

I. N. TOWER.
CAR COUPLING.

(Application filed Aug. 20, 1901.)

(No Model.)

2 Sheets—Sheet 1.

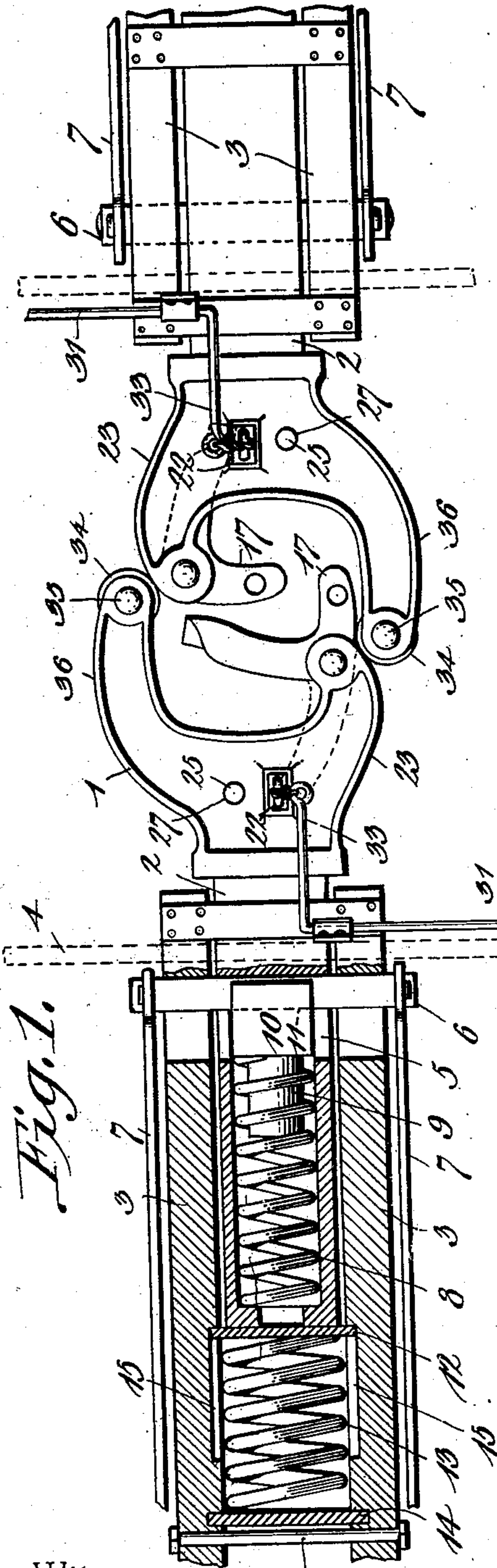


Fig. 1.

Witnesses
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Fig. 5.

