

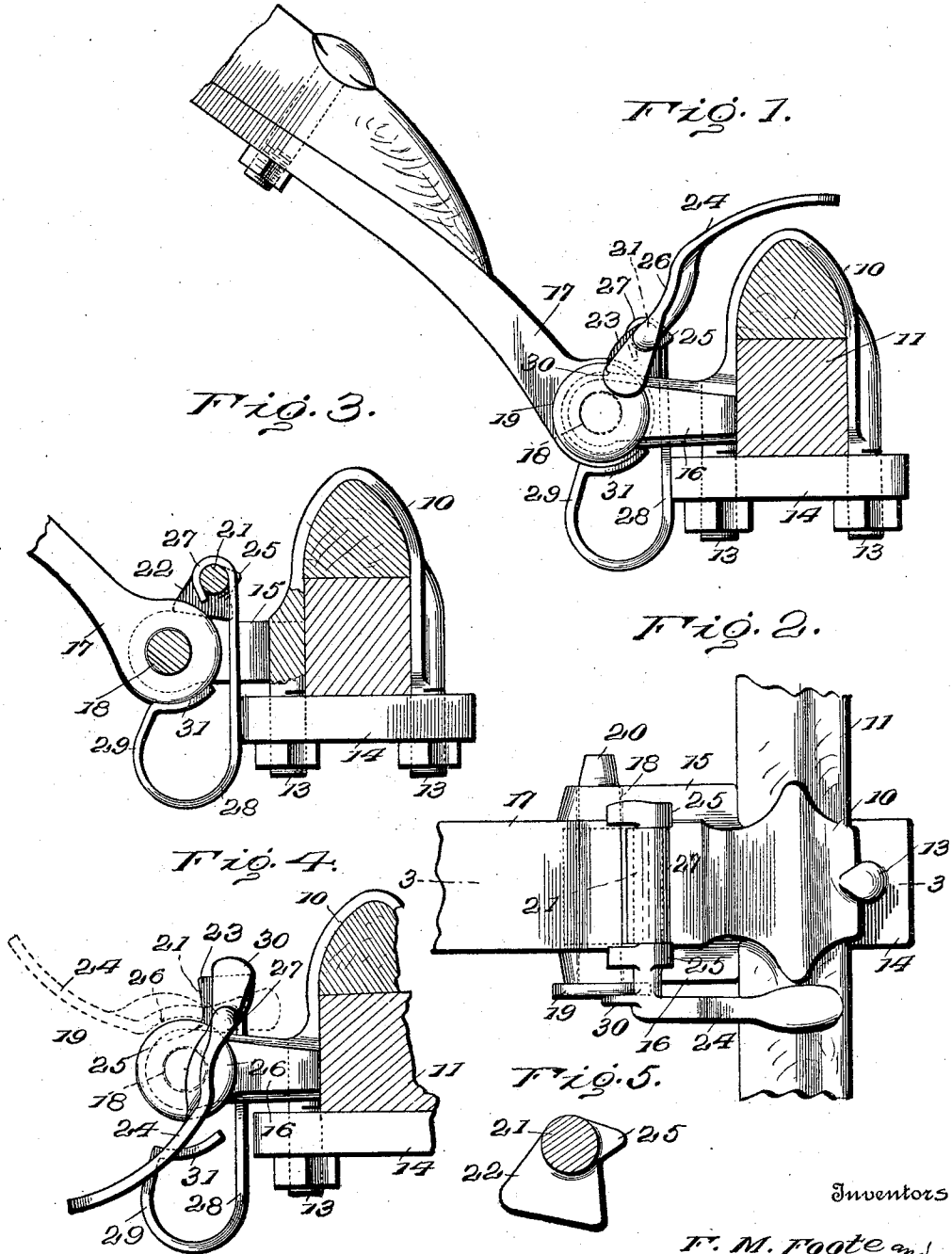
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THILL COUPLING.

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1,031,673.

Patented July 2, 1912.



Witnesses  
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# UNITED STATES PATENT OFFICE.

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## THILL-COUPLING.

1,031,673.

Specification of Letters Patent.

Patented July 2, 1912.

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*To all whom it may concern:*

Be it known that we, FRANK M. FOOTE and CHARLES H. SCHABINGER, citizens of the United States, residing at Marshall, in the county of Calhoun and State of Michigan, have invented certain new and useful Improvements in Thill-Couplings, of which the following is a specification.

This invention relates to improvements in attachments for thill couplings to prevent rattling between the parts and to prevent the shackle pin and the anti-rattler attachments from displacement when the shaft or thills are removed, and has for one of its objects to simplify and improve the construction and increase the efficiency and utility of devices of this character.

Another object of the invention is to produce a simply constructed device which may be applied without material structural changes to thill couplings of various forms and sizes and which may be readily attached to and disconnected from the thill coupling without the necessity of employing additional tools or implements.

Another object of the invention is the production of a device of this character which will hold the shackle pin locked in the clip regardless of the position of the anti-rattler device, and which will require the operating lever of the anti-rattler device to be disposed in an unusual position to release the shackle pin.

Another object of the invention is the production of a device in which the holding and operating devices will automatically assume a position to lock the shackle pin in place in event of the locking means being accidentally tripped, thus materially increasing the safety of the device.

