION forming part of Letters Patent No. 720,325, dated February 10, 1903.

Application filed November 24, 1902. Serial No. 132,702. (No model.)

To all whom it may concern:

Be it known that I, LEWIS C. CARY, of the city of St. Louis, State of Missouri, have invented certain new and useful Improvements in a Combined Street-Car and Air-Brake Coupler, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention relates to an improved combined street-car and air-brake coupler; and it consists of the novel construction, combination, and arrangement of parts hereinafter shown, described, and claimed.

The object of my invention is to provide an automatic combined car and air-brake coupler which shall be especially adapted for use upon street-cars.

Figure 1 is a plan view of a pair of my improved automatic couplers in coupled position and parts being shown in section. Fig. 2 is a side elevation of same looking in the direction indicated by the arrow A in Fig. 1 and with some parts removed. Fig. 3 is a sectional plan of one of the heads with parts removed, the section being taken on line 3 3 of Fig. 4. Fig. 4 is an end view of the heads shown in Fig. 3 looking in the direction indicated by the arrow B. Fig. 5 is a perspective view, on a reduced scale, of an elongated detachable draw-bar especially for use in connection with my improved couplers upon street-cars.

6 indicates the heads of the couplers, which are exact counterparts of each other and are adapted to automatically interlock, the left front half 7 of each head being flared or half-bell-shaped, and the opposite sides 8 are in the form of circular necks. Said circular necks 8 are fitted with washers 9, of rubber or other material, so that a tight joint will be made between the end of the neck and the seat of the opposing head. Said seat is provided with a washer 10, of rubber or other suitable material, and is adapted to be engaged by the washer 9 of the opposing neck. Within the heads 6 is an air-passage 11, which is bifurcated, and one of its branches extends through the neck 8, and the other branch extends through the seat and its washer 10.

The washers 9 and 10 are preferably set in recesses 12. (See Fig. 3.) The necks 8 are preferably provided with a tapered guiding-tube 13, which projects through said washer 9 and extends a distance beyond the projecting end of the neck which supports it.

14 indicates a pipe which communicates with the air-passage 11 and to which the ordinary hose is to be attached in connecting the coupler to the train-pipe of the car.

The heads 6 are provided in some cases with suitable perforated ears 15 for assisting in suspending and supporting the heads beneath the car.

For locking the two heads in a coupled position I provide each head with a hinged locking-arm 16, which is pivoted at 17 to the rear end of the head and which extends forwardly and is curved outwardly. Said arm is also provided with a shoulder 18 for engaging an angular projection 19 on the opposing bell-shaped half 7.

20 indicates projecting guides for the said locking-arms, said guides being preferably cast integral with said bell-shaped half.

21 indicates a stop projecting from the head into the path of each of the said locking-arms to limit the inward movement of same. (See Fig. 3, in which the said locking-arm is shown at the limit of its inward movement and in its normal position.) Said locking-arms are held in normal position by means of suitable springs 22. These springs are preferably formed of wire and are coiled about the pivot 17, as shown clearly in Fig. 2, and the ends of the wire are inserted in apertures 23, formed in said pivot to prevent said ends from turning. Said pivot 17 is held against turning by being squared or angular, as indicated by dotted lines at 24 in Fig. 2 in the manner customary in common rail-bolts.

The spring 22 has a U-shaped body, which is curved outwardly and forwardly and rests in forcible contact with the outer surface of the adjacent locking-arm 16.

The heads 6, owing to the construction above described, are interchangeable as well as interlocking. The heads 6 are also provided on their tops and bottoms with duplicate interchangeable and interlocking automatic coup-

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ling-hooks 25, which are pivoted at their ends by means of bolts 26 and which are provided with angular outer ends, so that they will readily slide one upon the other in making the coupling. Said hooks are also provided intermediate of their ends with a rounded projection 27 and a correspondingly-shaped recess 28, so that the projection of one hook will engage the corresponding recess of the opposite hook. By this means the coupling-heads will be securely coupled and held in said relation against all ordinary draw-bar strains.

The buffing shocks are met by the ends of the circular necks engaging the seats and the interposed elastic washers 9 and 10. Each of the said automatic coupling-hooks 25 is provided with a suitable chain 29, (or equivalent device,) secured thereto by means of an eye 30 in such manner that by pulling upon said chain all the upper and lower hooks will be simultaneously uncoupled, and then the heads 6 may be separated, the locking-arms automatically slipping over the angular projection 19 on the opposing bell-shaped halves.

