

No. 690,560.

Patented Jan. 7, 1902.

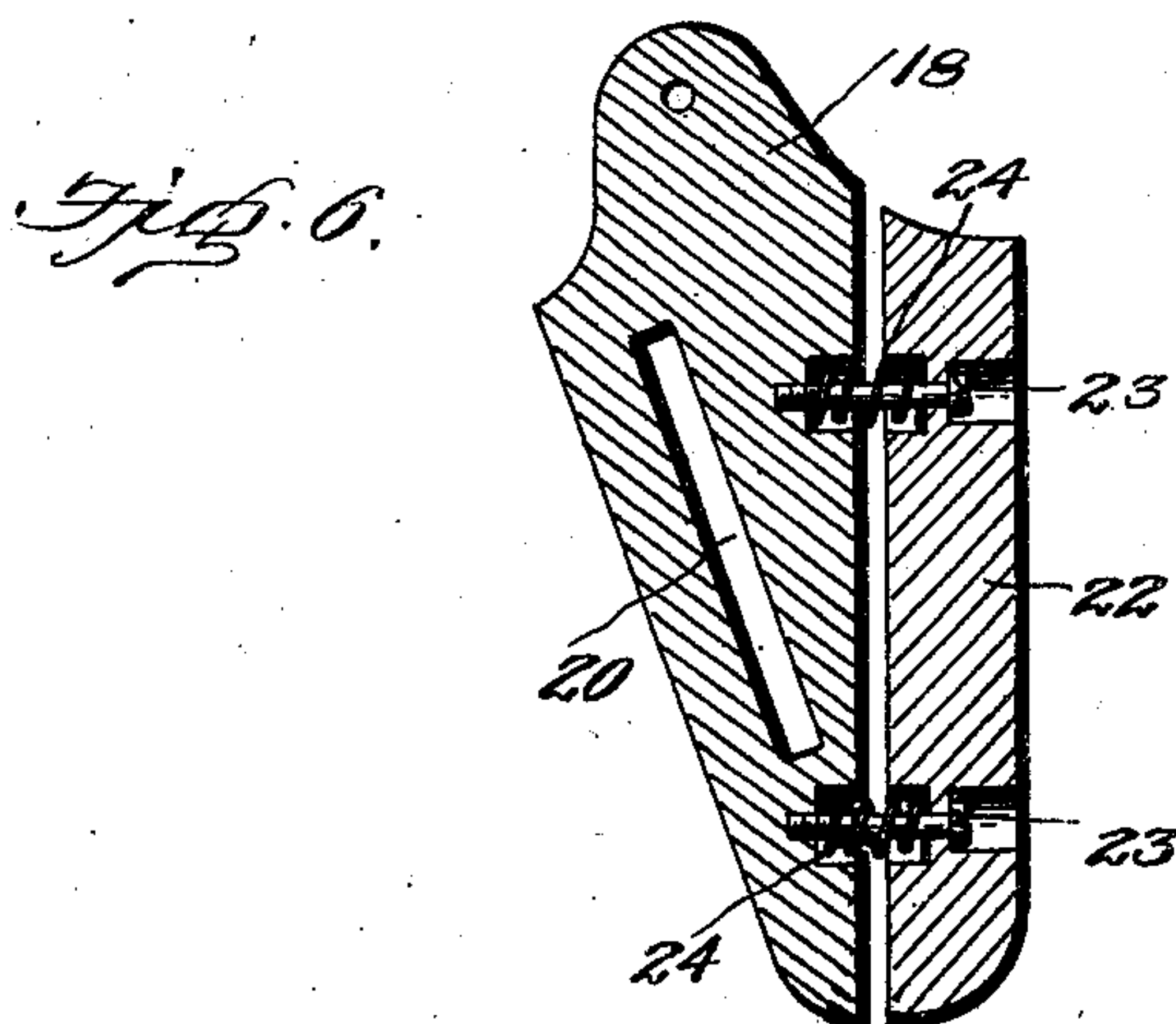