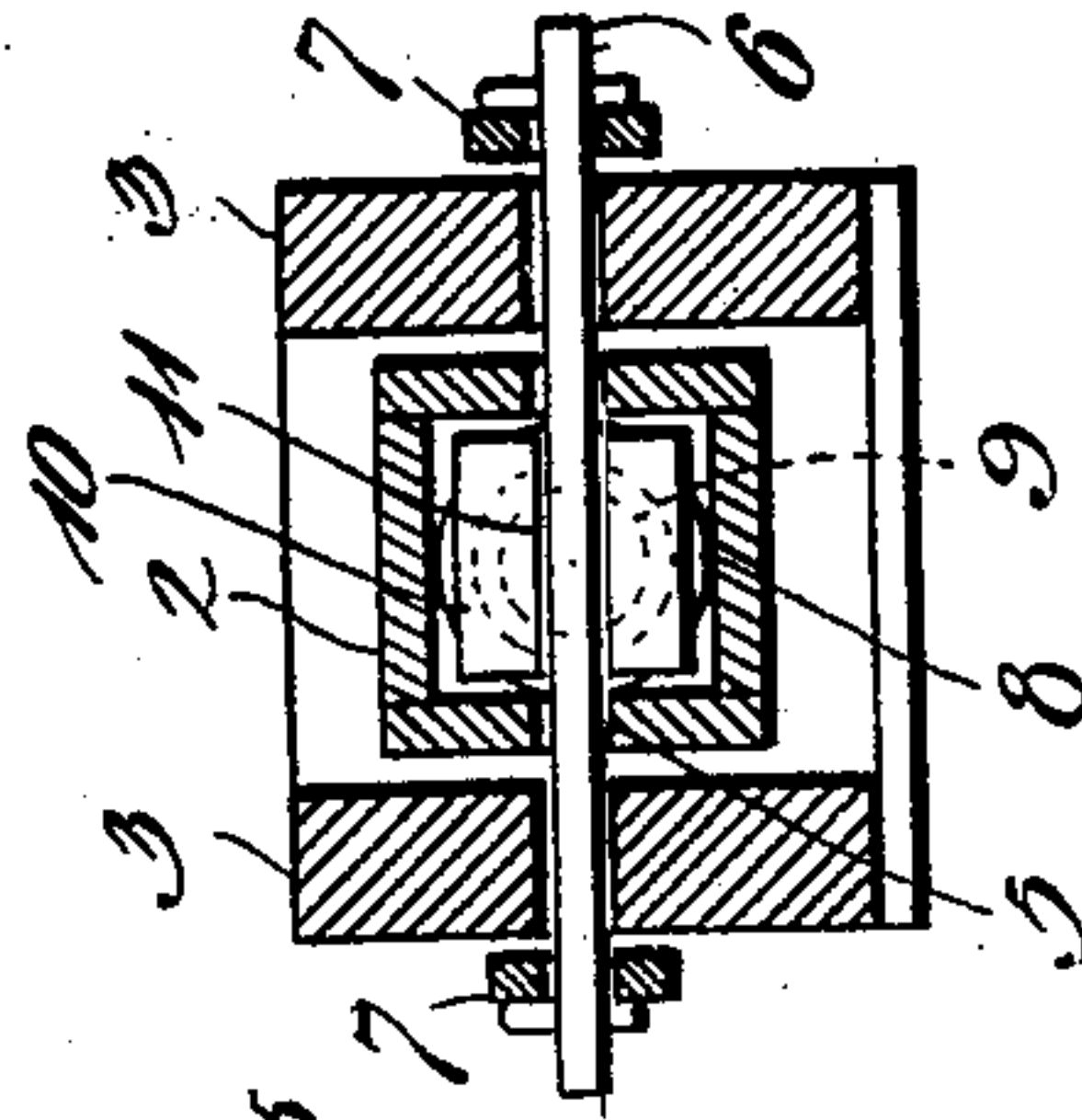


Fig. 2.

