

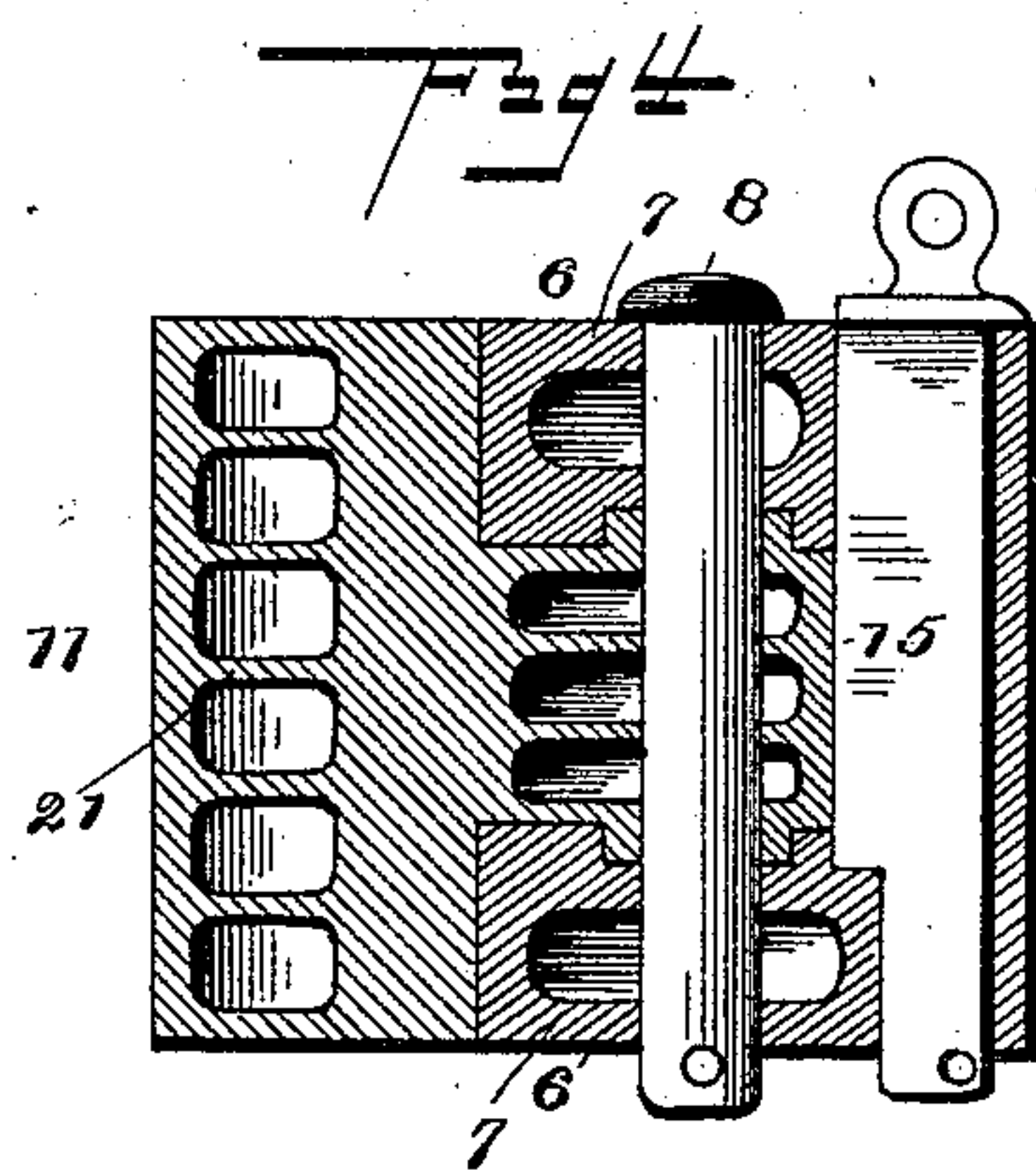
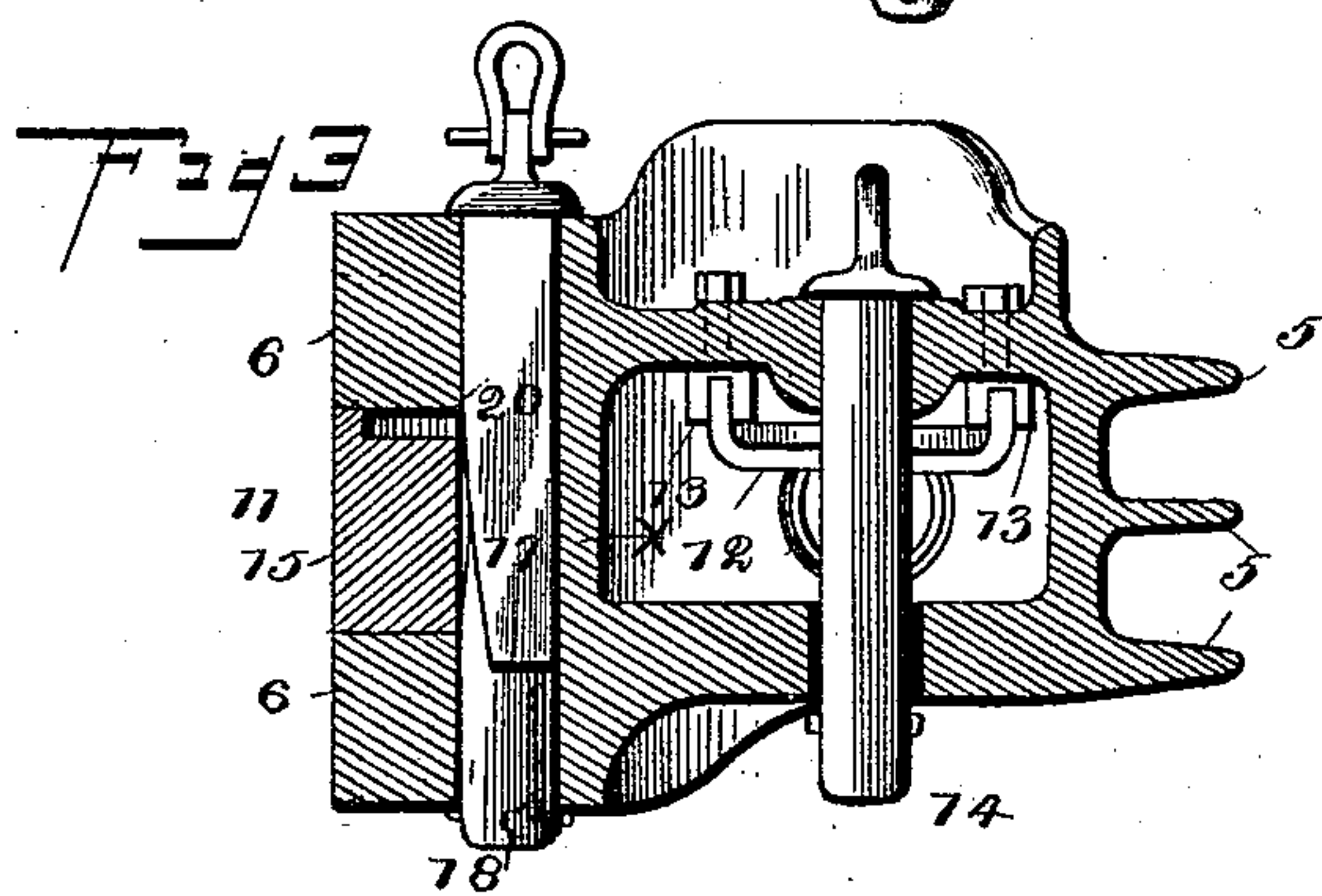