7. The inner ends of the said hooks 25 are bifurcated, and springs 31 are coiled about the bolts 26 within said bifurcations, and the inner ends of said springs are fixed in suitable apertures 32 in said bolts, as indicated by dotted lines in Fig. 1. The opposite ends of said springs bear upon the said hooks and urge them toward the opposing hook and serve to retain them in coupled relation.

The heads 6 are provided with a shank 33, to which the extended draw-bar 34 is attached. This draw-bar is provided with an enlarged recess 35 at one end and is mounted to slide loosely upon the said shank 33. A coil-spring 36 is mounted upon said shank within the recess 35, so that one end of said spring will bear against the inner end of said recess and the opposite end of the spring will engage the head, and thereby produce a buffing effect during the coupling operation. The draw-bar 34 is connected to the shank 33 by means of a pin or bolt 37, which passes through said shank and slides loosely in a longitudinal slot 38, formed in said draw-bar. The inner end of the draw-bar is provided with an aperture 39, by means of which it is to be pivotally attached to some portion of the street-car frame.

It is well known that the most improved street-car couplers are now provided with a very long draw-bar which extends a sufficient distance under the car-platform to permit a very considerable lateral movement of the draw-bar in turning the very short curves of city streets.

The operation of my invention will be readily apparent from the above description.

I claim—

1. A combination street-car and air-brake coupler, comprising a flaring half-bell-shaped guide portion; a head within which is formed a bifurcated air-passage; a circular neck opposite said half-bell-shaped guide portion; and a yielding locking-arm pivotally attached

to the said head and adapted to lock the same to an opposing head, substantially as specified.

2. A combination street-car and air-brake coupler, comprising a flaring half-bell-shaped guide portion; a head within which is formed a bifurcated air-passage; a circular neck opposite said half-bell-shaped guide portion; a yielding locking-arm pivotally attached to the said head and adapted to lock the same to an opposing head; and an elongated draw-bar connected to said head and provided at one end with pivotal means for permitting the entire device to swing laterally, substantially as specified.

3. A combination street-car and air-brake coupler, comprising a flaring half-bell-shaped guide portion; a head within which is formed a bifurcated air-passage; a circular neck opposite said half-bell-shaped guide portion; a yielding locking-arm pivotally attached to the said head and adapted to lock the same to an opposing head; an elongated draw-bar connected to said head and provided at one end with pivotal means for permitting the entire device to swing laterally; and a buffer-spring interposed between said draw-bar and said head, substantially as specified.

4. A combination street-car and air-brake coupler, comprising a flaring half-bell-shaped guide portion; a head within which is formed a bifurcated air-passage; a circular neck opposite said half-bell-shaped guide portion; a yielding locking-arm pivotally attached to the said head and adapted to lock the same to an opposing head; and a coupling-hook applied to said head, substantially as specified.

5. A combination street-car and air-brake coupler, comprising a flaring half-bell-shaped guide portion; a head within which is formed a bifurcated air-passage; a circular neck opposite said half-bell-shaped guide portion; a yielding locking-arm pivotally attached to the said head and adapted to lock the same to an opposing head; and coupling-hooks applied to the top and bottom of said head and adapted to engage similar hooks on an opposing head, substantially as specified.

6. A combination street-car and air-brake coupler, comprising a flaring half-bell-shaped guide portion; a head within which is formed a bifurcated air-passage; a circular neck opposite said half-bell-shaped guide portion; a yielding locking-arm pivotally attached to the said head and adapted to lock the same to an opposing head; coupling-hooks applied to the top and bottom of said head and adapted to engage similar hooks on an opposing head; and springs for holding said hooks in a coupled relation.

7. A combination street-car and air-brake coupler, comprising a flaring half-bell-shaped guide portion; a head within which is formed a bifurcated air-passage; a circular neck opposite said half-bell-shaped guide portion; a yielding locking-arm pivotally attached to the said head and adapted to lock the same to an

opposing head; coupling-hooks applied to the
top and bottom of said head and adapted to
engage similar hooks on an opposing head;
springs for holding said hooks in a coupled
5 relation; and chains for simultaneously mov-
ing said hooks in opposition to said springs,
substantially as specified.

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

LEWIS C. CARY.

Witnesses:

ALFRED A. EICKS,
M. G. IRION.