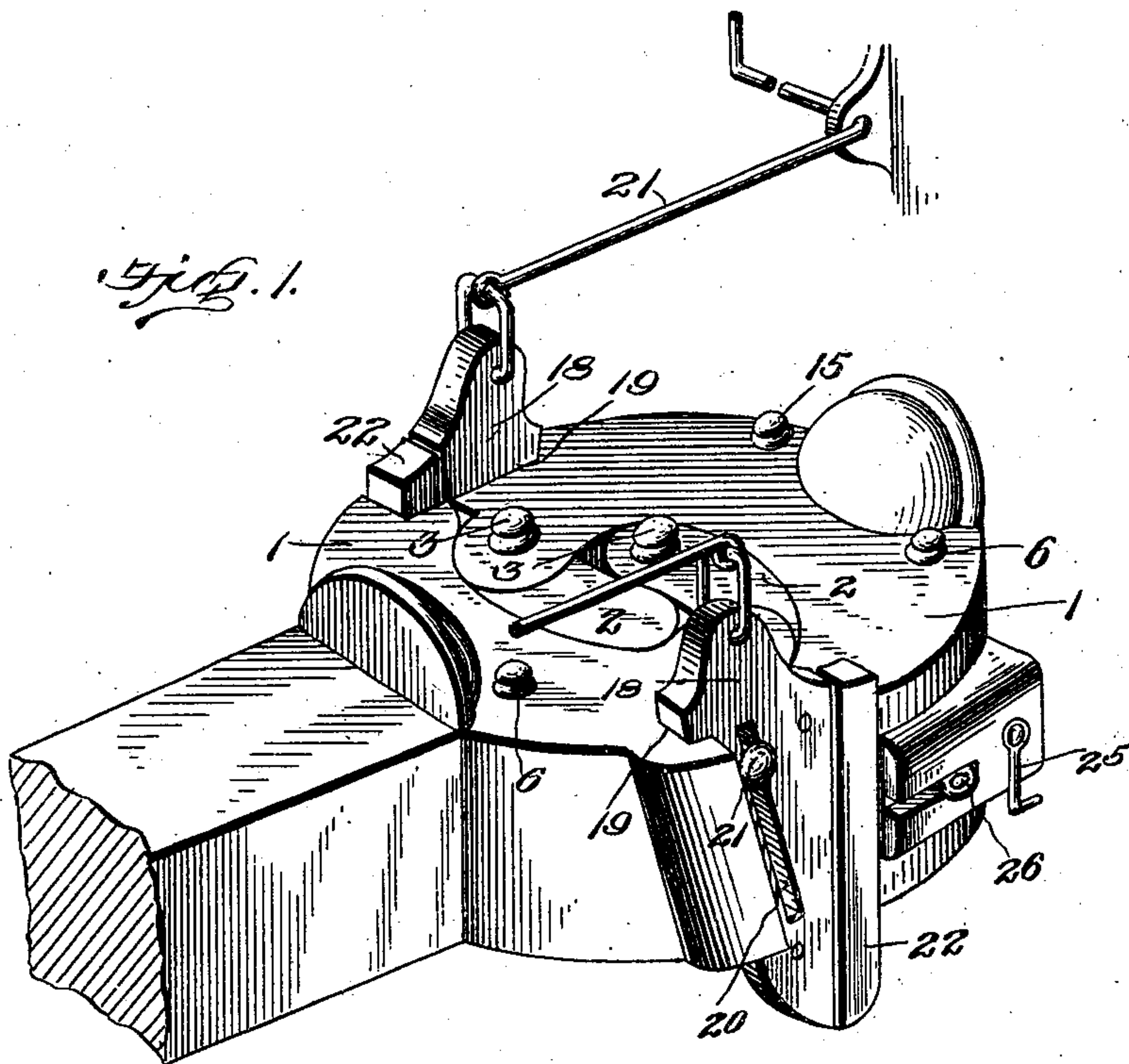
J. M. CLARK.