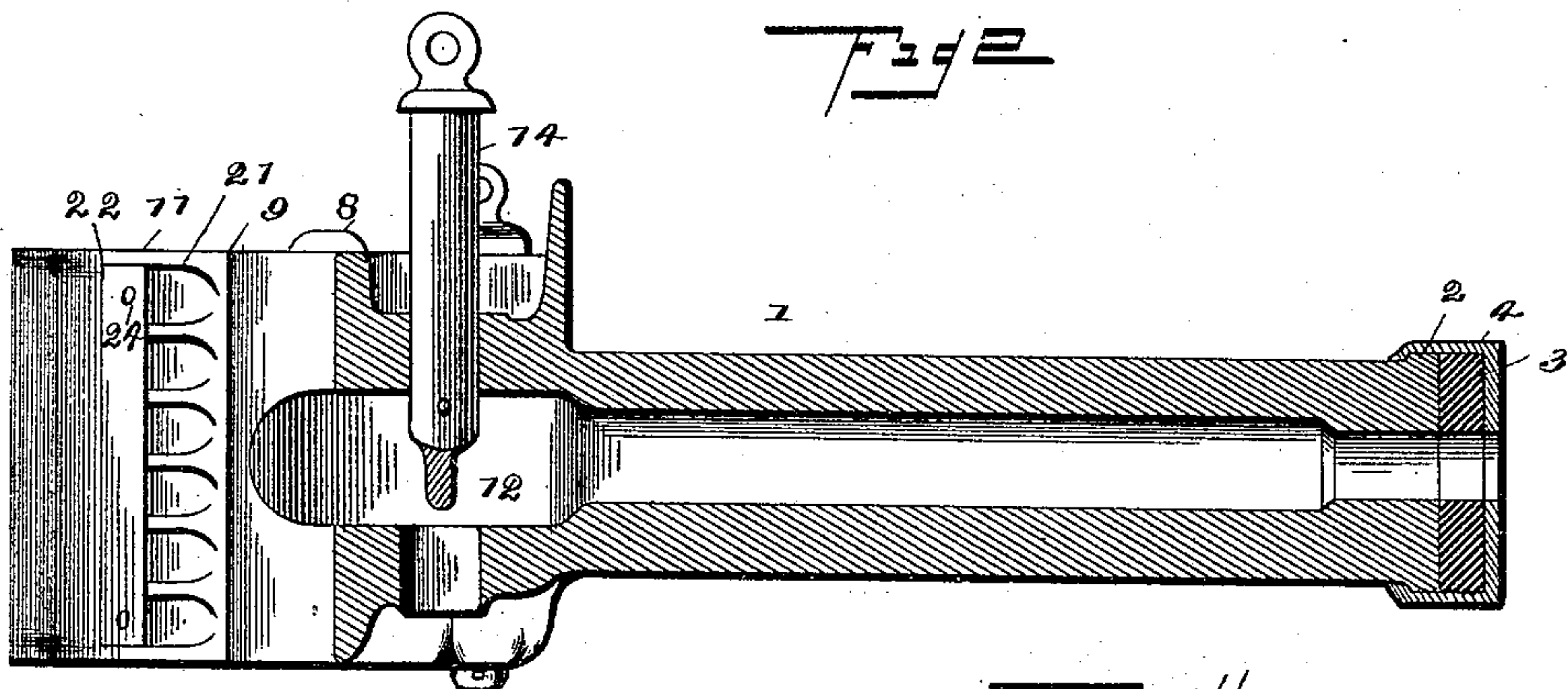
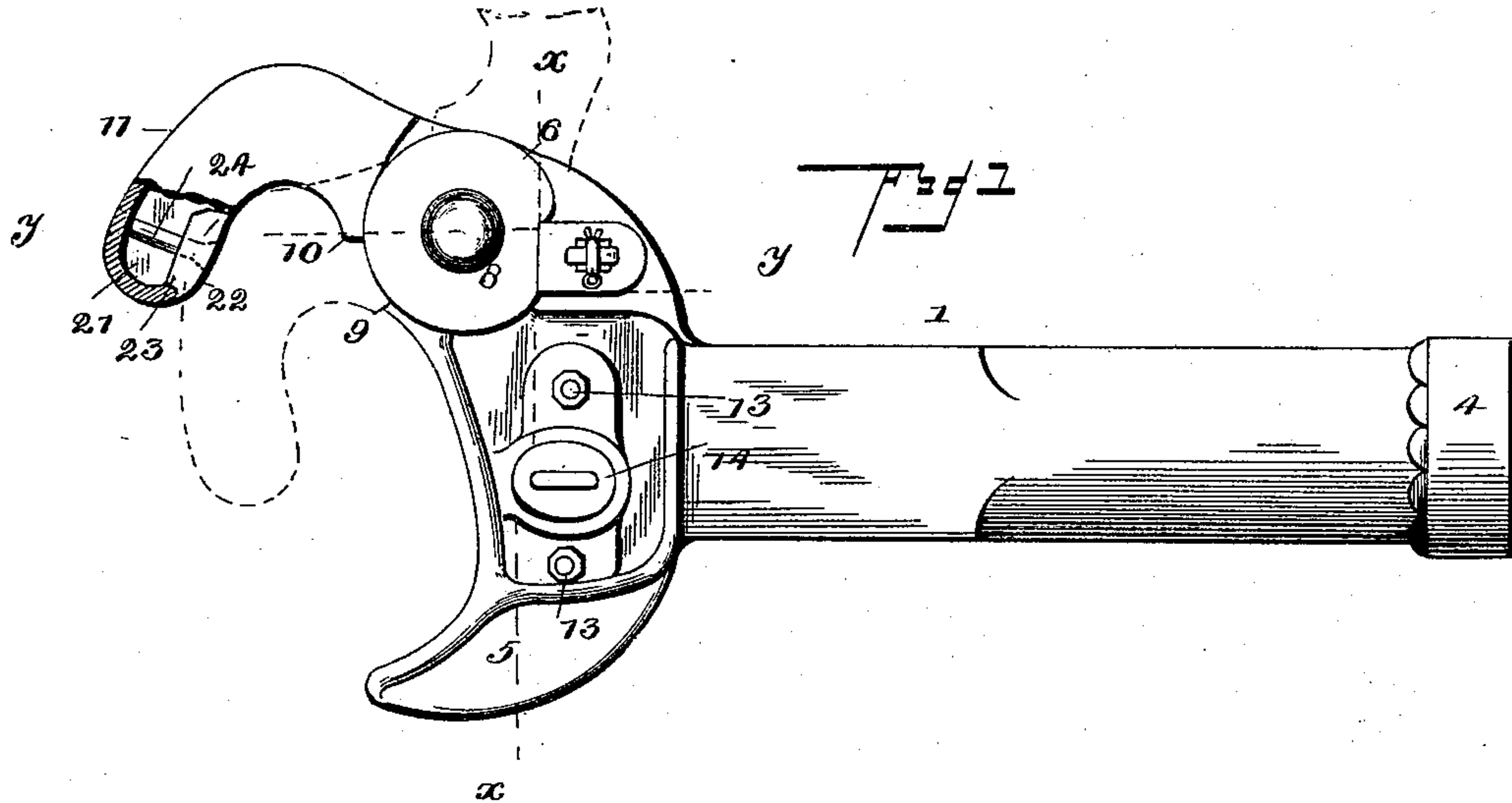
(No Model.)

