

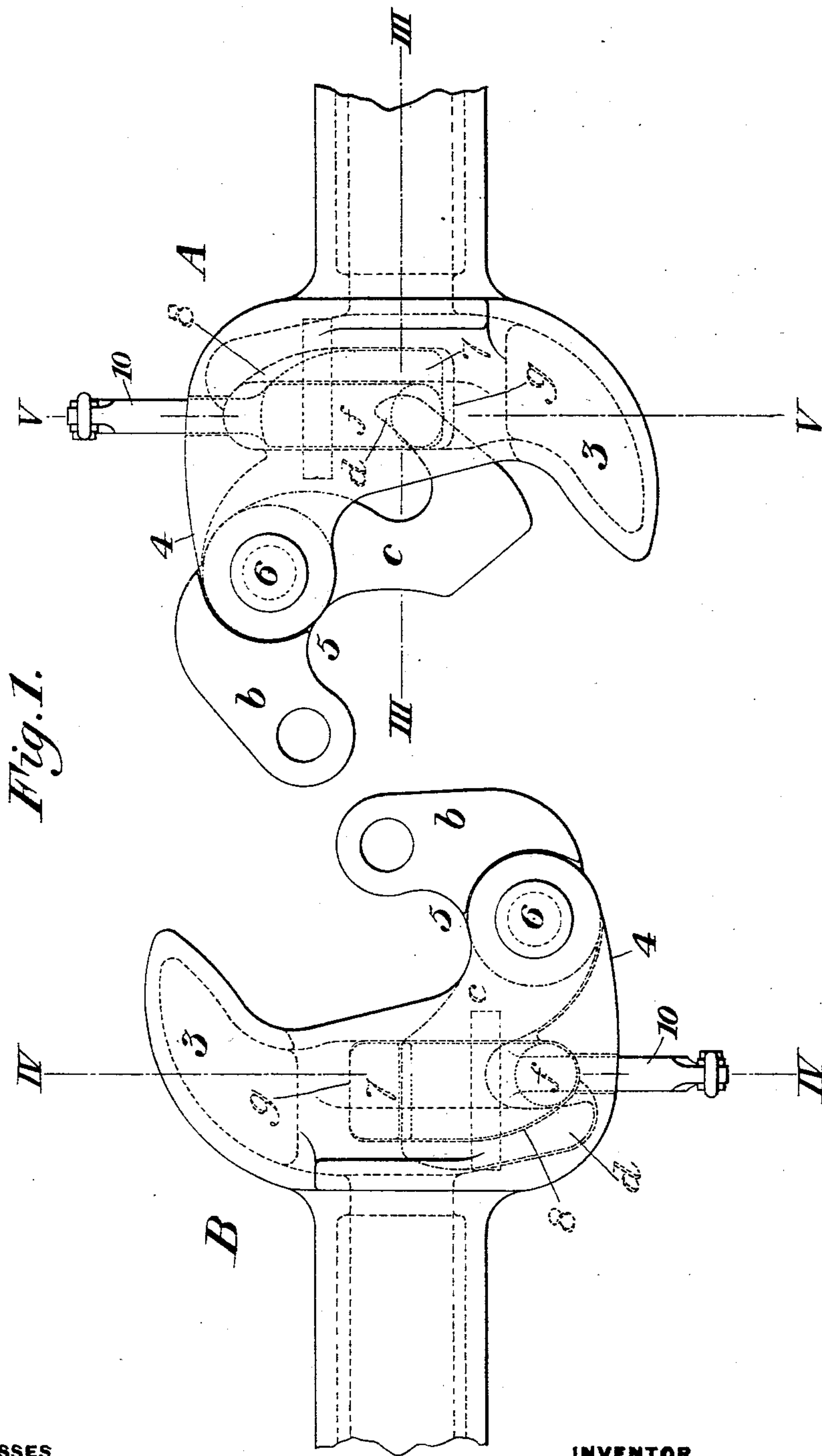
(No Model.)

3 Sheets—Sheet 1.

C. A. TOWER.
CAR COUPLING.

No. 541,401.

Patented June 18, 1895.



WITNESSES

A. L. Gill
J. M. Corwin

INVENTOR

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by his attorneys
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(No Model.)

3 Sheets—Sheet 2.

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Fig. 3.

