No. 744,314. PATENTED NOV. 17, 1903.

R. ECCLES.

THILL COUPLING.

APPLICATION FILED AUG. 3, 1903.

NO MODEL.

Fig. 1.

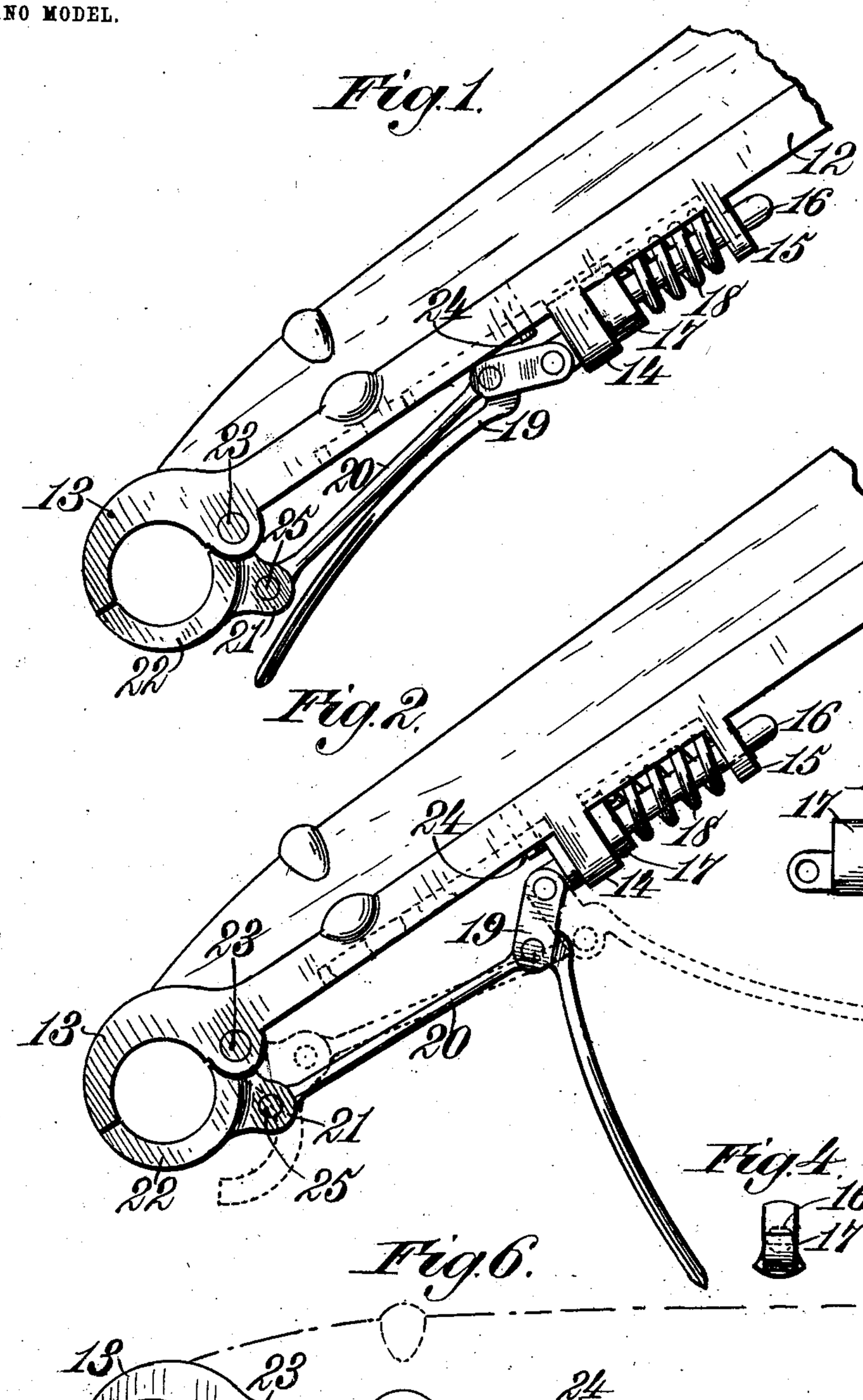


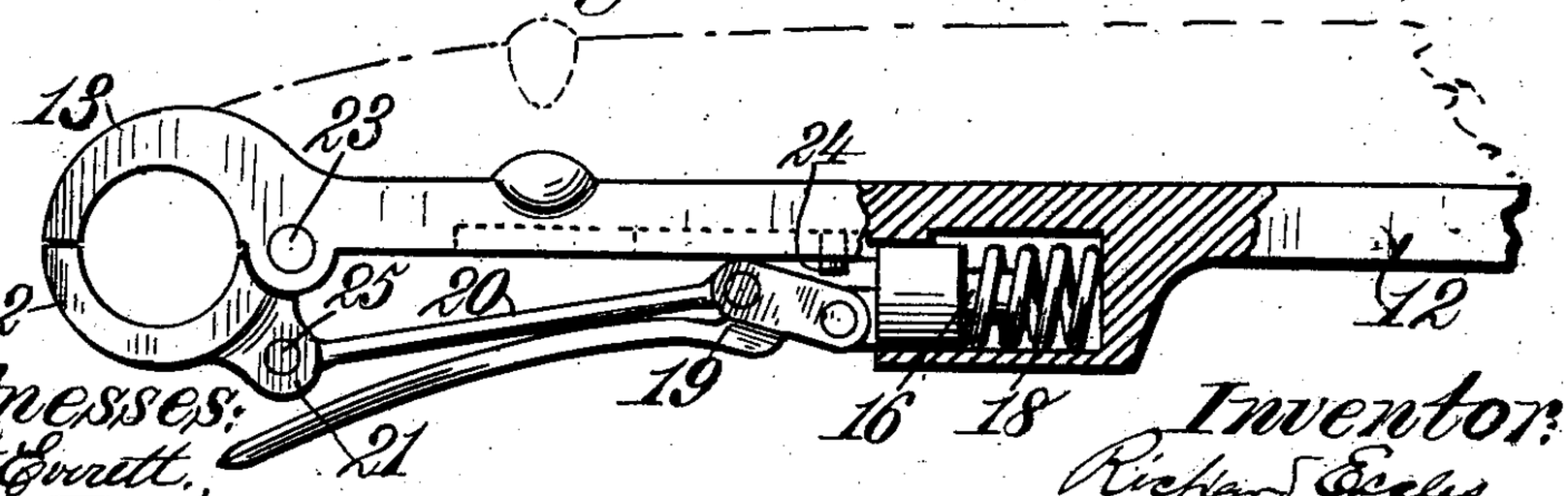
Fig. 2.

Fig. 3.

Fig. 4.

Fig. 5.

Fig. 6.



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No. 744,314. Patented November 17, 1903.

UNITED STATES PATENT OFFICE.

RICHARD ECCLES, OF AUBURN, NEW YORK.

THILL-COUPLING.

SPECIFICATION forming part of Letters Patent No. 744,314, dated November 17, 1903.

Application filed August 3, 1903. Serial No. 167,993. (No model.)

To all whom it may concern:

Be it known that I, RICHARD ECCLES, a citizen of the United States, residing at Auburn, in the county of Cayuga and State of New York, have invented certain new and useful Improvements in Thill-Couplings, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to that class of thill-couplings comprising a fixed and a movable jaw, between which the coupling-pin is held; and it has for its object to provide a thill-coupling of simple construction which can be instantly opened or closed in coupling thills to carriage-axles and which is so constructed that the movable jaw will within certain limitations be self-adjusting to accommodate itself to different-sized bushings surrounding the coupling-pin.