2 Sheets—Sheet 1.

P. BROWN.  
CAR COUPLING.

No. 461,312.

Patented Oct. 13, 1891.



Witnesses

John Amie  
Milton A. White

Inventor

Perry Brown

By his Attorney

T. J. W. Robertson

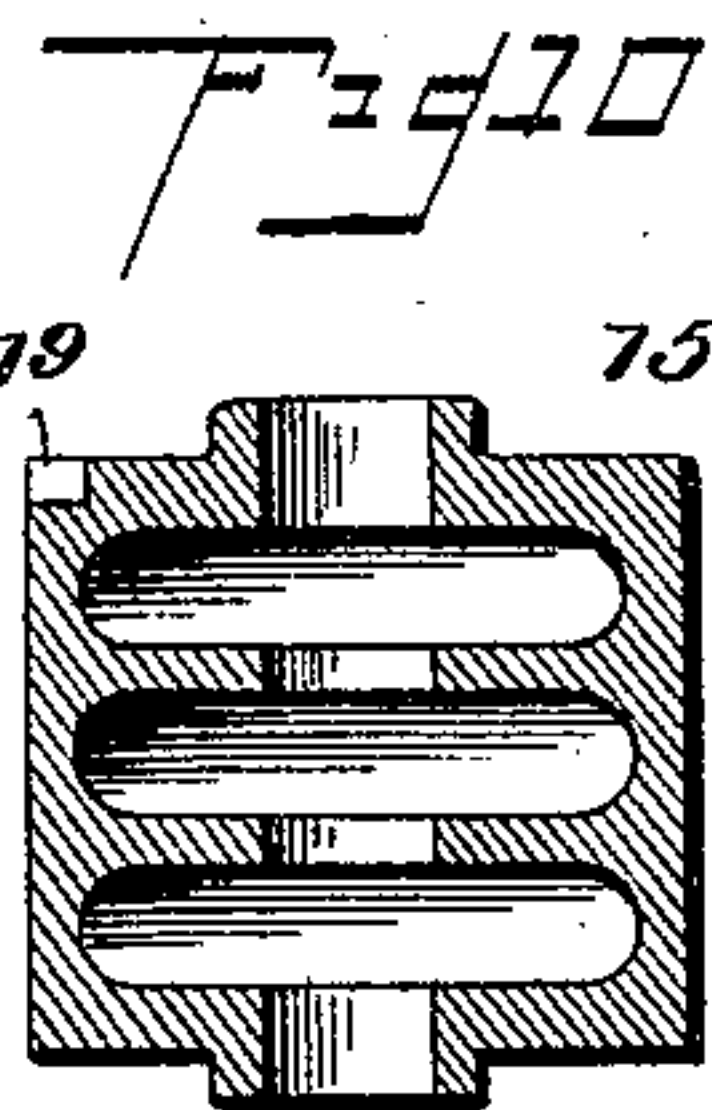
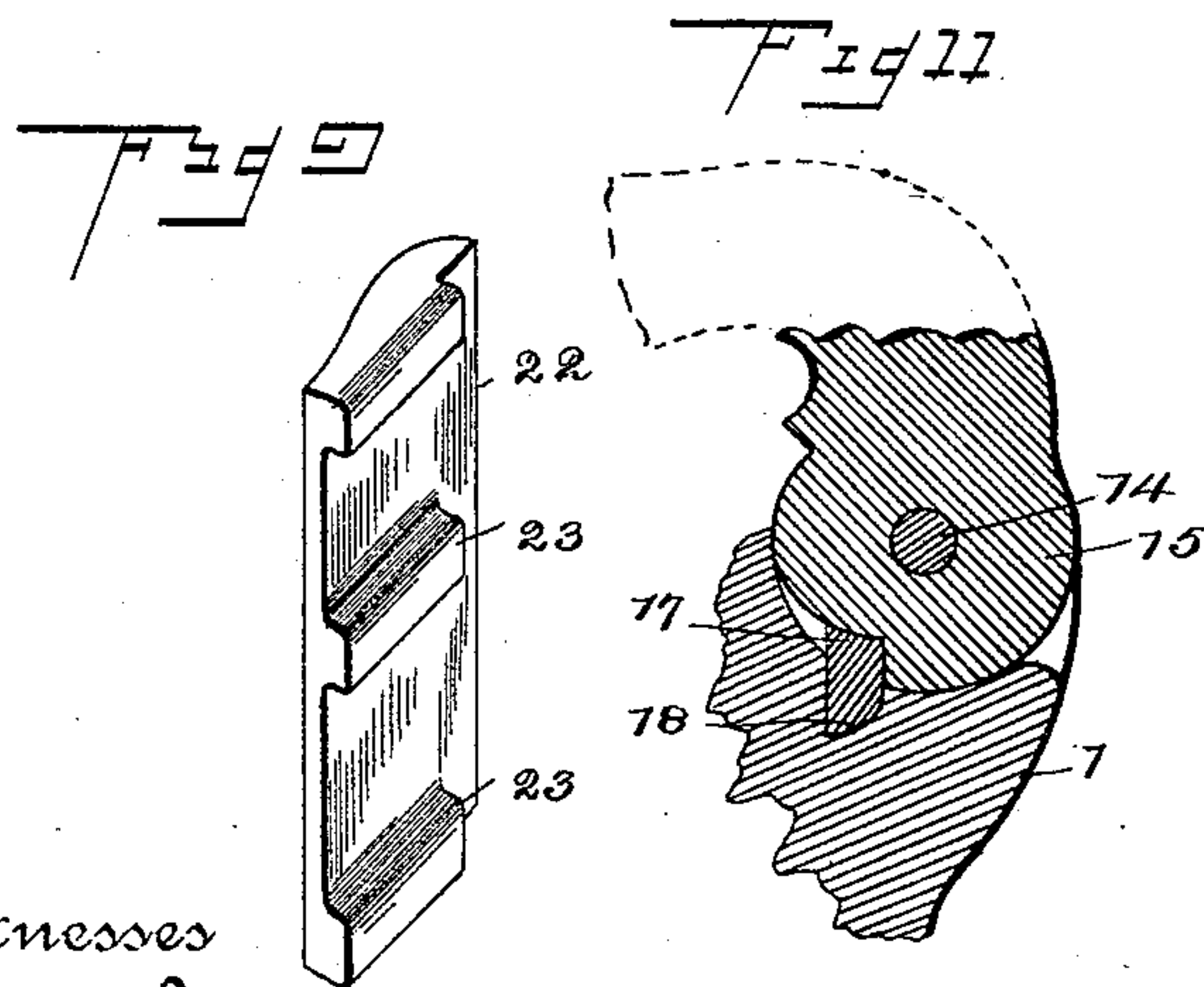