CAR COUPLING.

(Application filed Oct. 21, 1901.)

(No Model.)

3 Sheets—Sheet 1.



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Fig. 2.

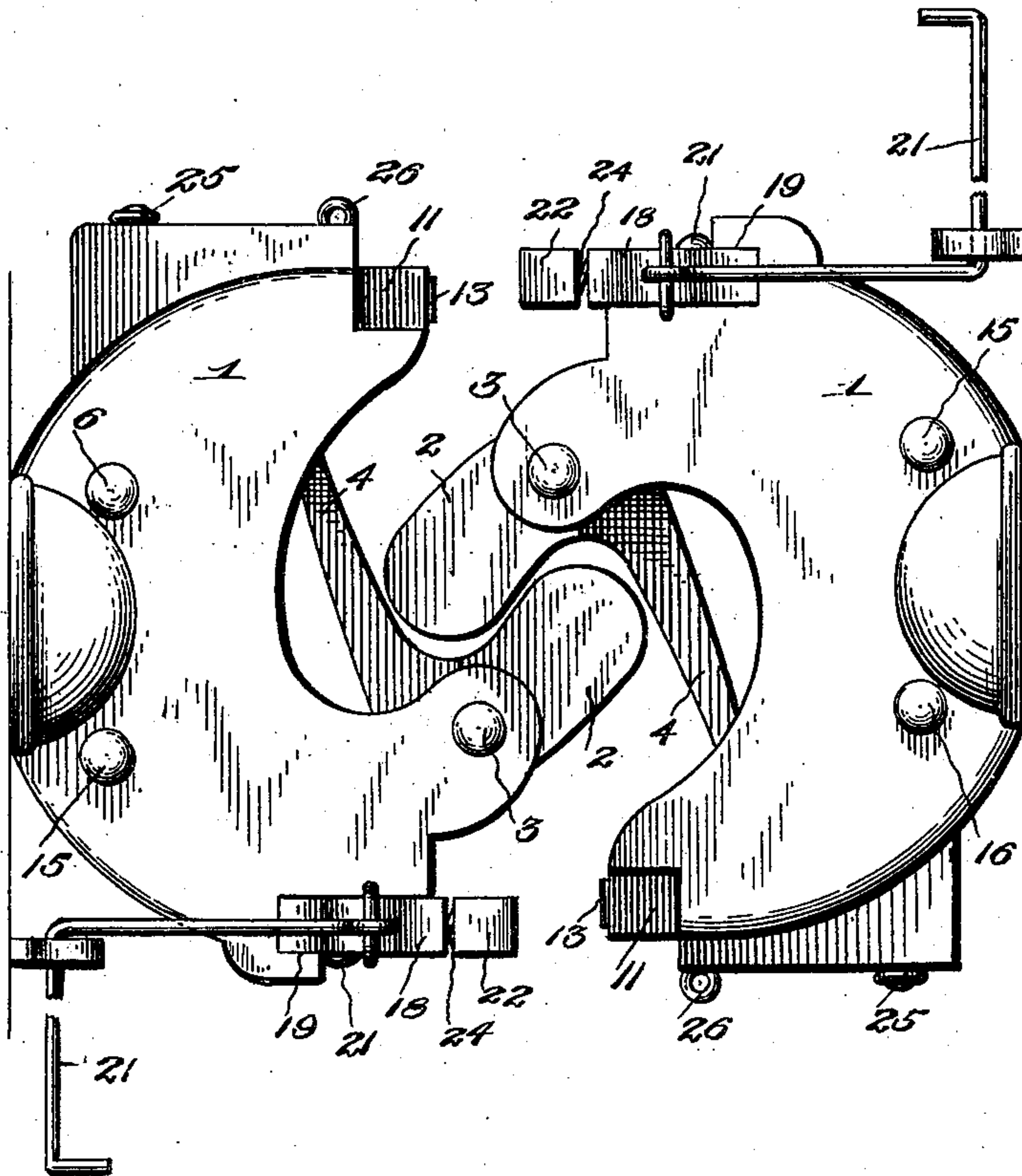
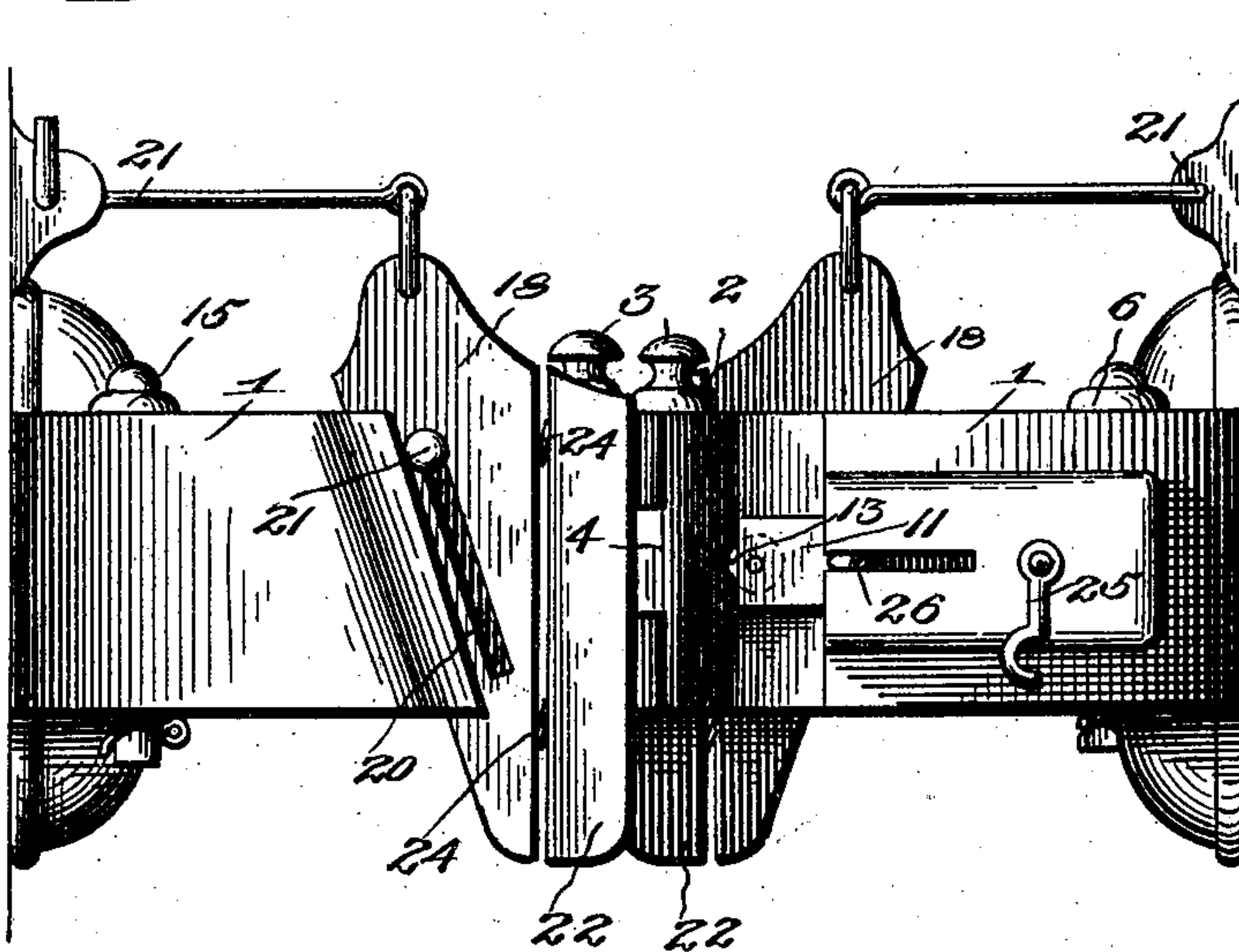