In the accompanying drawings, Figure 1 represents one form of the improved coupling with the parts in closed or holding position. Fig. 2 is a view of the same, but showing in full lines the positions which the parts assume when the toggle-lever has been thrown back just far enough to release the spring-pressure of the movable jaw and showing the movable jaw open in dotted lines, with the other movable parts in corresponding positions. Fig. 3 is a detail view of the bolt or piston on which the toggle-lever is fulcrumed; and Figs. 4 and 5 are front and rear end views, respectively, of the said bolt or piston. Fig. 6 is a view similar to Fig. 1, but showing a slightly-modified form of the invention.

Referring to the drawings, 12 denotes the thill-iron, having integral therewith the fixed jaw 13, and said thill-iron being provided with lugs 14 and 15, which are preferably forged integral therewith. Mounted for a limited sliding movement in the lugs 14 and 15 is a bolt or piston 16, having a head or enlarged portion 17, between which and the lug 15 is placed a spiral spring 18. Fulcrumed to the forward end of the spring-acted bolt or piston 16 is the opening and closing or toggle lever 19, which is connected by a link or pitman 20 with a lug 21 on a movable jaw 22, pivoted on a pin 23 to the thill-iron. The head or enlarged portion 17 of the bolt or piston 16 slides in the lug 14, and the forward movement of the said bolt or piston 16 under the influence of the spring 18 when the movable jaw is to be fully opened is limited by a stop-pin 24.