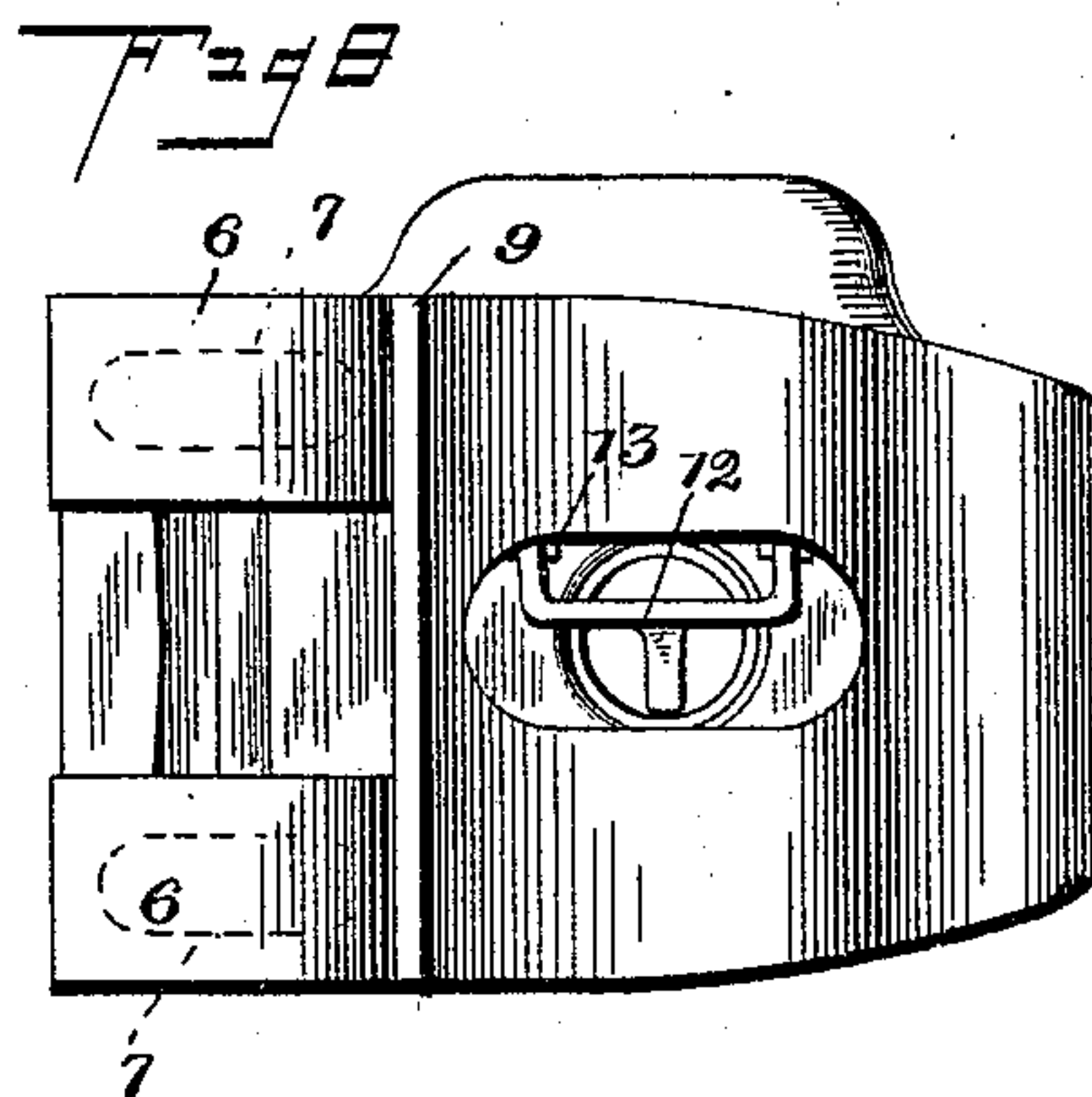
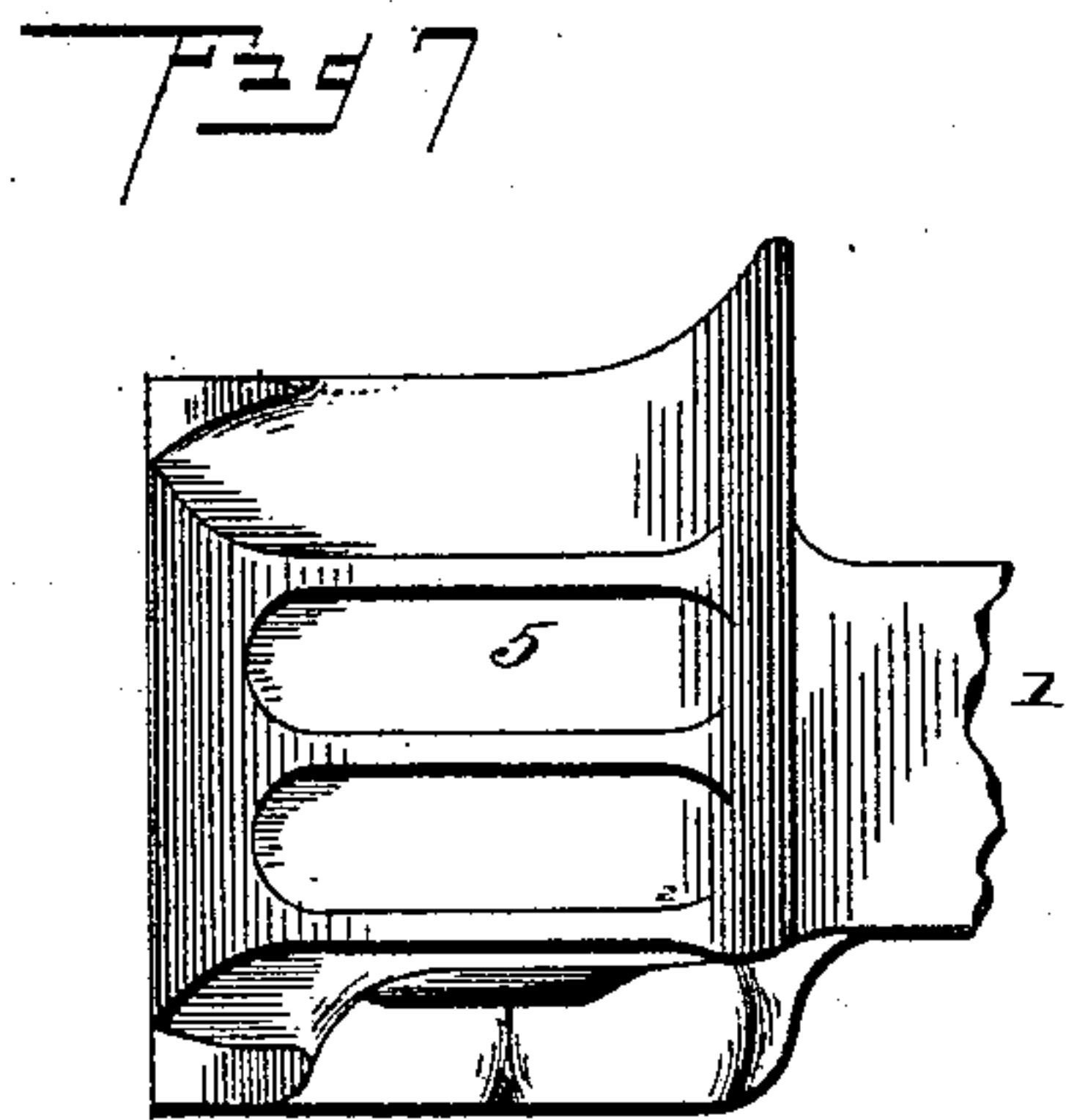
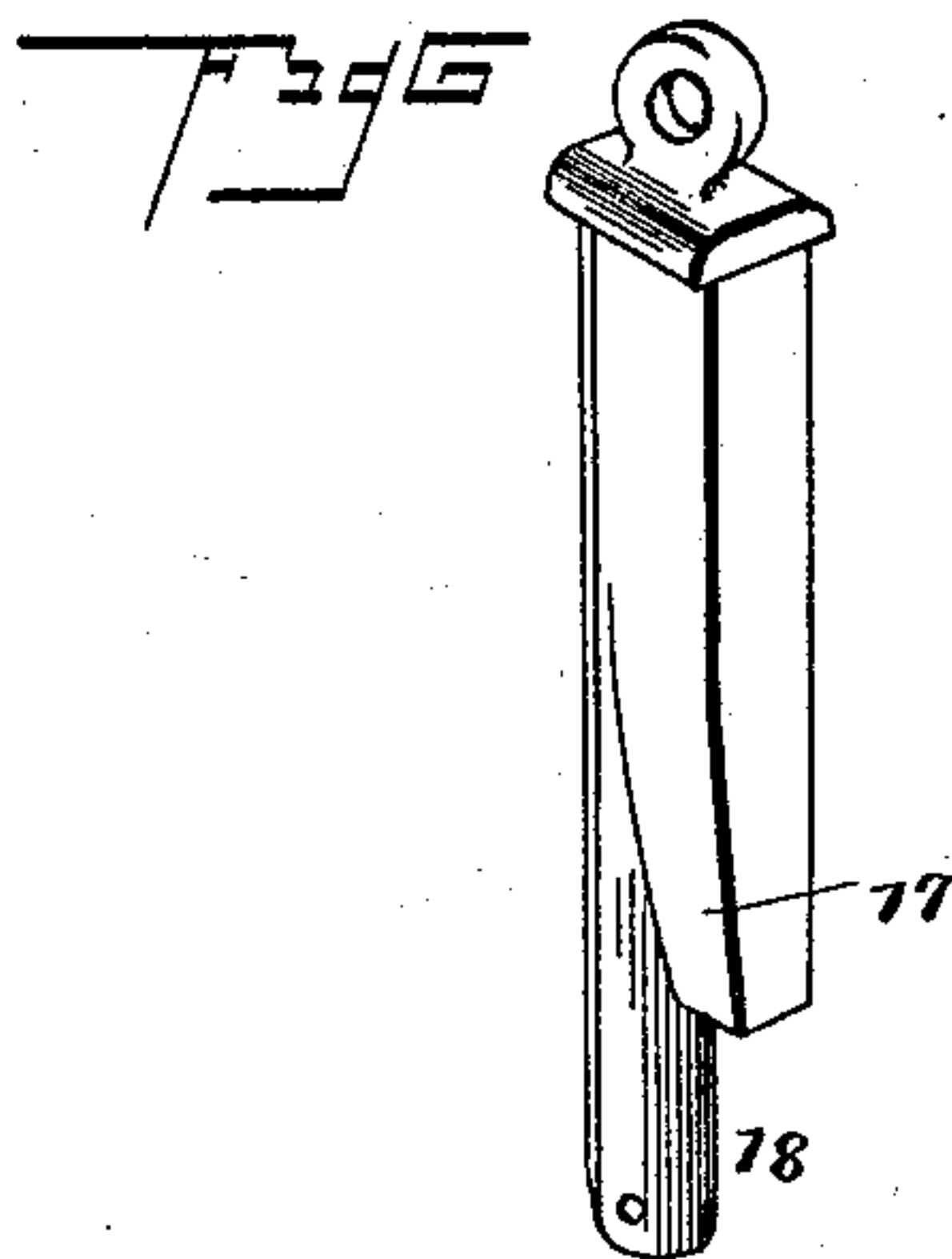