Fig. 3.



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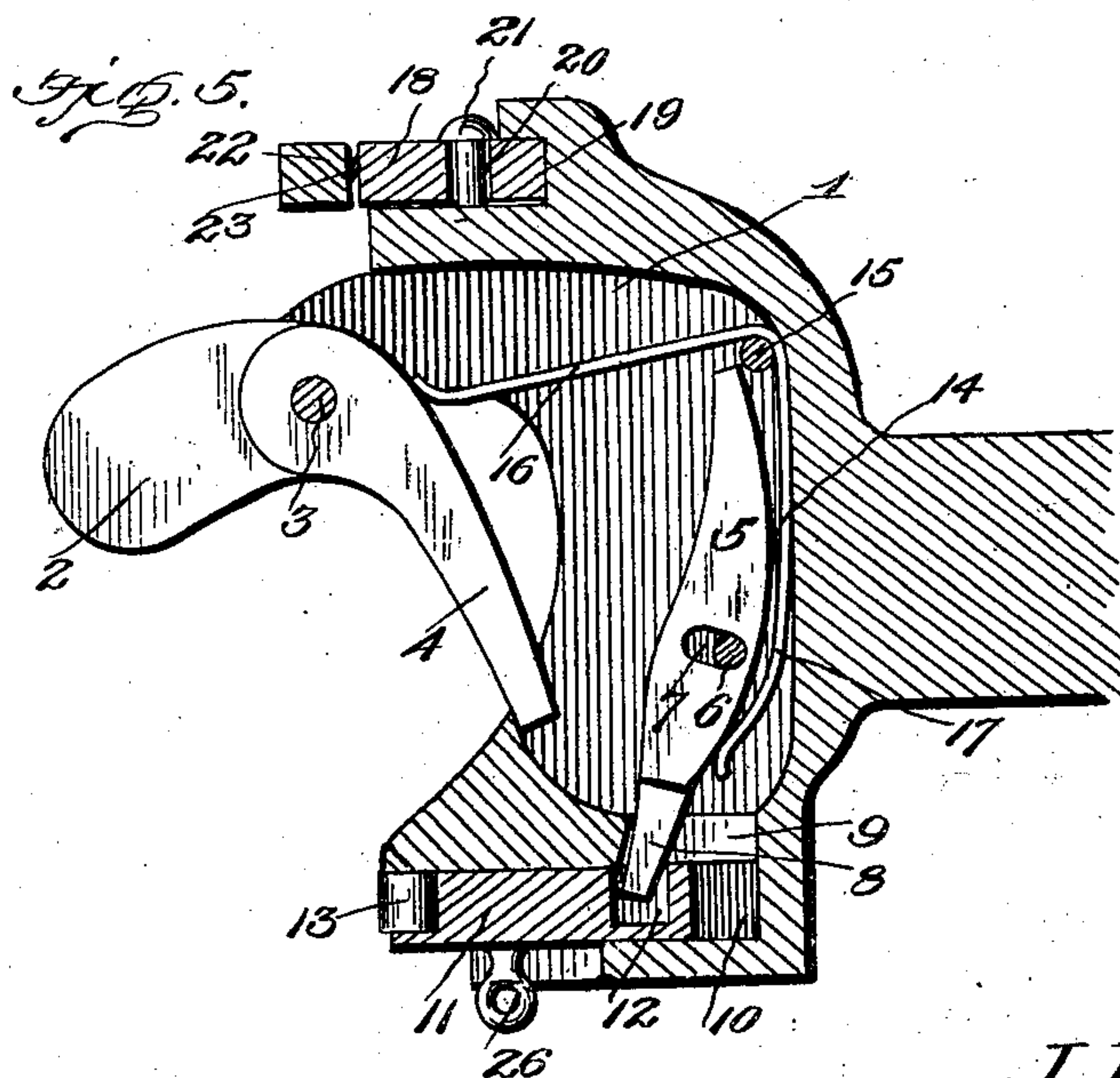
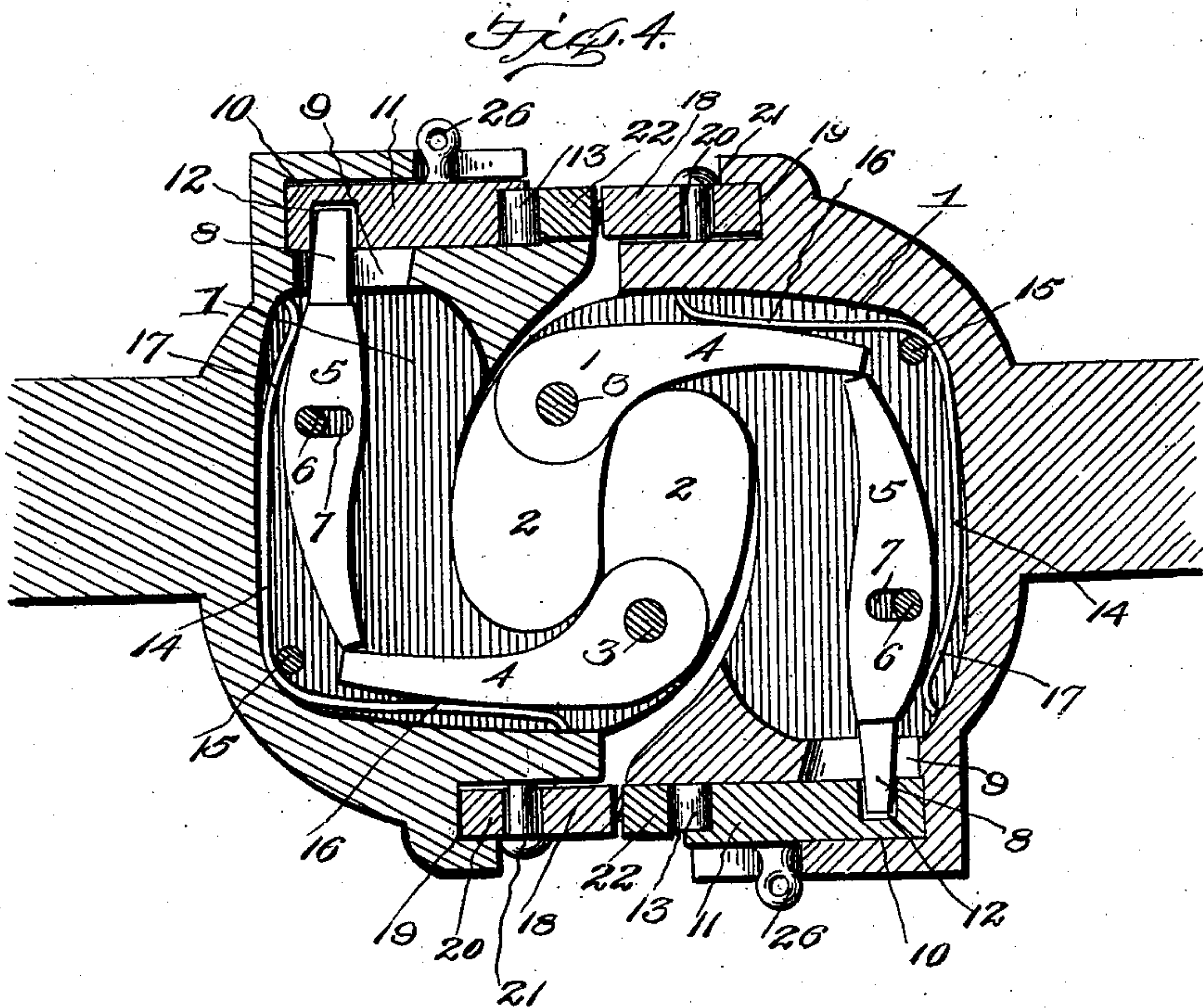
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UNITED STATES PATENT OFFICE.