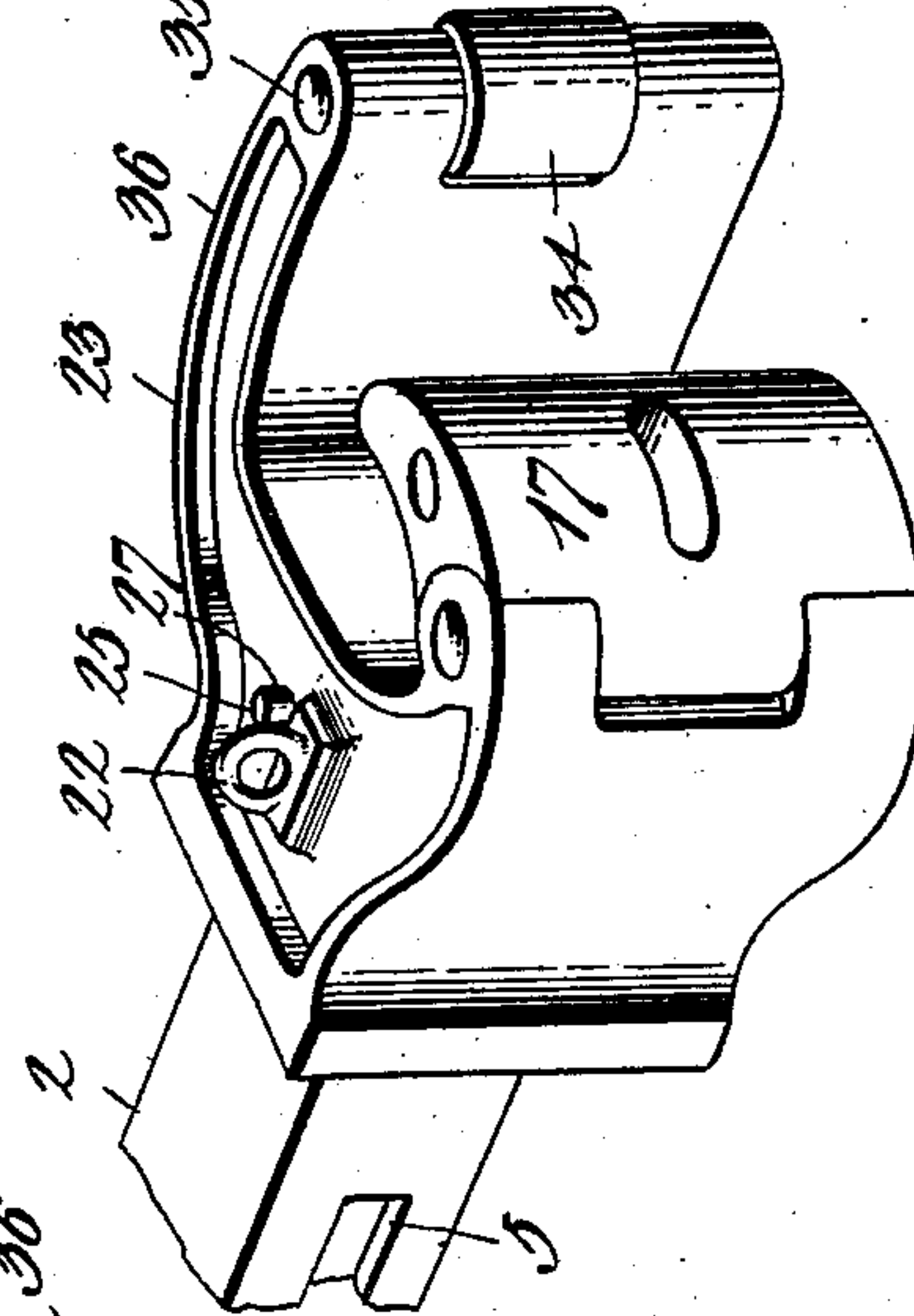
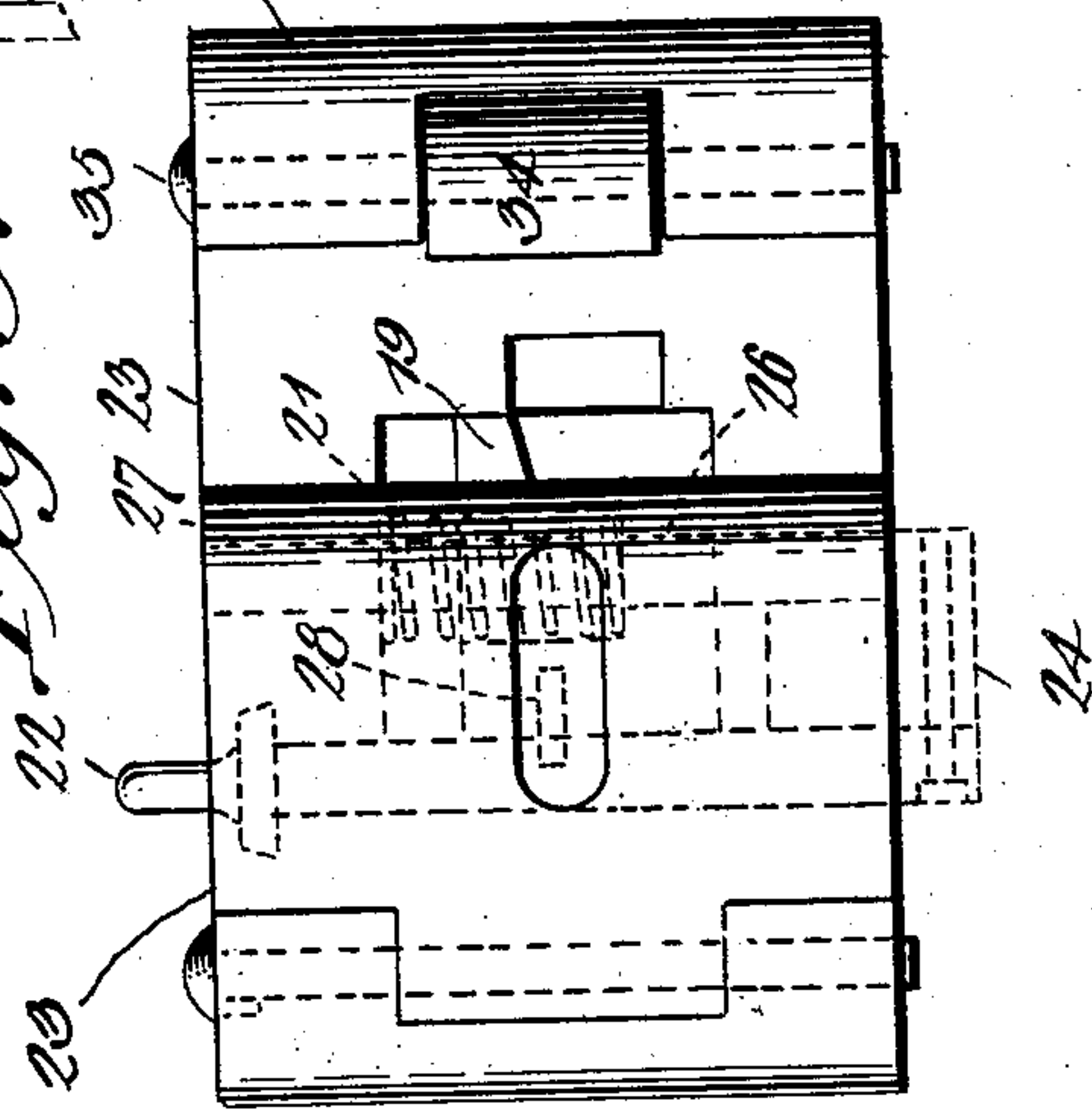


