

No. 682,289.

Patented Sept. 10, 1901.

G. W. SMILLIE.
CAR COUPLING.

(Application filed July 6, 1900.)

(No Model.)

Fig. 1.

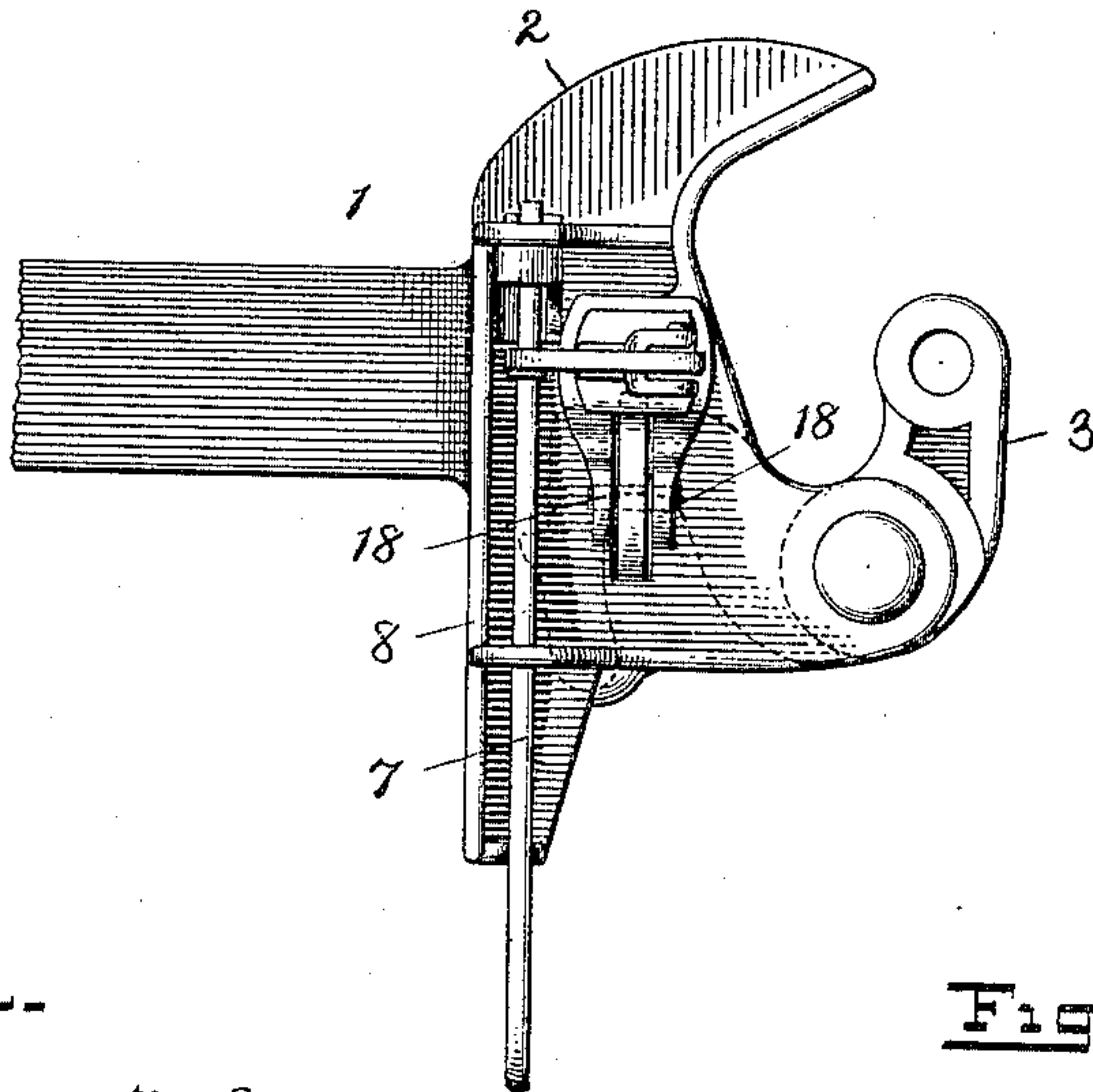


Fig. 2.