With these and other objects in view the invention consists in certain novel features of construction as hereinafter shown and described and then specifically pointed out in the claim, and in the drawings illustrative of the preferred embodiment of the invention, Figure 1 is a side elevation of a conventional thill coupling with the improvement applied, with the axle in transverse section. Fig. 2 is a plan view of the parts shown in Fig. 1. Fig. 3 is a section on the line 3—3 of Fig. 2. Fig. 4 is a detail view illustrating the arrangement of the parts when the locking lever and cams are in re-

leased position. Fig. 5 is an enlarged sectional detail of the combined cam and stop.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

The improved device may be applied without structural changes to thill couplings of various forms and sizes, and for the purpose of illustration is shown applied to a conventional thill coupling of the ordinary construction, in which 10 represents the body of the clip which bears over the axle, 11, which is provided with bolts 13 which engage through the coupling plate 14 and is provided with spaced arms 15—16 between which the "thill iron" or shackle 17 engages and is held in place by the pin 18. The parts above noted are of the usual construction except that the pin 18 is provided with an enlarged head 19 at one end and tapered slightly at the other end, as shown at 20, to facilitate the entering of the pin.

The improved attachment comprises a bar 21 having cam devices 22—23 spaced apart thereon and with an operating handle or lever 24 at one end, the lever extending from the bar at the side opposite to the cam lugs. Extending from the bar 21 at the same side as the lever are stop lugs 25, the object to be hereafter explained. The lever 24 is located at the end of the bar 21 nearest to the enlarged head 19 of the pin 18 and is provided with a slight depression or reversed curve at 26 to enable the lever to readily clear the enlarged head 19 of the pin 18, when required, as hereafter explained. The bar 21 is designed to extend over the arms 15—16 next to the body 10 of the clip with the cam lugs 22—23 bearing upon the upper faces of the arms when the lever is in its locked or rearward position, and extending over the axle 21, and is provided with a lip 30 at the side opposite to the lever and substantially in longitudinal alinement therewith. Between the cam devices 22—23 is a hooked upper portion 27 of a resilient plate 28, the latter extending downwardly between the arms 15—16 and likewise between the head portion of the shackle 17 and the clip plate 14. The plate 28 is extended a considerable distance below the arms 15—16 and is bent forwardly and thence upwardly, as shown at 29, and with

its terminal curved, as shown at 31, to correspond with and bear against the under face of the head of the shackle.

The plate 28 with its hooked terminal 27 and curved terminal 29 is so proportioned that when the lever arm 24 is moved into its rearward position and extending over the axle 11 and the cam lugs 22—23 turned into their downward position in contact with the arms 15—16, the lip 30 will extend over the head 19 of the pin 18 and retain the latter in position, and at the same time the cam lugs will impart the requisite strain to the member 28—29 and hold it firmly in engagement with the shackle head. By this means the shackle head is held firmly and the lever 24 located in a position from which it will not be liable to be dislodged by any object with which the parts may come in contact.

When it is desired to release the shackle bolt to enable the thills or tongue to be removed, the lever arm is thrown over into its forward position, as shown in dotted lines in Fig. 4 with the depression or reverse curve 26 so located as to clear the head 19 and permit the pin to be detached. After the shackle has been removed the pin 18 is restored to position through the arms 15—16 and the lever 24 moved into its downward position as shown in full lines in Fig. 4 and extending across the head 19 and thus effectually preventing the accidental displacement of the pin. When the lever 24 is thus disposed in its downward and forward position, the stop lugs 25 engage the upper faces of the arms 15—16 as shown and thus prevent the displacement of the lever. By this arrangement the pin 18 is retained in position and prevented from accidental displacement even when the shackles and thills or the tongue are removed. This is an important advantage in devices of this character, as the loss of the pin is effectually prevented during the time that the thills or the tongue are detached.

The bar 21, cams 22—23, stop lugs 25 and lever 24 and its lip 30 are constructed from a single casting, preferably of steel or malleable iron, while the plate 28 with its terminals 27 and 31 is likewise formed from a

single piece, but of steel suitably tempered to enable it to withstand the strains to which it will be subjected, and to retain the necessary grip and pressure against the shackle.

It is obvious that a simply constructed antirattler attachment is produced which may be adapted without material structural changes to a thill clip, and without the necessity for employing wrenches, screwdrivers, pincers, or other implements. It will also be noted by this arrangement and form of the trip lever that in the event of accidental displacement of the tripping of the lever 24 that it will extend transversely of the head of the pin and be stopped by the projection 25 from further displacement, and thus effectually prevent the releasing of the shackle even if the lever is thrown into the position shown in full lines in Fig. 4. By this means the safety and surety of the improved device is materially increased.

Having thus described the invention what is claimed as new is:—

An anti-rattler for thill couplings comprising a bar having cam lugs spaced apart and adapted to engage upon the shackle arms of a thill coupling when strain is applied and with stop-lugs for engaging upon said arms when strain is removed a resilient member movably engaging at one end with said bar and with a seat at the other end adapted to bear against the head of a thill shackle, a lever-arm connected to said bar, a lip upon the bar and extending therefrom at the side opposite the lever arm, said lip being adapted to bear over one end of the shackle pin of a thill coupling when the lever is disposed in closed position and the lever arm adapted to extend over the shackle pin when the strain is removed and the stop lugs are in engagement with the arms of a thill-clip.

In testimony whereof, we affix our signatures in presence of two witnesses.

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