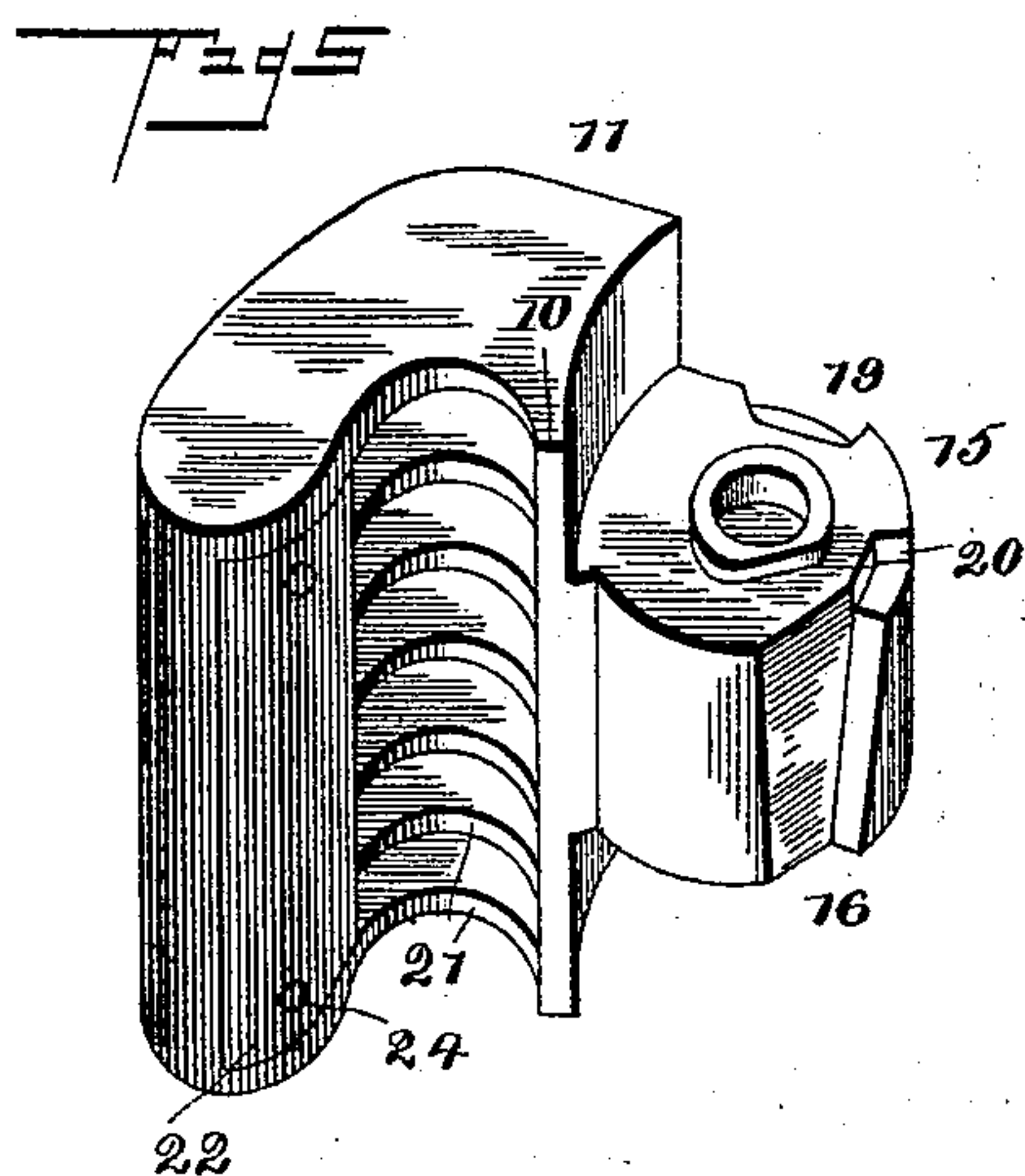
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2 Sheets—Sheet 2.