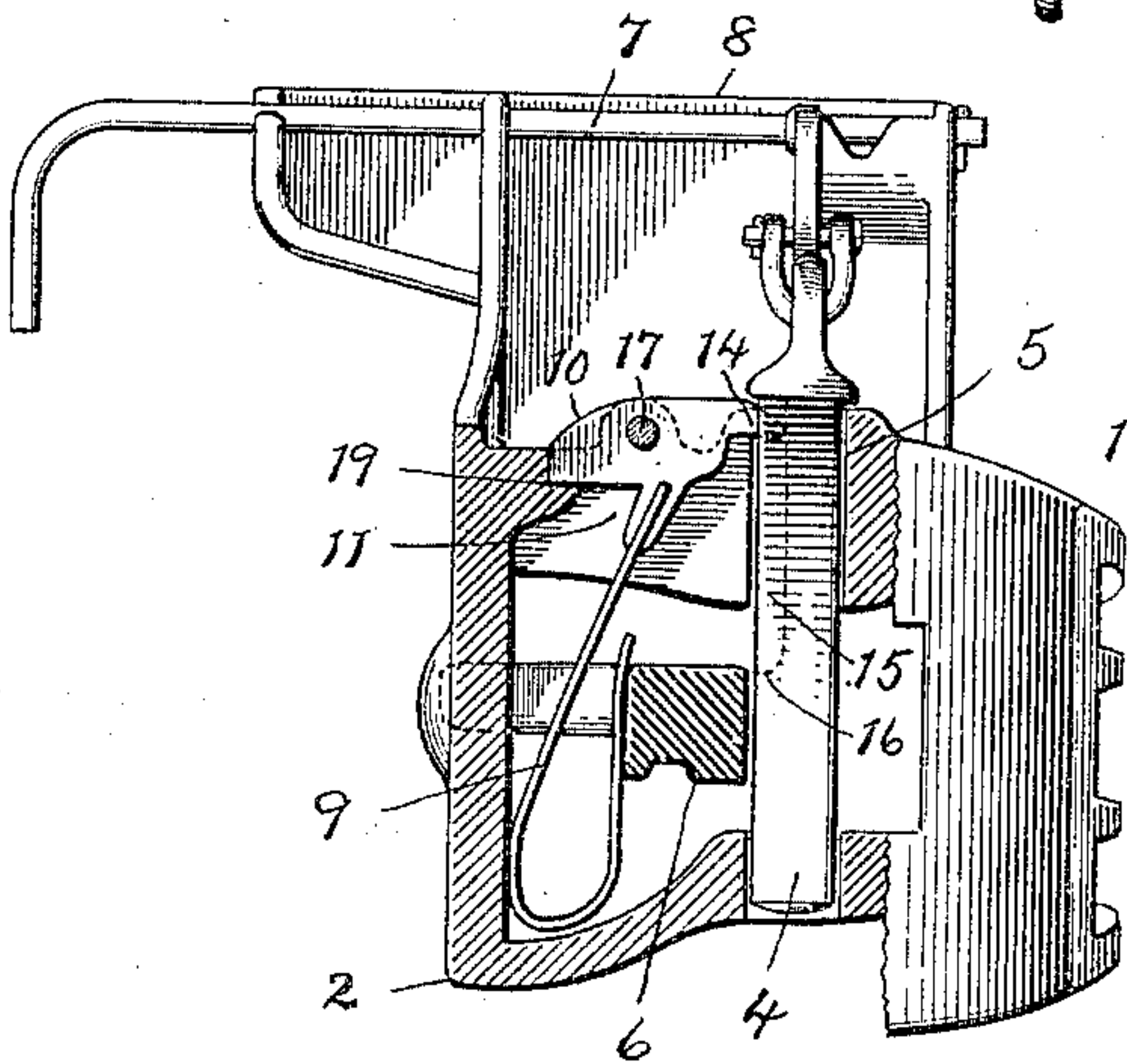