Fig. 3.



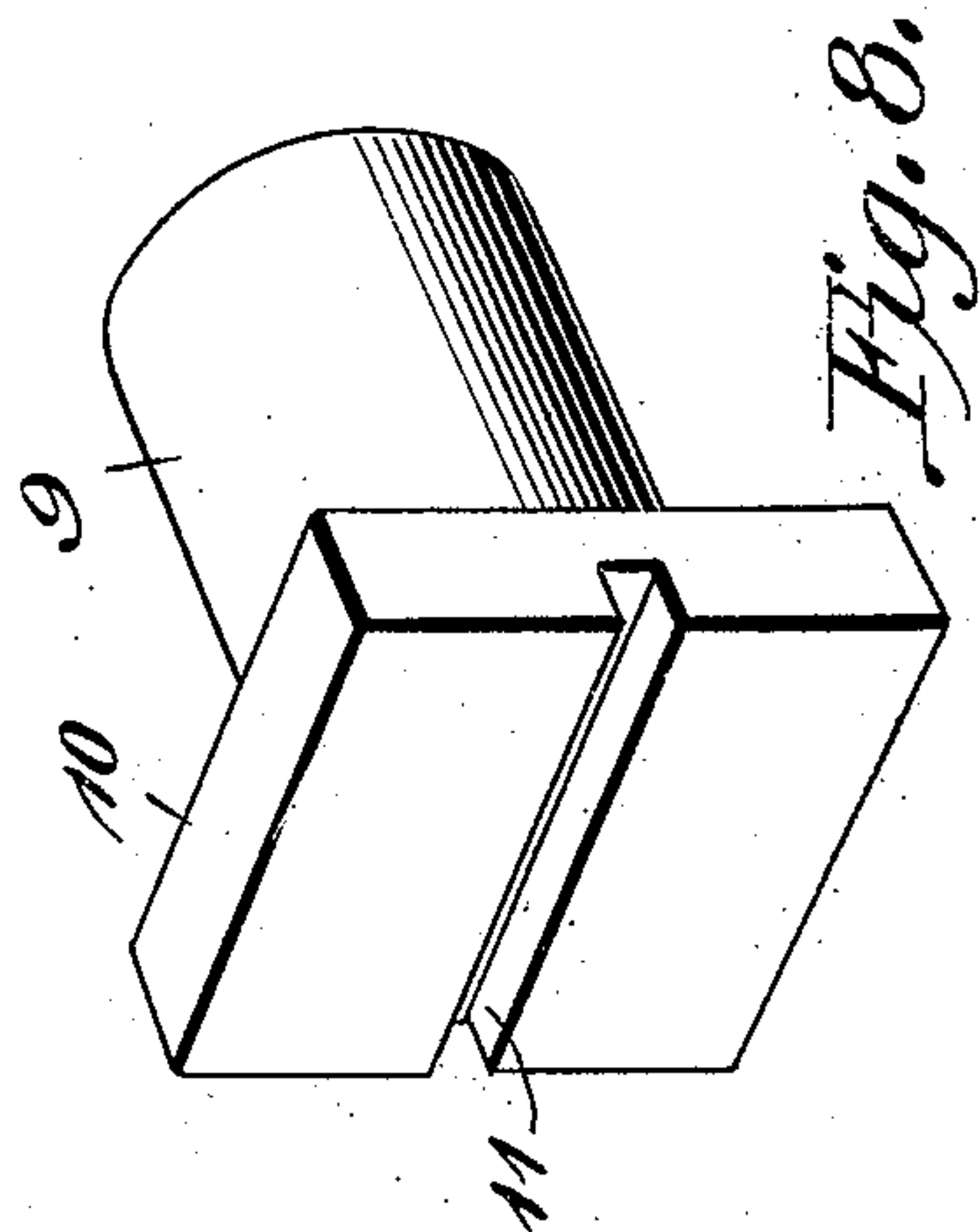
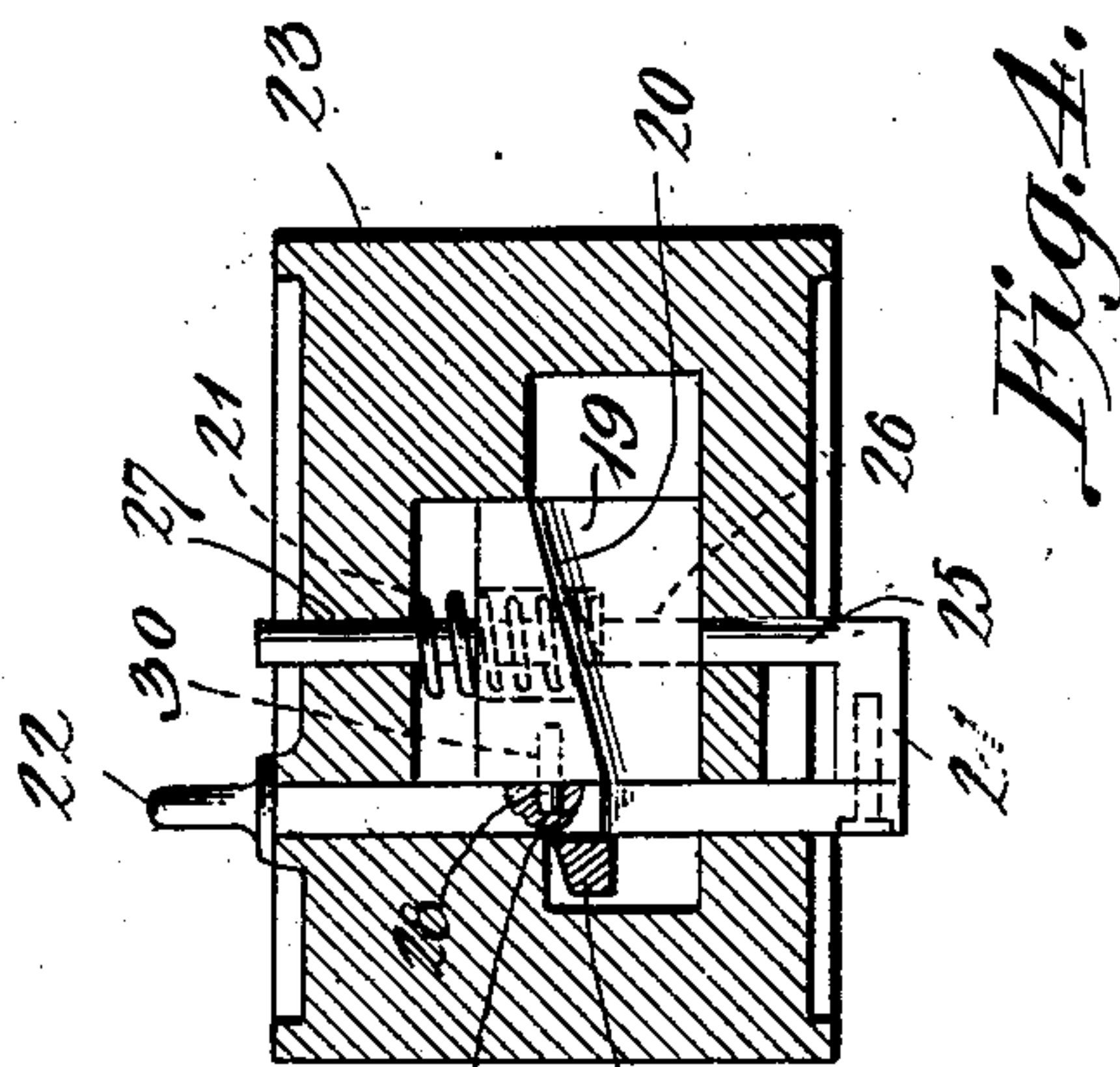