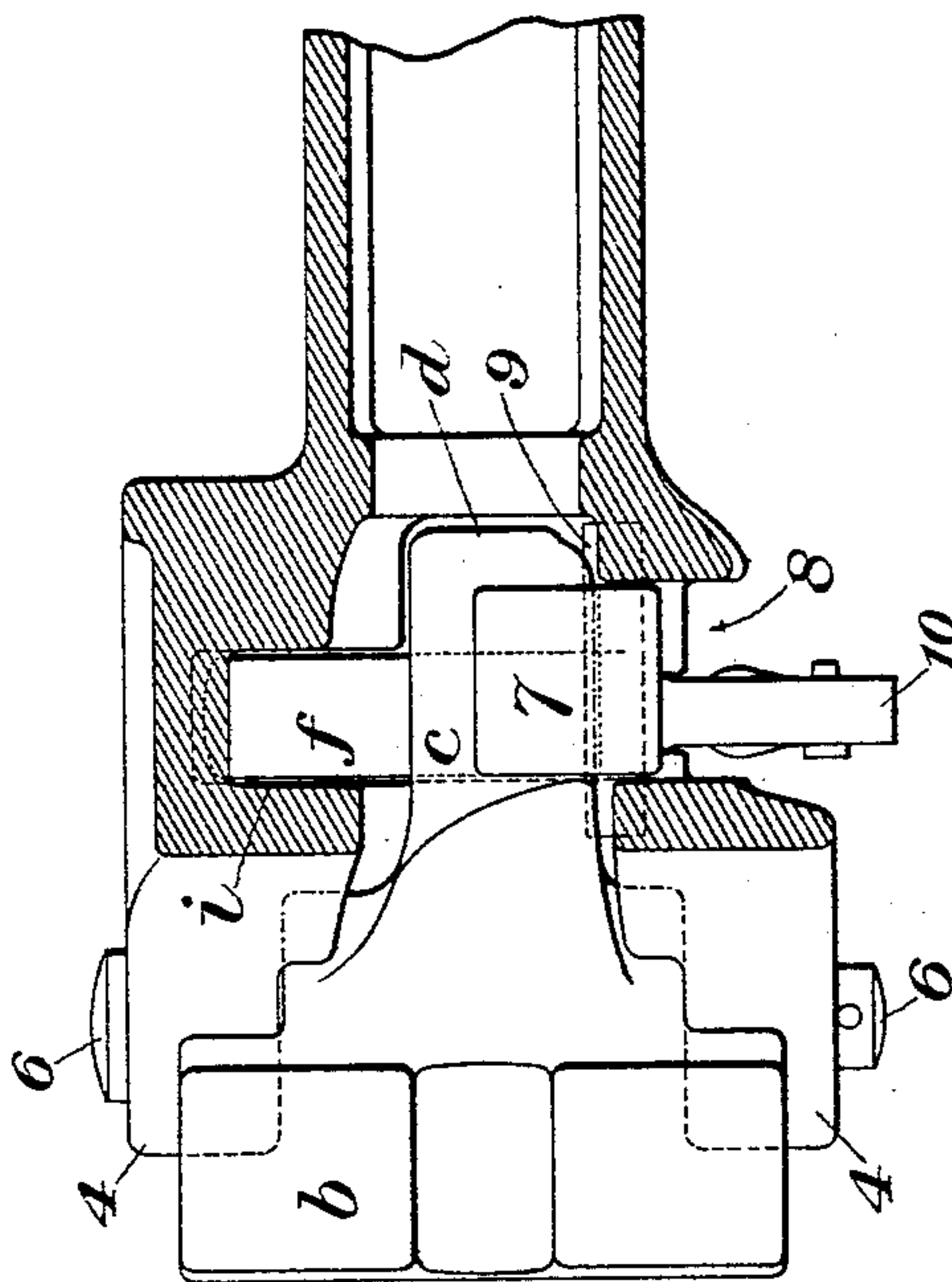
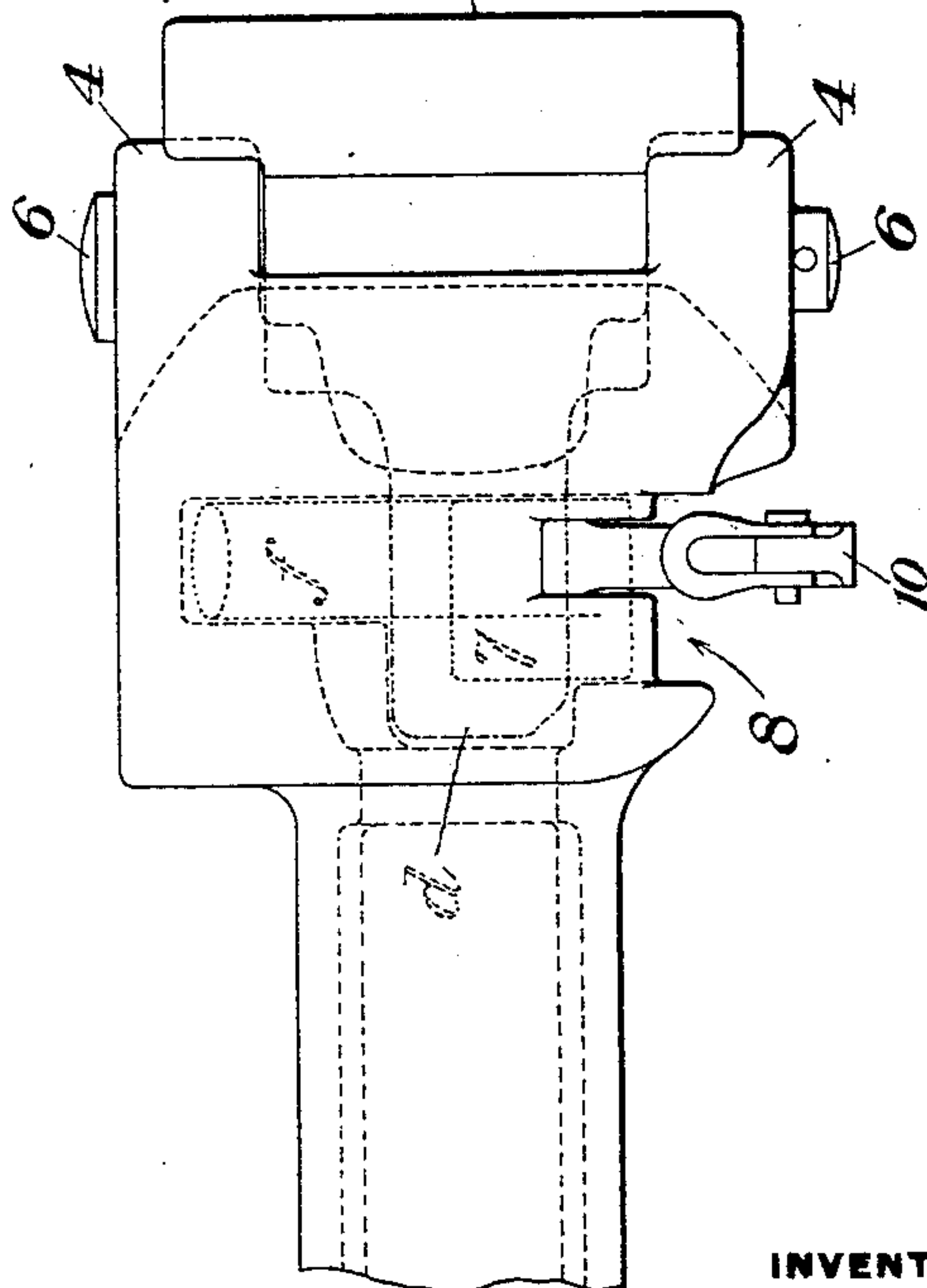