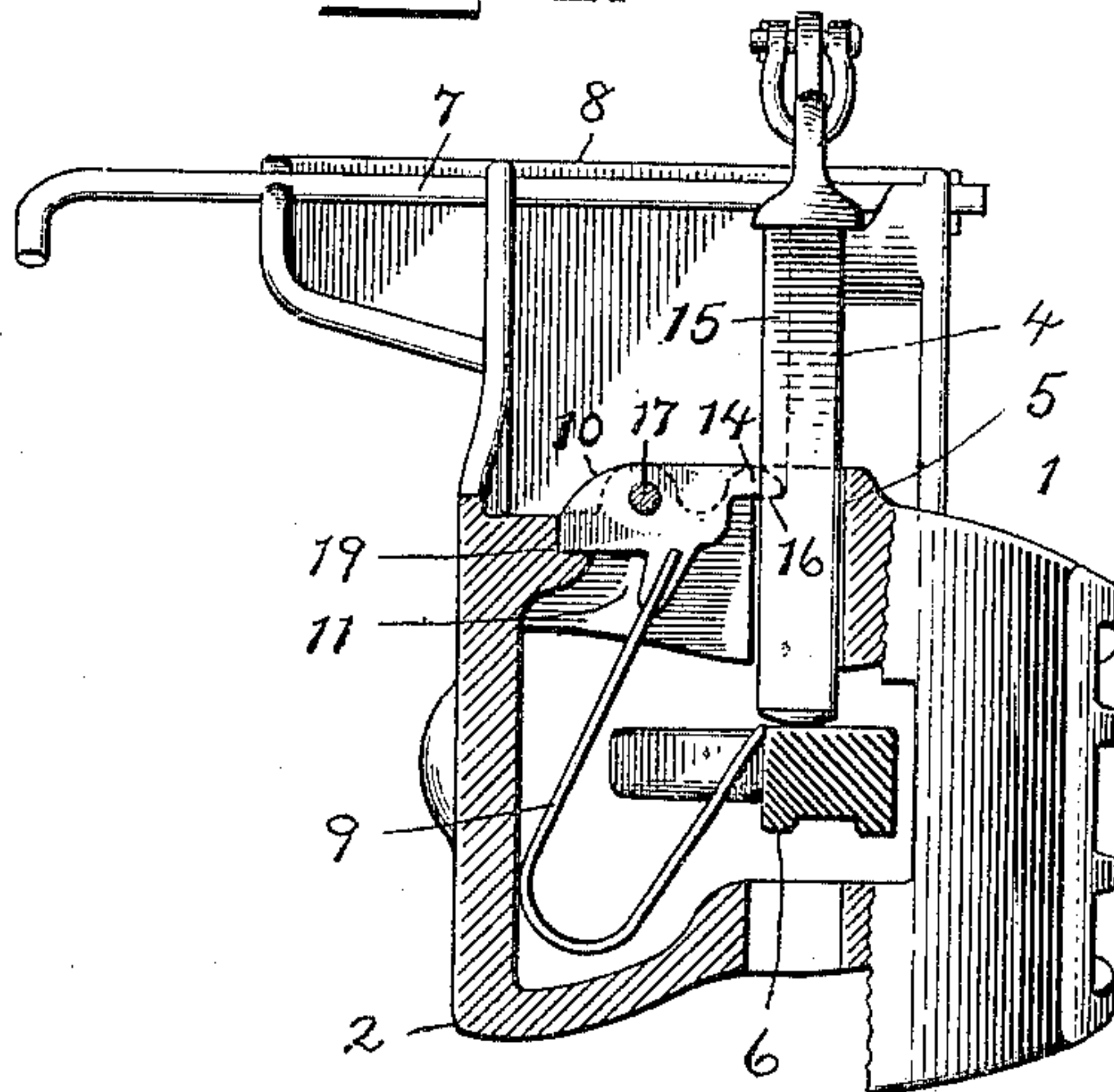