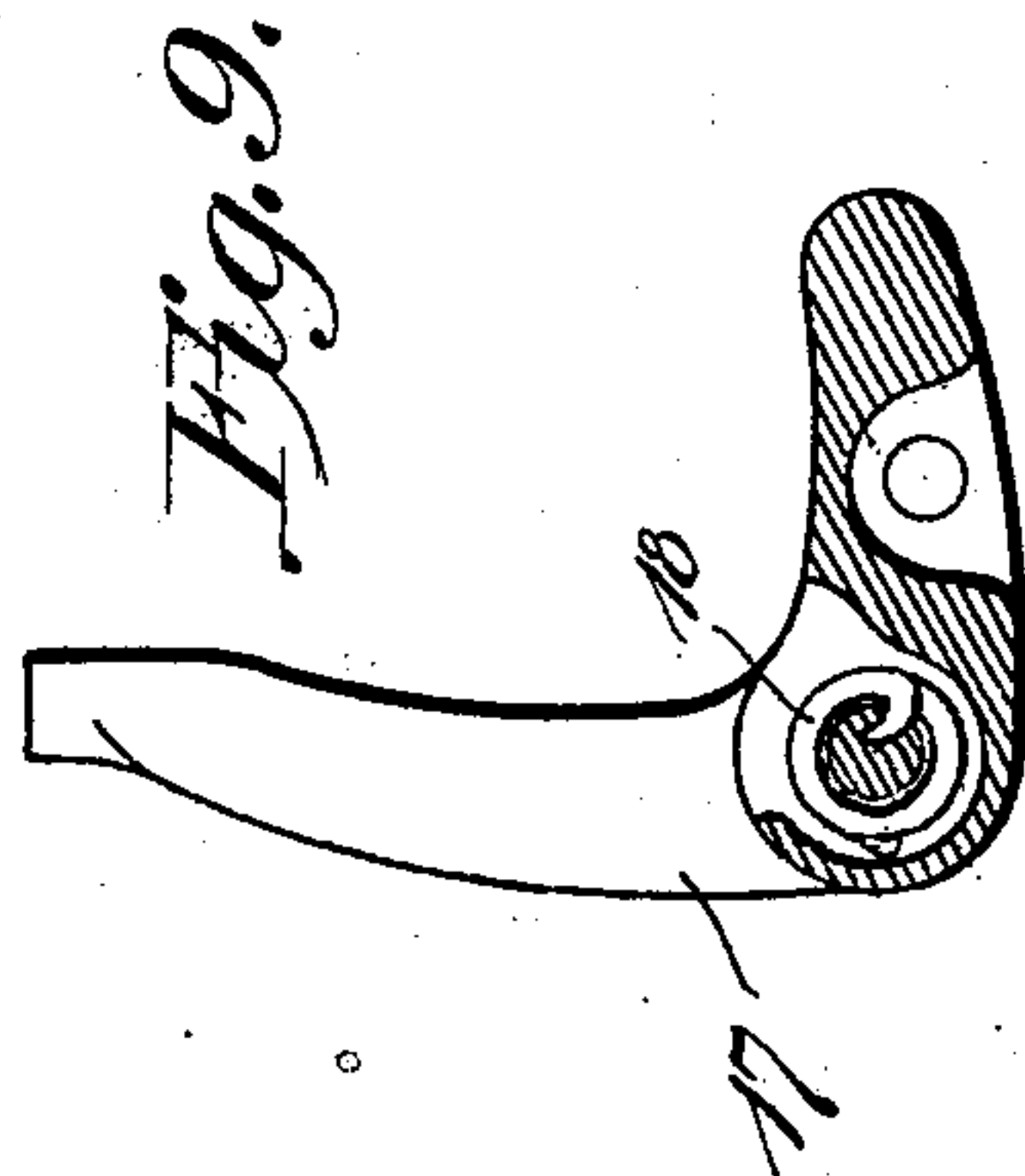
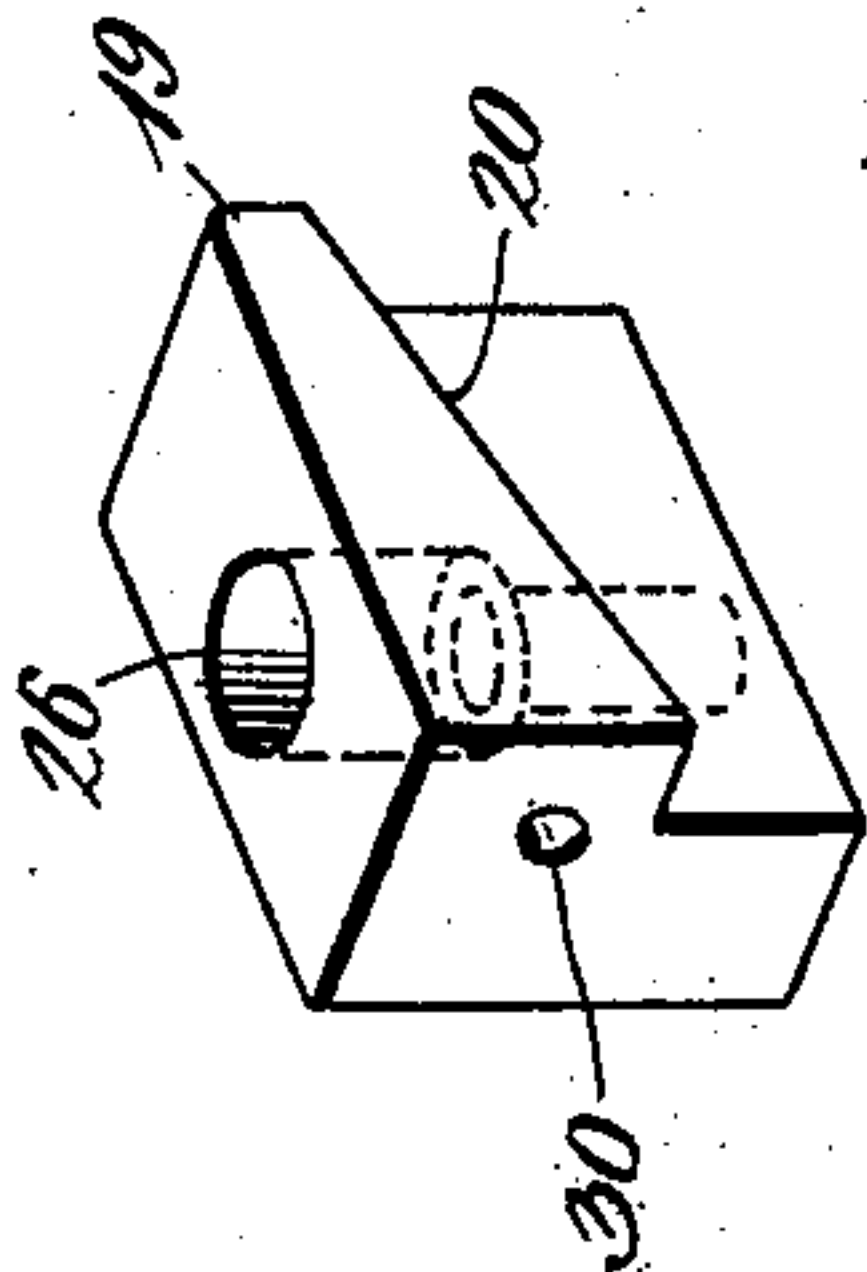
