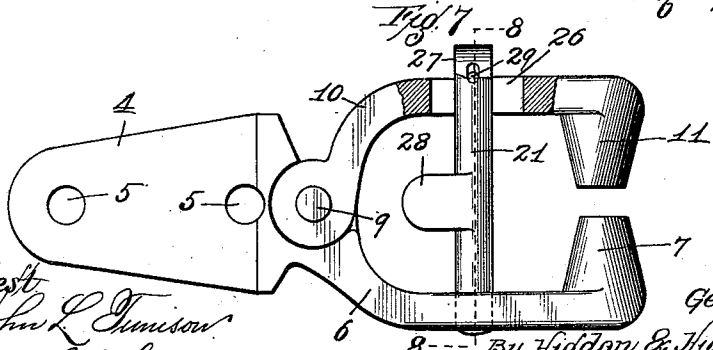
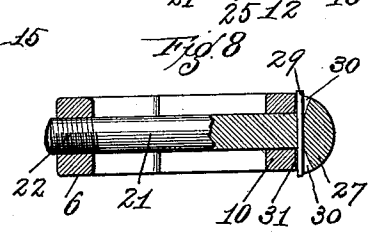
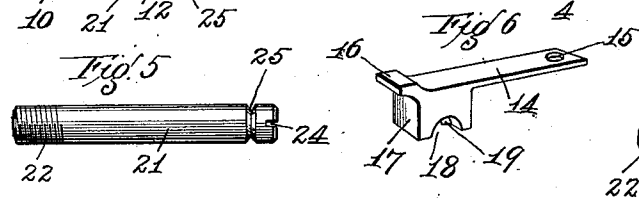
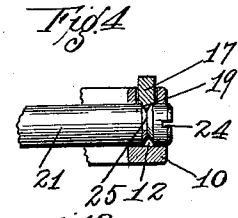
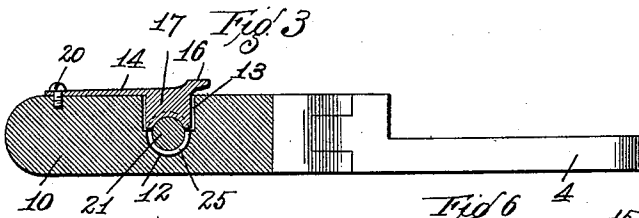
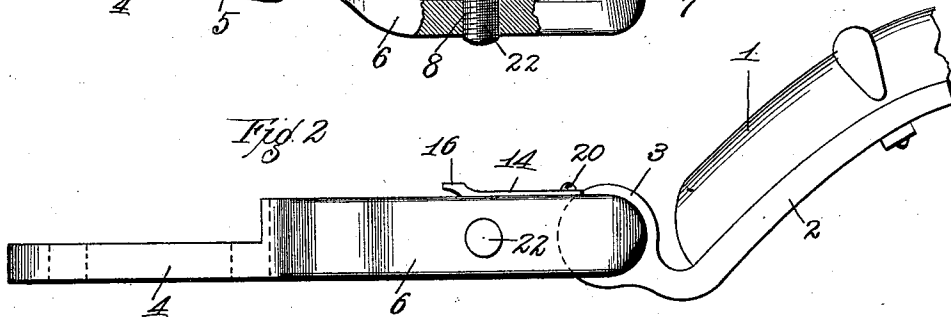
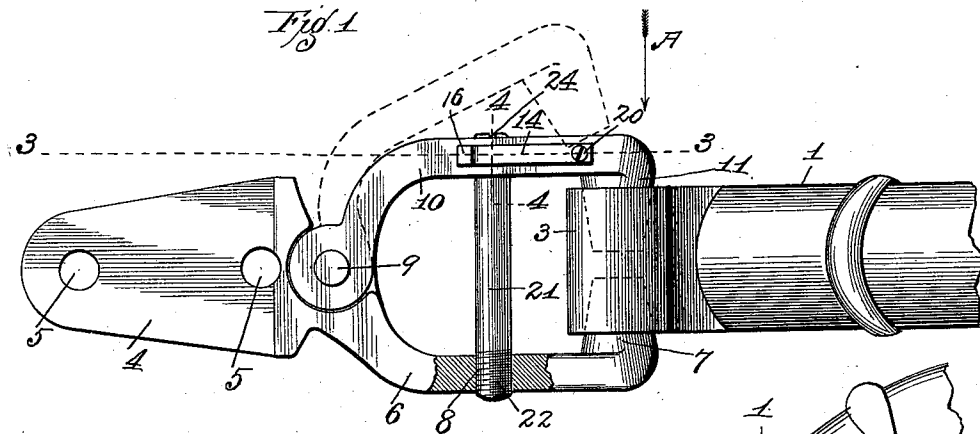


(No Model.)