JOHN M. CLARK, OF VINCENNES, INDIANA.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 690,560, dated January 7, 1902.

Application filed October 21, 1901. Serial No. 79,393. (No model.)

To all whom it may concern:

Be it known that I, JOHN M. CLARK, a citizen of the United States, residing at Vincennes, in the county of Knox and State of Indiana, have invented certain new and useful Improvements in Car-Couplers; and I do 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 certain new and useful improvements in car-couplers.

The object of the invention is to provide novel and effective means for automatically locking the knuckles of coacting couplers at the time of coupling to prevent casual disengagement thereof, and, further, to provide means for setting the latch mechanism to adapt the present form of coupler for use in connection with an ordinary coupler of the Janney type.

With these and other objects in view, which will appear as the nature of the invention is better understood, the invention consists in certain novel features of construction, combination, and arrangement of parts, as will be hereinafter more fully described, and particularly pointed out in the appended claims.

In the accompanying drawings, Figure 1 is a perspective view showing two opposing couplers embodying the present invention coupled together. Fig. 2 is a top plan view showing the couplers in the act of being coupled. Fig. 3 is a side elevation of the parts as arranged as shown in Fig. 2. Fig. 4 is a horizontal section through the united couplings, showing the knuckles held in locking engagement by the trip-latches. Fig. 5 is a similar view of one of the couplings adjusted to interlock with a corresponding form of coupling. Fig. 6 is a sectional view of one of the wedge-shaped latch-blocks.