P. BROWN.  
CAR COUPLING.

No. 461,312.

Patented Oct. 13, 1891.



Witnesses

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# UNITED STATES PATENT OFFICE.

PERRY BROWN, OF SHARONVILLE, OHIO.

## CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 461,312, dated October 13, 1891.

Application filed December 20, 1890. Serial No. 375,295. (No model.)

*To all whom it may concern:*

Be it known that I, PERRY BROWN, a citizen of the United States, residing at Sharonville, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Car-Couplings, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to improvements in that class of couplers known as "twin-jaw couplers," and more particularly to the coupler shown in my patent, No. 434,763, dated August 19, 1890; and the invention consists in the peculiar construction, arrangement, and combinations of parts hereinafter more particularly described and then definitely claimed.

In the accompanying drawings, Figure 1 is a plan of a coupling constructed according to my improvement, with the jaw shown in different positions in dotted lines. Fig. 2 is a central vertical longitudinal section of the same. Fig. 3 is a vertical section through the line  $x$  in Fig. 1. Fig. 4 is a similar section through the line  $y$  in same figure. Fig. 5 is a perspective view of the pivoted jaw detached. Fig. 6 is a similar view of the locking-pin. Fig. 7 is a side view of the front of the draw-bar. Fig. 8 is a front view of the draw-bar with the pivoted jaw removed. Fig. 9 is a perspective view of a hardened plate detached. Fig. 10 is a central vertical section through the knuckle of the pivoted jaw on a larger scale. Fig. 11 is a detail showing a horizontal section through the pivoted jaw and pins.

Referring now to the details of the drawings by figures, 1 represents the body of the draw-bar, having at its rear end a rib 2, behind which is set a cushion 3, of rubber or other suitable material, which is held in place by a cap 4, whose forward edges are bent down over the rib 2 to hold the cap in position and to prevent the same spreading under great pressure. The front of the draw-bar is formed with recesses, leaving ribs 5, which terminate near the front of the fixed jaw of the coupling, leaving that portion solid. The ears 6, instead of being cast solid, as in my previous patent, are cored out, as shown in Fig. 4, leaving ribs 7 to support the pivot-pin 8.