Fig. 3.



Witnesses:

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GEORGE W. SMILLIE, OF NEWARK, NEW JERSEY.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 682,289, dated September 10, 1901.

Application filed July 6, 1900. Serial No. 22,673. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. SMILLIE, a citizen of the United States, and a resident of Newark, Essex county, State of New Jersey, have invented certain new and useful Improvements in Car-Couplers, of which the following is a specification, reference being had to the accompanying drawings, forming part thereof.

This invention relates to car-couplers of the "vertical-plane" type, and particularly to certain improvements in the means for limiting the movement of the coupling-pin when drawn upward to release the knuckle and also in the means for automatically opening the knuckle after being released by such upward movement of the coupling-pin, the invention consisting in the certain novel features of construction and combinations of parts, as hereinafter set forth in detail and pointed out in the claims.

Referring to the accompanying drawings, Figure 1 is a plan view of a coupler embodying my improvements; and Figs. 2 and 3 are front end elevations of the same with the draw-head and knuckle in section, showing the different positions assumed by the parts when the knuckle is closed and opened.

In said drawings, 1 indicates a car-coupler of the vertical-plane type, consisting of the draw-head 2, the swinging hook or knuckle 3, having a hinged connection with said draw-head, and the coupling-pin 4, supported within a vertically-arranged opening 5 in the draw-head for engaging with the inner arm 6 of the knuckle to hold the latter in its closed position. The pin 4 is adapted to be raised from its locking position relative to the knuckle by means of an uncoupling-lever 7, which latter, as herein shown, is supported in bearings in a raised flange 8 of the draw-head, so as to be movable with the latter in the same manner as more fully disclosed in my prior patent, No. 636,575, dated November 7, 1899.

In accordance with my present invention I have provided a spring 9, which is bent so as to normally present a substantially U-shaped form, as shown in Fig. 3, one end of which is connected with a plate 10, supported within a recess 11 in the upper wall of the draw-head, and its opposite or free end bears against the rear side of the inner knuckle-arm 6.

When the knuckle is in its closed position, as shown in Figs. 1 and 2, the free end of the spring is forced backward under tension toward the rear or opposite arm of the same, and when the coupling-pin is raised from its locking position relative to the knuckle the latter is then automatically moved to its open position under the action of the spring, as shown in Fig. 3.

The spring 9, adjacent to its lower or loop end, has a bearing against the rear wall of the draw-head, so that when its free end is forced backward upon the closing of the knuckle the bend or loop in the spring will be caused to change its position with a rolling movement in a direction longitudinally thereof, as will be readily understood upon reference to Figs. 3 and 2, respectively. Such action of the spring, whereby a sharp bend at any one point is avoided and the strain consequent upon its bending is caused to be distributed throughout a considerable portion of its length, renders the spring very durable.

The plate 10, with which the spring 9 is connected, is arranged with one end thereof (indicated at 14) projecting into a longitudinal groove 15 in one side of the coupling-pin 4, so as to engage with the lower end wall thereof and act as a stop to limit the upward movement of the coupling-pin and prevent its withdrawal from the opening 5 in the draw-head. This plate 10, with the connected spring, is detachably secured in connection with the draw-head by means of a pin 17, which extends through an opening in the same and is supported at its ends in two ears or lugs 18 18 on the upper surface of the draw-head. In order to hold the plate 10 in a stationary position and prevent its rocking upon the pin 17, I have formed the draw-head with a seat 19, in which the rear end of the plate is seated, as clearly shown in Figs. 2 and 3.

The combined pin-stop and knuckle-opener, composed of the plate 10 and spring 9, being detachable from the draw-head, as described, enables such parts to be readily repaired or replaced in the event of damage or breakage to the same and also enables a different form of knuckle-opener, such as that disclosed in my prior patent, No. 602,879, to be substituted in lieu of the same.

Having thus set forth a practical embodiment of my invention, it will be understood that the particular details of construction may be modified more or less without departure from the spirit of the invention, for

What I claim as new, and desire to secure by Letters Patent of the United States, is—

1. In a car-coupler, the combination, with the draw-head, the swinging knuckle pivoted to said draw-head, and means for holding said knuckle in its closed position, of a substantially U-shaped spring supported in a vertical position between the inner arm of the knuckle and the adjacent wall of the draw-head with one arm bearing against said knuckle-arm and with its loop portion formed in a relatively large curve located below the latter, for the purpose set forth.

2. In a car-coupler, the combination, with the draw-head, the swinging knuckle pivoted to said draw-head, and a coupling pin or device for holding said knuckle in its closed po-

sition, of a stop device for limiting the movement of the coupling-pin and having a detachable connection with the draw-head, and a knuckle-opener having connection with said stop device, for the purpose set forth.

3. In a car-coupler, the combination, with the draw-head, the swinging knuckle pivoted to said draw-head, and a vertically-movable coupling-pin for holding said knuckle in its closed position, of a plate having detachable connection with the draw-head and arranged with a part thereof extending into a position to engage with the coupling-pin and limit its upward movement, and a knuckle-opening spring bearing against the knuckle-arm and having connection with said detachable plate, for the purpose set forth.

GEO. W. SMILLIE.

Witnesses:

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