Referring now more particularly to the drawings, the numeral 1 designates the chambered draw-head of the coupling, and 2 the knuckle thereof, the said knuckle being mounted upon a pivot-pin 3 and provided with a tailpiece 4, mounted to swing therewith. Coöperating with the tailpiece is a trip-latch 5, extending transversely of the draw-head and mounted to swing upon a pivot-pin 6, projecting through an elongated opening 7

therein. One end of this trip-latch is adapted to coöperate with the free end of the tailpiece to hold the knuckle in locking position, and the other end thereof is formed with a tongue 8, which projects through and moves within an opening 9, formed in one side of the draw-head and communicating with a guide-chamber 10, in which is mounted a slide 11, having a recess 12 to receive said tongue. The slide 11 is adapted to reciprocate longitudinally of the draw-head and is provided at its outer end with a friction-roller 13 for a purpose presently described.

A ribbon or plate spring 14 is located in the draw-head and is confined therein at one point by a pin 15 or other suitable form of securing device. One end 16 of this spring is adapted to bear against the rear or outer face of the tailpiece 4 to normally force said tailpiece outward, thus to project the pivoted knuckle 2. The outer end 17 of said spring bears against the shorter arm of the pivoted trip-latch 5 at a point adjacent to the tongue 8 and serves to force the tongue end of said latch forwardly and the free or locking end thereof rearwardly to normally throw said latch out of engagement with the tailpiece to permit the latter and the knuckle to be retracted or thrown outwardly by the action of the portion 16 of the spring.

When two couplings embodying the present invention are about to be connected up, the knuckle on one coupling comes into contact with the tailpiece on the other coupling and forces the said tailpiece and the coöperating knuckle inwardly, thereby bringing the two knuckles of the couplers into locking engagement and swinging the tailpiece back into the chamber of the draw-head against the tension of the spring. As the tailpiece swings inwardly and passes the free or locking end of the trip-latch 5 the said free end of the latch is automatically forced forwardly against the tension of the coacting end of the spring to bear against the tailpiece, as shown in Fig. 4, to hold the knuckle in positive locking engagement and prevent casual disconnection thereof. To effect this result, a wedge-shaped latch or locking-block 18 is mounted to slide vertically in a guide-recess 19 upon the side of each draw-head opposite the slide 11 and is formed with a longitudinal slot 20 for the reception

of a guide pin, bolt, or similar device 21, fixed to the draw-head. This block is adapted to be raised and lowered to lock and unlock the couplings through any suitable form of operating means, such as a lever 21, mounted upon the end of the car. The outer face of this latch or locking-block carries a cushioned bumper and follower 22, which is slidably mounted upon guide pins or bolts 23, projecting from the block, and is normally pressed outwardly by coil-springs 24, surrounding said pins or bolts. When the two couplings come into locking engagement, the parts 22 of the latches or locking-blocks bear against the friction-rollers 13 of the slides 11 and force said slides backwardly, thereby swinging the trip-latches 5 on their pivot 6 against the tension of the springs 17 and forcing the free ends of said latches out into the path of the free ends of the tailpieces 4, thus holding said tailpieces from outward movement and the knuckles from casual disengagement.

While it is deemed preferable to employ the form of spring shown herein, it will of course be understood that instead of a single spring two springs may be employed in lieu thereof to act independently upon the tailpiece and knuckle and the trip-latch.

In order to adapt the coupling for use in connection with an ordinary Janney coupling, I provide suitable mechanism for holding the slide 11 retracted, that shown in the present instance consisting of a pivoted catch 25 on the draw-head to engage a keeper or eye 26 on the slide. When the slide is held retracted by this catch and keeper, the free end of the trip-latch 5 is thrown forwardly to the locking position, but the elongated slot or opening 7 permits the same to have sufficient independent play to allow the tailpiece 4 to swing back into locking engagement therewith. Thus as the tailpiece swings rearwardly the slot 7 allows the free end of the latch 5 to move back sufficiently to permit said tailpiece to be forced backwardly by the action of the knuckle under the impact. The trip-latch then resumes its normal position under the action of the spring and holds the tailpiece locked in the manner before described. The recess 12 in the slide 11 is of course made of such size with respect to the tongue 8 as to allow said tongue to move loosely therein during this action of the parts.