G. A. FOWLER.
THILL COUPLING.

No. 564,011.

Patented July 14, 1896.



Attest
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Atty's.

UNITED STATES PATENT OFFICE.

GEORGE A. FOWLER, OF WICHITA, KANSAS, ASSIGNOR OF ONE-HALF TO
C. V. JEWELL, OF SAME PLACE.

THILL-COUPLING.

SPECIFICATION forming part of Letters Patent No. 564,011, dated July 14, 1896.

Application filed July 29, 1895. Serial No. 557,452. (No model.)

To all whom it may concern:

Be it known that I, GEORGE A. FOWLER, of the city of Wichita, Sedgwick county, State of Kansas, have invented certain new and useful Improvements in Thill-Couplings, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention relates to an improved thill-coupling, and is an improvement on a thill-coupling, a patent for which was granted to me February 12, 1895, No. 533,986; and it consists in the novel construction, combination, and arrangement of parts hereinafter described and claimed.

In the drawings, Figure 1 is a top plan view of my improved thill-coupling. Fig. 2 is a side elevation thereof. Fig. 3 is a cross-sectional view taken approximately on the indicated line 3 3 of Fig. 1 and looking in the direction as indicated by the arrow A, Fig. 1. Fig. 4 is a detail cross-sectional view taken approximately on the indicated line 4 4 of Fig. 1. Fig. 5 is a side elevation of a bolt made use of in carrying out my invention. Fig. 6 is a view in perspective of a spring-latching device used in my improved thill-coupling. Fig. 7 is a top plan view of a modification of my improved thill-coupling. Fig. 8 is a cross-sectional view taken approximately on the indicated line 8 8 of Fig. 7.

Referring by numerals to the accompanying drawings, 1 indicates the rear end of the shaft, the same having fixed to its underside in the ordinary manner a metallic strap 2, with the protruding end of which is formed integral a loop 3.

4 indicates a plate in which are formed a pair of apertures 5, said plate being fixed to the axle by means of a clip or bolt passing through said apertures 5. Formed integral with the forward end of this plate 4 and extending forwardly and to one side thereof is an arm 6, with the outer end of which is formed integral a laterally-projecting lug or head 7, the same being in the form of a truncated cone. In said forwardly-projecting arm 6 is formed a transversely-arranged screw-threaded aperture 8.

Fixed upon a hinge-pin 9 and arranged at the front end of the plate 4 is the rear end of a

forwardly-extending arm 10, identical in form and size with the arm 6, and formed integral with the outer end of said arm 10 is a lug or head 11, that is identical in form and size with and occupies the same plane as the lug 7. Passing transversely through this arm 10 in alinement with the screw-threaded aperture 8 is an aperture 12. Passing upwardly from the aperture 12 to the top of the arm 10 is a longitudinally-extending slot 13.

The spring-latch of which I make use comprises a resilient metallic plate 14, in the rear end of which is formed an aperture 15. Formed integral with the forward end of said plate 14 is a projection 16, that performs the function of a thumb or finger-hold.

Formed integral with and depending from the forward end of the plate 14 is a head 17, in the lower face of which is formed a transversely-extending semicircular recess 18, around the face of which extends a V-shaped rib or projection 19.

A rivet or screw 20 passes through the aperture 15 and into the forward end of the arm 10 and very rigidly locates the plate 14 upon the top face of said arm 10 in such a manner as that the head 17 will normally rest in the slot or recess 13 formed in said arm 10.

21 indicates a bolt having a screw-threaded end 22. The opposite end of this bolt 21 is provided with a slot 24 for the reception of the end of a screw-driver or like tool. Adjacent this end of the bolt 21 and in the surface thereof is formed an annular V-shaped groove 25. This bolt 21 passes through the aperture 12, and the screw-threaded end 22 of said bolt is located in the screw-threaded aperture 8 in the arm 6. When said bolt is thus positioned, the V-shaped projection 19 engages in the V-shaped groove 25.

In the modified form of the coupling shown in Figs. 7 and 8 a longitudinally-extending slot 26 is formed in place of the aperture 12, and a head 27 of such size as that it will readily pass through said slot 26 is formed integral with one end of the bolt 21. The opposite end of said bolt 21 is screw-threaded, as in the previously-described form, and a finger or thumb hold 28 is formed integral with the center of said bolt 21.