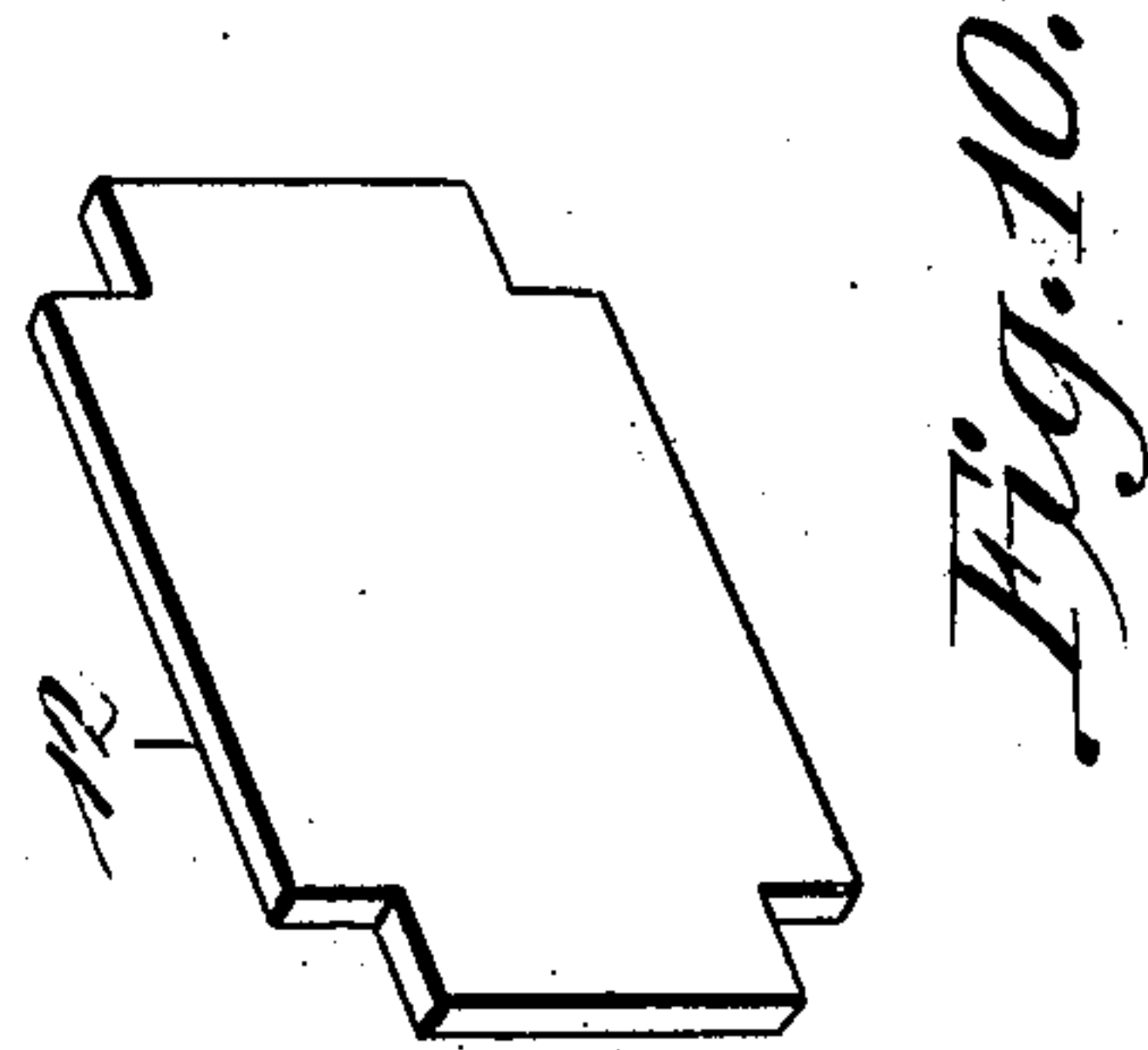
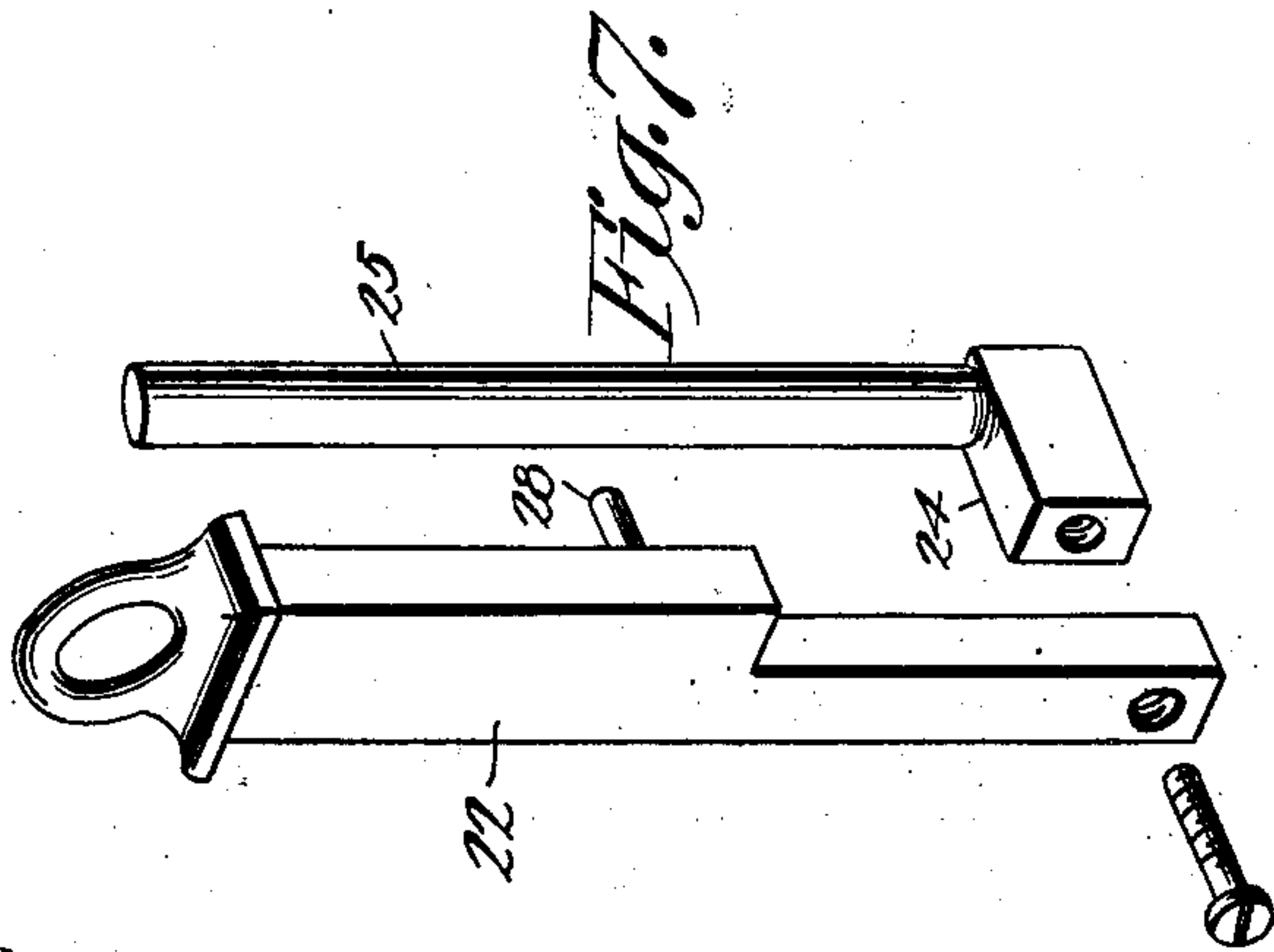
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UNITED STATES PATENT OFFICE.