The purpose of the cushioned bumpers 22 of the latch or locking-blocks is to prevent injury by the sudden jar or impact to the slides and at the same time to insure perfect contact with said slides to prevent the same from moving out upon the passing of the cars around a curve, the action of the springs 23 serving to project the bumper and follower, and thereby always maintain it in contact with the slide.

From the foregoing description, taken in connection with the accompanying drawings, the construction, mode of operation, and advantages of the invention will be readily un-

derstood, and it will be seen that it provides simple and effective means for maintaining the parts of two couplings in locking engagement against casual separation and at the same time permits of the adjustment of said parts for cooperation with any of the ordinary forms of the Janney type of coupler now in common use.

Changes in the form, proportion, and the minor details of construction may be made within the scope of the invention without departing from the spirit or sacrificing any of the advantages thereof.

I claim—

1. In a car-coupler, the combination with a draw-head; of a pivoted knuckle having a tailpiece, a pivoted trip-latch for locking the knuckle and tailpiece in coupling position, means independent of the knuckle upon each coupling for effecting the operation of the trip-latch upon a cooperating coupling, and a spring or springs for projecting the knuckle and tailpiece and throwing the trip-latch out of locking engagement, substantially as described.

2. In a car-coupler, the combination with a chambered draw-head; of a pivoted knuckle having a tailpiece, a pivoted trip-latch having a yielding pivotal connection with the draw-head, a slide for swinging said trip-latch, means upon the coupling for operating the slide upon a cooperating coupling, a spring or springs for projecting the knuckle and tailpiece and retracting the trip-latch, and means for throwing the slide out of operation to adapt the coupling for use in connection with an ordinary form of Janney coupling, the yielding connection of the trip-latch with the draw-head permitting of the cooperation of said latch with the tailpiece, substantially as described.

3. In a car-coupling, the combination with a chambered draw-head; of a pivoted knuckle having a tailpiece, a trip-latch cooperating therewith having a yielding pivotal connection with the draw-head, a slide for operating said trip-latch, a spring or springs for projecting the knuckle and tailpiece and retracting the trip-latch, and a vertically-sliding wedge-shaped block upon each coupling to operate the coacting slide upon the other coupling, substantially as described.

4. In a car-coupling, the combination with a chambered draw-head; of a pivoted knuckle having a tailpiece, a trip-latch cooperating therewith having a yielding pivotal connection with the draw-head, a slide for operating said trip-latch, a spring or springs for projecting the knuckle and tailpiece and retracting the trip-latch, a vertically-sliding locking-block upon each coupling to operate the cooperating slide on an opposing coupling, and a cushioned bumper or follower carried by said block, substantially as described.

5. In a car-coupling, the combination with a chambered draw-head; of a pivoted knuckle having a tailpiece, a trip-latch cooperating

therewith having a yielding pivotal connection with the draw-head, a slide for operating said trip-latch and adapted when counterpart couplings are used to hold the trip-latch in
5 locked position with the tailpiece of the knuckle, and means for holding the slide in retracted position whereby the coupling is adapted to cooperate with a Janney-type coupling.
10 6. In a car-coupling, the combination with a chambered draw-head, its pivoted knuckle having the usual tailpiece, and a spring-actuated latch having a pin-and-slot connection with the draw-head and arranged out of the
15 path of movement of the tailpiece, of means actuated upon the coming together of two coupling-heads, to move one end of the latch into the path of movement of the tailpiece.

7. In a car-coupling, the combination with a chambered head; of a pivoted knuckle having a tailpiece, a pivoted yielding spring-actuated trip-latch arranged normally out of the path of movement of the tailpiece, and means for projecting it into the path of movement of the tailpiece upon coupling, and
25 means for independently setting the trip-latch within the path of movement of the tailpiece.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

JOHN M. CLARK.

Witnesses:

JOHN W. CLARK,
GEORGE M. BEDELL.