Passing through the end of the bolt 21, ad-

jacent the head 27 thereof, is a resilient pin 29. The ends 30 of the aperture through which this pin passes are widened. Semicircular grooves 31 are formed in the side of the arm 10 adjacent the slot 26, and are of such size as to receive the pin 29.

The operation of the preferred form of device is as follows: When it is desired to attach the shafts onto the axle on which my improved couplings are located, the operator engages the projections 16 on each of the plates 14 and draws upwardly on the same until the V-shaped ribs 19 are disengaged from the annular grooves 25. This operation being completed, the arms 10, carrying the bolts 21, are free to be moved to the position shown by dotted lines in Fig. 1. The loops 3 on the ends of the straps 2 are now located upon the lugs or heads 7, formed integral with the stationary arms 6. The arms 10 are now swung to their normal positions, or until the lugs or heads 11, carried by their outer ends, engage in the opposite ends of the apertures through the loops 3 from the ends in which the heads or lugs 7 are located. As the ends of the bolts 21 enter the apertures 12 in said arms 10, the V-shaped ribs 19 on the under sides of the heads 17 will ride over said ends of the bolts 21 and engage in the annular V-shaped grooves 25. This very firmly locks the arms 6 and 10 together and very efficiently couples the shafts to the axle.

To tighten or loosen the heads or lugs 7 and 11 in the loop 3, the end of a screw-driver is located in the slot 24 in the end of the bolt 21, and said bolt 21 is rotated a sufficient number of turns in either direction to cause the proper tension between the heads or lugs 7 and 11 in the loop 3.

When the modified form of my improved device is in a locked position, the bolt 21 is so manipulated as that its head 27 extends transversely across the slot 26 and the ends of the pin 29 lie in the grooves 31. To unlock said device, the operator, by means of the thumb or finger hold 28, located on said bolt, rotates said bolt one-quarter of a turn or until the head 27 lies in the same plane with the slot 26. By so doing, the ends of the pin 29 are disengaged from the recesses or grooves 31 and the hinged arm 10 is now free to be opened. In this form of the device the heads or lugs 7 and 11 are tightened or loosened in the loop 3 by giving the bolt 21 a half of a revolution in either direction.

A thill-coupling of my improved construction possesses superior advantages in point of simplicity, durability, and general efficiency, will not rattle when in use, allows the

shafts to be very expeditiously removed or placed in position upon the axle, is composed of a minimum number of parts, and therefore will not easily get out of order.

I claim—

1. An improved thill-coupling, comprising a plate arranged to be fixed to the axle, an arm formed integral with and extending forwardly therefrom, a lug formed integral with and projecting laterally from the forward end of said arm, said arm being constructed with a transversely-extending screw-threaded aperture, an arm identical in form and size with said first-mentioned arm hinged to the forward end of the plate, a lug formed integral with and extending transversely from the forward end of said hinged arm, said hinged arm being provided with a transverse aperture in alinement with the previously-mentioned screw-threaded aperture, said hinged arm being constructed with a slot extending upwardly from the aperture, a resilient plate fixed to the top of said arm, a block carried by said resilient plate that normally rests in the slot above the aperture, said block being provided with a semicircular groove on its under side, a V-shaped rib formed integral with the face of this semicircular groove, and a bolt to be located in the screw-threaded apertures having one end screw-threaded and the opposite end provided with a slot and an annular V-shaped groove.

2. In a thill-coupling having a stationary arm and a hinged arm, the combination of the bolt 21 passing through an aperture in the hinged arm, one end of said bolt being located in the stationary arm, the opposite end of said bolt being provided with a V-shaped groove 25, and a spring-catch 14 arranged on the hinged arm, said catch being provided at its forward end with an integral head that projects through an aperture in the hinged arm, and said head being provided with a V-shaped rib 19 that engages in the V-shaped annular groove in the end of the bolt.

3. In a thill-coupling, a resilient catch, comprising a plate 14, a head 17 formed integral with the forward end thereof, a finger-hold formed integral with said head, said head being constructed with a semicircular recess extending transversely along its under side, and a V-shaped rib 19 formed integral with said head within said semicircular recess.

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

GEORGE A. FOWLER.

Witnesses:

EDWARD EVERETT LONGAN,
MAUD GRIFFIN.