In the mouth of the draw-bar is a swinging

stop 12, hung in forks 13, which are attached to the top of the mouth of the draw-bar in any desired manner, but preferably by means of nuts, as shown in Fig. 3. This swinging stop supports a coupling-pin 14, which may be used with an ordinary coupling-link. The pivoted jaw 11 has no locking-arm, and in that respect is like that shown in my aforesaid patent; but it has a notch 16, whose edge is inclined, as shown in Fig. 5, which, when in its locked position, is in contact with an inclined edge or wedge 17 of the locking-pin 18. As will be seen on referring to Figs. 3 and 4, this pin is supported by the metal of the draw-bar at both ends and also at its center or opposite the knuckle of the pivoted jaw. On the top of the knuckle 15 of the pivoted jaw is formed two notches 19 and 20, whose object will be hereinafter more fully explained. The body of the jaw is cored out, as shown in Fig. 5 and in dotted lines in Fig. 1, forming a series of ribs 21 on the inner side of the jaw. The outer edge of the same is protected by a hardened or chilled plate 22, provided with ribs 23, whose ends rest against the front edge of the body of the jaw and thus take off the strain from the rivets 24, which are used to hold the plate in place. The knuckle 15 is also cored out, forming ribs, as shown in Fig. 10.

The operation is as follows: Supposing two cars supplied with these couplings are to be connected, one of the jaws is set in the position shown in full lines in Fig. 1, with the locking-pin resting in notch 20, and then, when the couplings touch, the fixed jaw of one touches the pivoted jaw of the other and forces it inward to the locked position, so that the two pivoted jaws interlock in a manner well understood. Before the pivoted jaw fully reaches its closed position the pin 18 begins to descend and will thus hold the jaw 11 locked, although neither it nor the pin 18 has yet reached its normal acting position. This will be found very useful in coupling on a sharp curve, which could not be done if the edge of the notch 16 and the edge of the wedge on the pin were both vertical.

If a car with an ordinary pin-and-link coupling is to be coupled to a car having one of my couplers, the pivoted jaw is thrown wide open, as shown in dotted lines in Fig. 1, and



the pin 18 is set in the notch 19, which securely fastens it in that position. The pin 14 is then raised, allowing the stop 12 to swing under it, and the former is then allowed to fall in the latter, as shown in Fig. 8. If now the link of a common coupler is caused to enter the mouth of the draw-bar, it will strike the tongue hanging from the bottom of stop 12 and push it upward, thus allowing the pin 14 to drop through the link and hold the same in a manner well understood.

The object of coring out the ears and pivoted jaw is not, as might be supposed, to simply make them lighter; but I have found that in malleable-iron castings (which I propose to use for my couplings) the strength resides in the skin or outer surface of the same, and that the inner metal is of comparatively little strength. For this reason I so core out my castings as to make a series of ribs, thus providing a large amount of surface, which could not be had if the castings were solid. For the same reason I make the ribs on the fixed jaw. By the use of cap 4 the cushion 3 is permanently fastened in place and is prevented from spreading under great pressure.

It will be seen that the locking-pin is not only supported at both ends, but is also supported along its entire length against the force exerted by the pivoted jaw, as shown at *x* in Fig. 3. This will be found to add much to the durability and strength of the coupling, as great strain is exerted on this pin, especially when used on the first car of a long train. It will also be seen that the mouth of the coupling, into which the link enters in coupling with an ordinary link, is closed not only on the side of the fixed jaw, but on the side of the movable jaw, which tends to keep the entering-link from striking the knuckle as well as serving to strengthen the draw-bar. It also forms a better support for the ears and a means of support for the central part of the locking-pin.

What I claim as new is—

1. The combination, with a draw-bar 1, having a rib 2, of a cushion 3, and a cap 4, surrounding and inclosing the cushion on all sides and provided with flanges turned over said rib, substantially as described.

2. In a pivoted-jaw coupling, a locking-pin therefor inclined or wedge-shaped on its acting edge, and a pivoted jaw having an inclined notch coacting with said inclined or wedge-shaped pin, substantially as described.

3. In a coupling, a draw-bar and a pivoted jaw, in combination with a vertically-moving locking-pin having a projection 17 on one side to engage with the pivoted jaw, and the major part of its body opposite the knuckle of the pivoted jaw surrounded and supported by the metal of the draw-bar, substantially as described.

4. A coupling having a fixed jaw at one side and ears at the other, in combination with a jaw pivoted between said ears, having a rounded knuckle, a recess for locking the same contained within the curved end of said knuckle and opening from the same, and a locking device set in said recess supported above and below the knuckle, substantially as described.

5. A pivoted-jaw draw-bar having a knuckle with a solid outer surface and provided with a series of recesses forming horizontal ribs cast around the hole for the pivotal pin, substantially as and for the purpose specified.

6. A jaw for a draw-bar provided with a series of ribs on its inner face, and a hardened or chilled plate bearing against said ribs to receive the wear, substantially as described.

7. A jaw for a draw-bar provided with a series of ribs on its inner face, and a wearing-plate resting against said ribs and between the top and bottom edge of said jaw, substantially as described.

8. A jaw for a draw-bar provided with a series of ribs on its inner face, and a wearing-plate resting against said ribs and provided with ribs to stiffen the same and abutting against the inner edge of the jaw, substantially as shown.

In testimony whereof I affix my signature, in presence of two witnesses, this 19th day of December, 1890.

PERRY BROWN.

Witnesses:

T. J. W. ROBERTSON,  
MILTON A. WHITE.