To provide for the removal of the bolt or piston 16 and its operating-spring 18 when desired, the head 17 of the said bolt or piston is cut away at its sides, as shown more clearly in Figs. 4 and 5, so that by taking out the pin 25, connecting the forward end of the link or pitman to the movable jaw, and then partly rotating the said bolt or piston by turning the lever 19 to one side the head of the said bolt or piston can pass the said stop-pin, and thus enable the bolt or piston, its actuating-spring, the lever, and the link to be moved from the thill-iron, which it is desirable to do when the thill-iron is being welded.

It will be observed that the lever 19 and link 20 form, collectively, a toggle, so that when the parts are in closed position with the toggle parts thrown inward past the dead-center, as shown in Fig. 1, the pressure of the spring 18 on the bolt or piston 16 will tend to hold the movable jaw in closed position in such a manner that said jaw can within certain limits or before it is fully closed, as shown in Fig. 1, accommodate itself to different-sized bushings surrounding the coupling-pin entered between the fixed or movable jaws. This is due to the fact that the lever 19 is fulcrumed to or pivotally mounted on a spring-pressed part, so that its fulcrum is movable lengthwise of the thill-iron and so that the resilience of the spring is utilized to hold the movable jaw yieldingly closed.

Instead of mounting the bolt or piston and its actuating-spring between the lugs 14 15 on the thill-iron the thill-iron may be provided with a hollow lug or cylinder, as shown in Fig. 6, in which the bolt or piston 16 and its spring 18 may be housed.

While I have shown a particular construction and that the best known to me, it will be understood that the same may be varied within the range of mechanical skill without departing from the spirit of my invention, and I do not, therefore, wish to be understood as limiting my invention to any of the details herein shown and described except in so far as I am limited by the terms of the appended claims.

Having thus described my invention, I claim and desire to secure by Letters Patent—

1. In a thill-coupling, the combination with a thill-iron provided with a fixed and a movable jaw, of a toggle device for opening or closing the said movable jaw and comprising a lever, and a yieldingly-mounted device or part, movable lengthwise of said thill-iron, on which said lever has its fulcrum.

2. In a thill-coupling, the combination with a thill-iron provided with a fixed and a movable jaw, of a toggle-lever for opening or closing the said movable jaw, a spring-pressed or spring-acted part to which the said lever is pivoted so that the fulcrum of said lever is movable, and a link or pitman connecting the said lever with the said movable jaw.

3. In a thill-coupling, the combination with a thill-iron provided with a fixed jaw, of a movable jaw pivotally mounted on said thill-iron, a sliding bolt or plunger, a spring for pressing said bolt or plunger forward, a toggle-lever mounted on said bolt or plunger so that its fulcrum is movable, and a link or pitman connecting said lever with said movable jaw.

4. In a thill-coupling, the combination with a thill-iron provided with a fixed jaw, of a movable jaw pivotally mounted on said thill-iron, a sliding bolt or plunger, a spring for pressing said bolt or plunger forward, a stop for limiting the forward movement of said bolt or plunger under the influence of said spring, a toggle-lever mounted on said bolt or plunger so that its fulcrum is movable, and a link or pitman connecting said lever with said movable jaw.

5. In a thill-coupling, the combination with a thill-iron provided with a fixed and a movable jaw and with lugs or projections, of a sliding bolt or plunger mounted, for endwise movement, in said lugs or projections, a spring for pressing said bolt or plunger forward, a toggle-lever fulcrumed to said bolt or plunger and a link connecting said toggle-lever with said movable jaw.

6. In a thill-coupling, the combination with a thill-iron provided with a fixed and a movable jaw and with lugs or projections, of a sliding bolt or plunger mounted, for endwise movement, in said lugs or projections, a spring for pressing said bolt or plunger forward, a stop for limiting the forward movement of said bolt or plunger under the action of said spring, a toggle-lever fulcrumed to said bolt or plunger and a link connecting said toggle-lever with said movable jaw.

7. In a thill-coupling, the combination with a thill-iron provided with a fixed and a movable jaw and with lugs or projections, of a sliding bolt or plunger mounted, for endwise movement, in said lugs or projections, a spring for pressing said bolt or plunger forward, a stop for limiting the forward movement of said bolt or plunger under the action of said spring, a toggle-lever fulcrumed to said bolt or plunger, and a link connecting said toggle-lever with said movable jaw, said bolt having a head with a cut-away portion to permit of its removal, past said stop, when desired.

In testimony whereof I affix my signature in presence of two witnesses.

RICHARD ECCLES.

Witnesses:

ANDREW H. JOHNSON,

SQUIRE P. CODNER.