Fig. 2.



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(No Model.)

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Fig. 5.

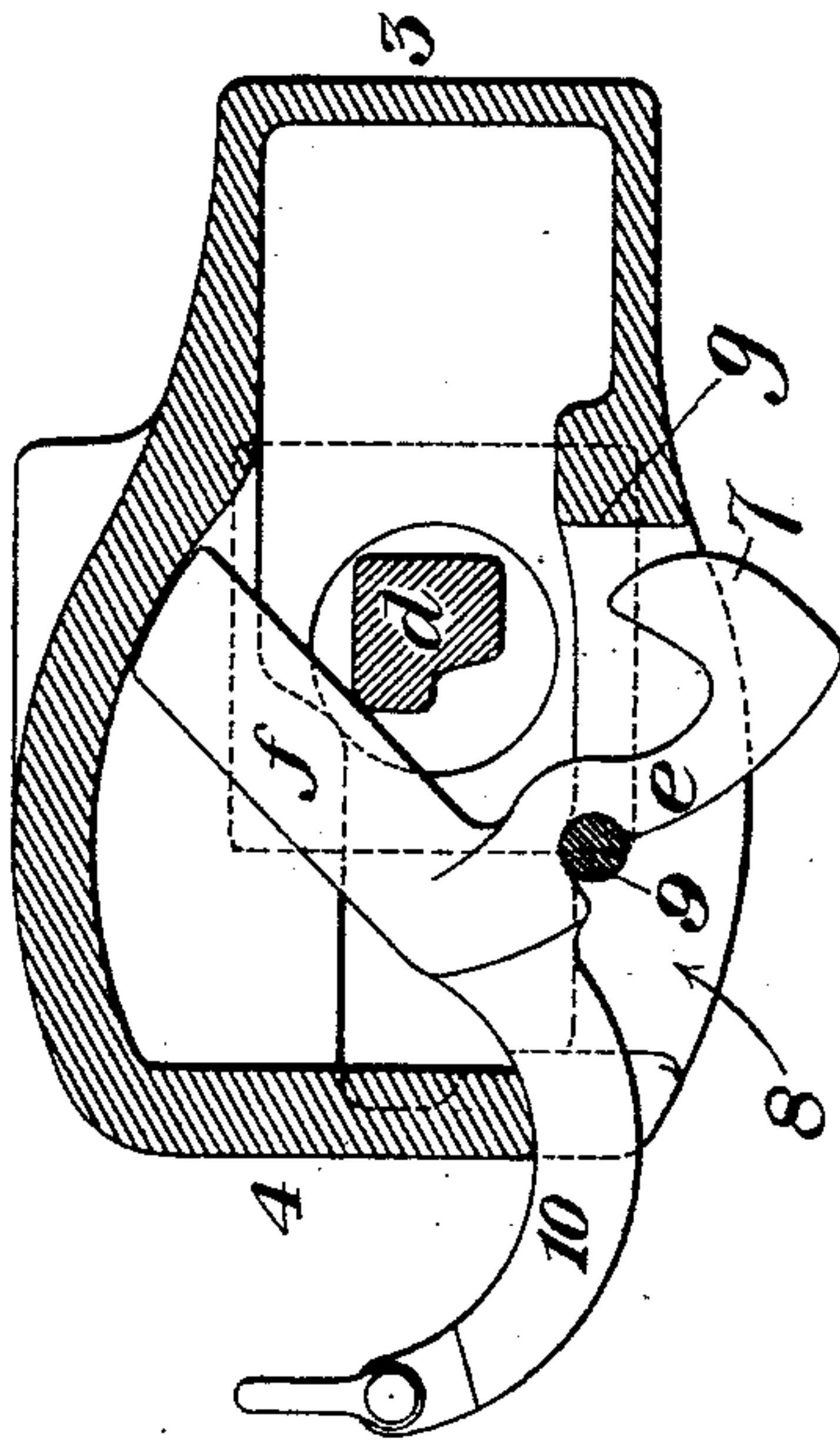
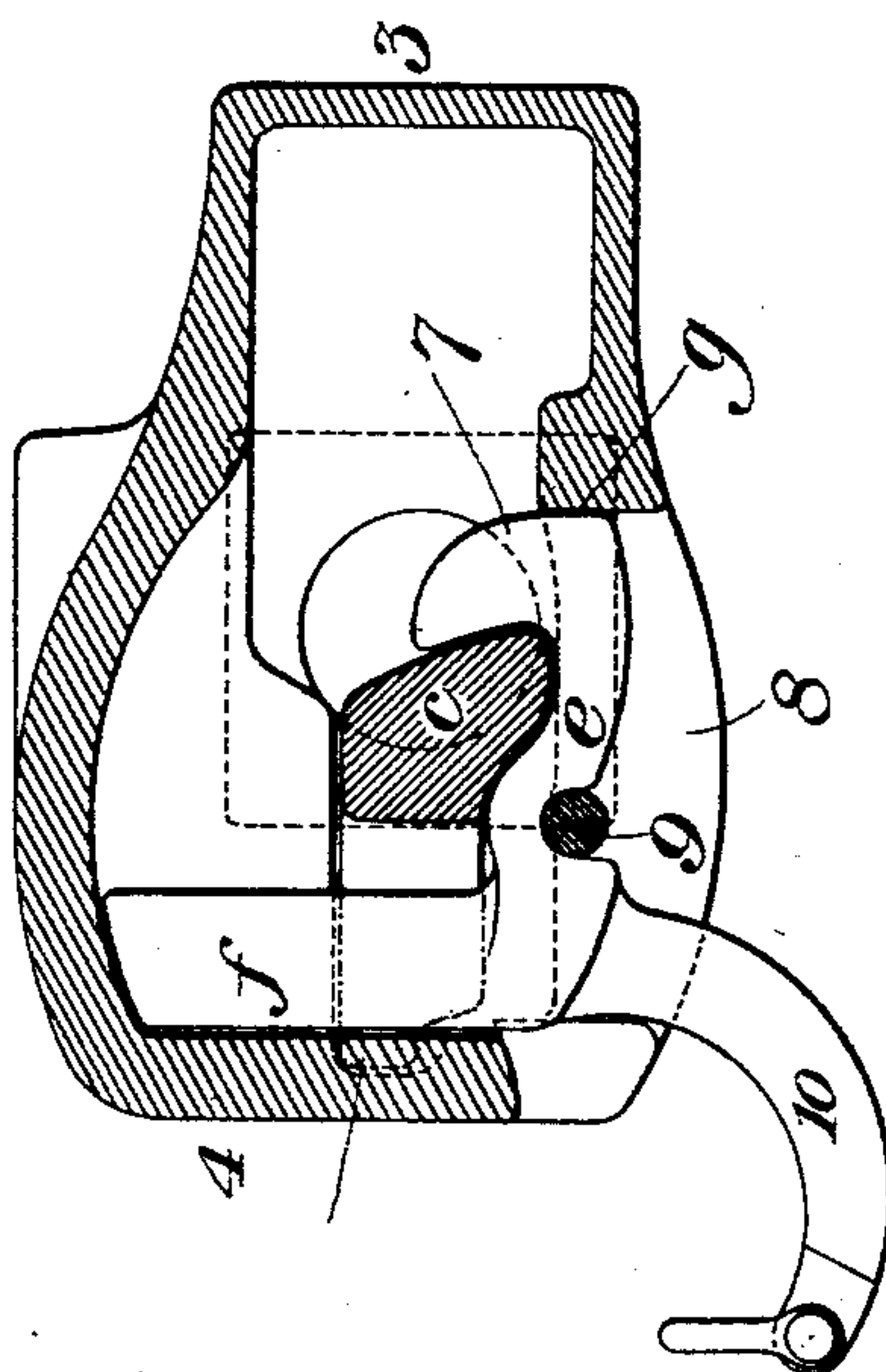