ISAAC N. TOWER, OF MEEKER, LOUISIANA.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 712,980, dated November 4, 1902.

Application filed August 20, 1901. Serial No. 72,727. (No model.)

To all whom it may concern:

Be it known that I, ISAAC N. TOWER, a citizen of the United States, residing at Meeker, in the parish of Rapides and State of Louisiana, have invented a new and useful Car-Coupler, of which the following is a specification.

The invention relates to improvements in car-couplings.

10 The object of the present invention is to improve the construction of car-couplings and the means for mounting the same on a car and to provide a simple and comparatively inexpensive car-coupling capable of coupling
15 automatically and adapted to afford considerable longitudinal movement or play to enable trains of great length to be readily started.

The invention consists in the construction and novel combination and arrangement of
20 parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended.

In the drawings, Figure 1 is a plan view, partly in section, of two draw-heads constructed in accordance with this invention and arranged for automatic coupling. Fig. 2 is a perspective view of one of the draw-heads. Fig. 3 is a front elevation of the same. Fig. 4 is a transverse sectional view of the
30 draw-head. Fig. 5 is a similar view taken transversely of the draw-bar and illustrating the manner of mounting the same. Fig. 6 is a detail view of the locking-block. Fig. 7 is a similar view of the vertically-movable device for operating the locking-block, the parts
35 being separated. Fig. 8 is a detail view of the spring-engaged block for cushioning the car-coupling in starting a train. Fig. 9 is a detail view of the knuckle of the draw-head.
40 Fig. 10 is a detail view of one of the spring-engaged plates.

Like numerals of reference designate corresponding parts in all the figures of the drawings.

45 1 designates a draw-head provided with a draw-bar 2, arranged between draft-timbers 3 of a car 4 and having a transverse slot 5. The draw-head is supported between the draft-timbers by suitable cross bars or pieces,
50 and the transverse slot or opening 5 receives a transverse bar 6, to which the draft rods or bars 7 are connected. The draft rods or bars

7 extend the entire length of the car and connect the two draw-heads thereof, and outer cushioning-springs 8 are interposed between
55 the transverse bars 6 and the inner or rear walls or ends of the draw-bars. The inner or rear end of the spring 8 is seated against the inner or rear end of the draw-bar, which has a longitudinal opening, and the front or
60 outer end receives a stem 9 of a block 10, slidably mounted in the opening of the draw-bar and provided at its front end with a groove 11 for the reception of the adjacent edge of the bar 6. The rear end of the draw-
65 bar fits against the plate 12 and is cushioned by a spring 13, interposed between the plate 12 and a similar plate 14. The plate 12 is provided at opposite sides with tongues which are arranged in longitudinal grooves 15 of the
70 draft-timbers. The plate 14 is provided with tongues which are arranged in suitable recesses of the draft-timbers, and the latter are connected by transverse rods 16. These springs cushion the draw-head in coupling,
75 backing, and hauling, and the draft mechanism will permit the necessary longitudinal play of the parts to enable the cars of a long train to be successively started.

The draw-head has pivoted to one side of
80 it a knuckle 17, which when released is automatically opened by a spring 18, and the arm of the knuckle when the latter is closed is engaged by a vertically-movable locking-
85 block 19, recessed or cut away at its front to provide a beveled or inclined face 20, adapted to be engaged by the arm of the knuckle, whereby the locking-block is automatically
90 raised when the knuckle is closed. When the arm of the knuckle passes inward beyond the locking-block, the latter falls and holds the knuckle in its closed position.

The locking-block is held in its engaging position by a coiled spring 21, seated in a recess of the top of the locking-block and en-
95 gaging the top of the draw-head, and the locking-block is elevated by a vertically-movable lifting-bar 22, having its upper portion extended through the top of the draw-head 23. The lower portion of the lifting-
100 bar is cut away at the recess of the locking-block, and the lower end of the bar 22 is connected to an arm 24 of a vertical guide-bar 25, which passes through openings 26 and 27

of the locking-block and the draw-head and through the spring 21. The upper portion of the lifting-bar is connected with the locking-block by a pin 28, arranged in perforations or sockets 29 and 30 of the bar 22 and the block 19. The pin positively connects the locking-block with the lifting-bar, so that the two parts move in unison, whether actuated by the spring 21 or by the uncoupling mechanism. The uncoupling mechanism consists of a shaft 31, journaled in suitable bearings of the car and provided at its ends with arms 32 and 33, the outer arm forming a handle and the inner arm being connected with the lifting-bar. In order to facilitate the operation of coupling, the draw-head is provided at the side opposite that at which the knuckle is pivoted with an antifriction-roller 34, and the antifriction-rollers of two draw-heads are adapted to permit the latter to slide freely on each other in coupling. The antifriction-roller, which is disposed vertically, is mounted in a suitable recess of the draw-head on a pivoted knuckle 35, and it projects outward beyond the draw-head at the end and sides of the guard-arm 36, as shown. The engaging portion of the knuckle is provided with a coupling-pin perforation and a recess to enable the draw-head to be connected with an ordinary pin-and-link car-coupling.

What I claim is—

1. In a car-coupling a draw-head having a pivoted knuckle at one side and provided at the opposite side with an arm having an anti-

friction device arranged to engage another draw-head to permit two draw-heads to slide freely on each other in coupling, substantially as described.

2. In a car-coupling, the combination of a draw-head, a knuckle pivoted to the draw-head at one side thereof, and a vertically-disposed antifriction-roller mounted on the draw-head at the opposite side thereof, substantially as described.

3. In a car-coupling, the combination of a draw-head, a pivoted knuckle, a locking-block, a lifting-bar arranged at one side of the locking-block, a guide-bar connected with the lower portion of the lifting-bar and extending through the locking-block, a spring disposed on the guide-bar and engaging the locking-block, and means for connecting the lifting-bar with the locking-block, substantially as described.

4. In a car-coupling, the combination of a draw-head, a pivoted knuckle, a vertically-movable locking-block, a lifting-bar arranged at one side of the block, a guide-bar extending through the block and having an arm at its lower end connected with the lifting-bar, a pin connecting the latter with the block, and a spring disposed on the guide-bar and seated in a recess of the lock and engaging the draw-head, substantially as described.

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