Fig. 4.



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UNITED STATES PATENT OFFICE.

CLINTON A. TOWER, OF CLEVELAND, OHIO, ASSIGNOR TO THE NATIONAL MALLEABLE CASTINGS COMPANY, OF SAME PLACE.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 541,401, dated June 18, 1895.

Application filed December 28, 1894. Serial No. 533,172. (No model.)

To all whom it may concern:

Be it known that I, CLINTON A. TOWER, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented a new and useful Improvement in Car-Couplers, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a plan view showing two coupler-heads A B constructed in accordance with my invention, and having their parts in proper position to enable them to be coupled together. Fig. 2 is a side elevation of the coupler B, shown in Fig. 1. Fig. 3 is a vertical longitudinal section on the line III III of Fig. 1, showing the knuckle when locked. Fig. 4 is a cross-section on the line IV IV of Fig. 1, and Fig. 5 is a cross-section on the line V V of Fig. 1.

Like symbols of reference indicate like parts in each view.

My invention relates to modifications in the construction of the car coupler shown and described in a prior patent, No. 507,511, granted to me on October 24, 1893, and is included within the broader or generic claims thereof.

My device belongs to that class of car couplers known as twin-jaw couplers, in which the coupling-head has a swinging knuckle adapted to engage a similar knuckle in the coupler of another car; and also has means by which the knuckles can be locked in engagement with each other, and by which they can be opened into position for recoupling without need for the brakeman to go between the ends of the cars.

In the patent above referred to I have described a twin-jaw coupler having a swinging knuckle combined with a locking and opening device consisting of an angled piece set in a recess in the coupler-head in which it is movable vertically and radially, (or, as shown in Fig. 7 of said patent, movable radially alone,) said locking and opening device having three members, viz., a head which engages the front of the knuckle-tail when the knuckle is locked, an arm extending over the tail, and a second arm extending vertically back of the

tail and adapted to engage the same and to move the knuckle open when the angled piece is moved radially by the brakeman.

In the coupler shown and described in the present specification there is also a swinging knuckle and a radially movable angled piece having a head which locks the knuckle, and a rear arm by which the knuckle is swung open, but instead of extending over the tail of the knuckle, as shown in said patent, the horizontal member of the angled piece extends under the tail, and the head and rear arm project upwardly instead of downwardly.

In the drawings, Fig. 1, A and B are two coupler heads which in general may be of the usual type. Each coupler head has two jaws 3 and 4 and is provided with an internal cavity or recess which extends laterally into the jaw 4 and is adapted to permit the knuckle to swing upon its pivot pin 6. The knuckle has an outer arm *b* and an inner arm or tail *c*, set at or nearly at right angles to each other. The angled locking and opening piece above mentioned has a lower and transversely extending member or arm *e* which fits under the tail of the knuckle, an upwardly projecting head or block 7 adapted to fit against the front side of the knuckle's tail and to lock the knuckle in a closed position, and an arm *f* which extends upwardly at the rear of the tail. There is a vertical cavity 8 in the floor of the coupler-head beneath the angled piece which is adapted to permit radial motion of the latter, and there is a cross pin or shoulder 9 in or at said recess on which a notch in the transverse member *e* fits, said pin or shoulder thus serving as the fulcrum or pivot on which the angled piece may tip. In order to move it radially, I provide the angled piece with an arm 10 which projects downwardly through the floor of the coupler, the angled piece and said arm being so related that the center of gravity of these parts conjoined shall be in proper position to hold the angled piece normally with its head 7 in elevated position and its arm *f* retracted, as shown in Fig. 4.

When the knuckle is locked, as shown in Figs. 2, 3, and 4, and at B in Fig. 1, the tail of the knuckle is back of the head 7 and the

forward end of said head bears against and is braced by a shoulder *g* on the coupler, thus locking the knuckle in closed position.

If it be desired to unlock and open the coupler knuckle, the brakeman raises the arm 10 by a suitable lifting chain or other device provided for that purpose, and thereby tips the angled piece, withdrawing its head 7 down out of the path of the knuckle and moving its rear arm *f* laterally, so as to bear against the knuckle's tail and to swing the knuckle open, as shown in Fig. 5, and at A in Fig. 1. When the knuckle is again swung back into its closed position, the engagement of its tail with the arm *f* will move the angled piece in the opposite direction, and when the knuckle has reached its closed position the head of the angled piece will have been brought in front of the tail so as to lock it as above described. In order to brace the knuckle against longitudinal strain, the end of its tail may be formed with a hooked portion *d* which, when the knuckle is closed, fits around the arm *f* and bears against the same, and the interior of the coupler-head may be formed with a shouldered recess *i* against which the arm *f* has a bearing and by which it is braced. The end portion of the tail, forming the rear side of the hook, may be made sufficiently long so that when the knuckle is swung open to its full extent the tail shall not pass entirely beyond the head. The head cannot therefore rise behind the tail and into the path of its motion when the knuckle is open.

Without limiting myself strictly to the precise construction described and shown herein, since these may be modified in various ways by those skilled in the art without departure from my invention as defined in the following claims, what I claim is—

1. A coupler having a swinging knuckle and a radially movable angled locking and opening device having a member which fits

under the knuckle's tail, a second member which fits in front of the same, and a third member which fits back of the tail and serves to open the knuckle when the angled piece is moved radially.

2. A coupler having a swinging knuckle and a radially movable angled locking and opening device having a member which fits under the knuckle's tail, a second member which fits in front of the same, and a third member which fits back of the tail and serves to open the knuckle when the angled piece is moved radially, said angled piece being pivoted loosely on a support at the base of the coupler-head.

3. A coupler having a swinging knuckle and a radially movable angled locking and opening device having a member which fits under the knuckle's tail, a second member which fits in front of the same, and a third member which fits back of the tail and serves to open the knuckle when the angled piece is moved radially, said angled piece having an opening arm which extends downwardly through the floor of the coupler.

4. A coupler having a swinging knuckle and a radially movable angled locking and opening device having a member which fits under the knuckle's tail, a second member which fits in front of the same, and a third member which fits back of the tail and serves to open the knuckle when the angled piece is moved radially, said third member fitting within and being braced by a shouldered recess in the coupler head, and being adapted to be engaged by a hooked portion of the tail of the knuckle; substantially as described.

In testimony whereof I have hereunto set my hand.

CLINTON A. TOWER.

Witnesses:

O. K. BROOKS,
D. W. CALL.