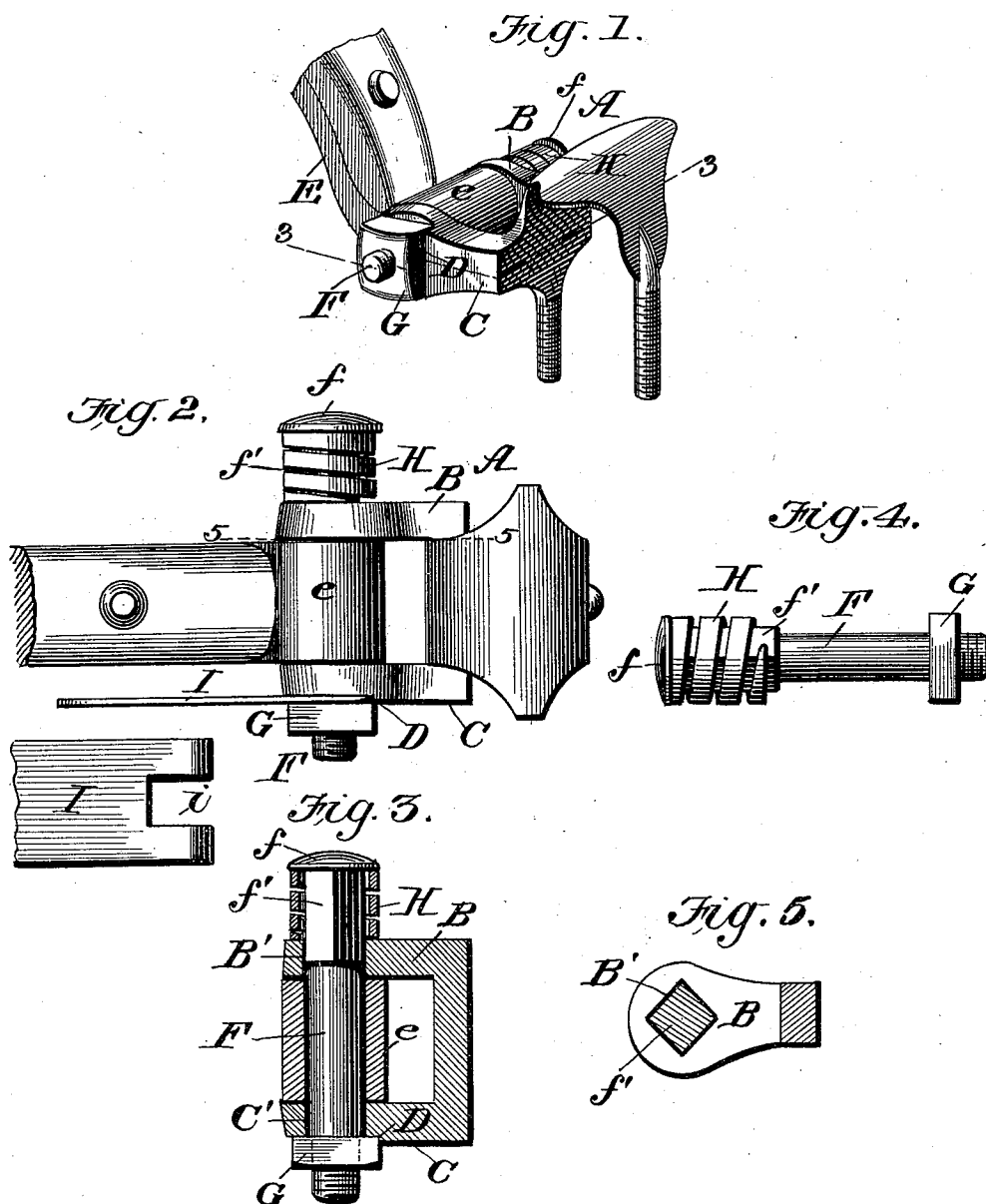


(No Model.)

C. T. REDFIELD.
THILL COUPLING.

No. 560,538.

Patented May 19, 1896.



WITNESSES:
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CHARLES T. REDFIELD, OF GLEN HAVEN, NEW YORK.

THILL-COUPLING.

SPECIFICATION forming part of Letters Patent No. 560,538, dated May 19, 1896.

Application filed February 15, 1896. Serial No. 579,406. (No model.)

To all whom it may concern:

Be it known that I, CHARLES T. REDFIELD, residing at Glen Haven, in the county of Cayuga and State of New York, have invented a certain new and useful Improvement in Thill-Couplings, of which the following is a specification.

My invention is an improvement in thill-couplings, and seeks to provide a simple and novel construction by which to efficiently secure the thill-iron to the clip, to secure the bolt so that it will not turn, to hold the securing-nut from turning on said bolt, and to accomplish such results through the aid of a spring so arranged that it not only coöperates in securing the locking of the nut, but also efficiently serves the purpose of an antirattling device, as will be more fully understood from the description that follows.

The invention consists in certain novel constructions, combinations, and arrangements of parts, as will be hereinafter described, and pointed out in the claims.

In the drawings, Figure 1 is a perspective view of my invention as in use. Fig. 2 is a top plan view of the coupling, showing the spacing-plate applied. Fig. 3 is a horizontal section on about line 3 3 of Fig. 1. Fig. 4 is a detail side view of the bolt with the spring and nut applied; and Fig. 5 is a detail section on about line 5 5, Fig. 2, drawn through the non-circular portion of the bolt and looking toward the adjacent plate or lug.

The clip A may be of ordinary construction and has the forwardly-projecting lugs or plates B and C, provided with the bolt-holes B' and C', the former being non-circular, as best shown in Fig. 5. On the outer face of the lug C is provided the shoulder or seat D, which is preferably secured by forging, planing, or otherwise forming the lug C of reduced thickness from a point in rear of the hole C' to its front end, thus forming the shoulder D, which is arranged to receive alongside it the nut, as shown in Figs. 1, 2, and 3.

The thill-iron E has its eye fitted between the lugs B and C, with its opening in register with the holes B' and C', so the bolt may be inserted through parts B, E, and C. The bolt F has a head *f*, a non-circular portion *f'* adjacent to said head, and a threaded point which receives the nut G.

The spring H is placed upon the bolt over the non-circular portion *f'* of the bolt and bears between the head *f* and the lug or plate B. This spring is preferably coiled from a thin rod or wire rectangular in cross-section and having its ends sloped or beveled off, so they will fit squarely against the head F and plate B. The spring and non-circular portion *f'* are so related to each other and to the lug B that the non-circular portion of the bolt will not project beyond the inner side of the lug B when the spring is entirely compressed. This is important, as it avoids the projection of the non-circular portion of the bolt to a point where it will enter or bear against the eye of the thill-iron, thus avoiding the possibility of any interference between the thill-iron and the bolt on which it turns.

The nut G when turned home upon its bolt fits and bears alongside the seat or shoulder of the lug or plate C. In turning this nut home the spacing-plate I, having the slot *i*, may be fitted over the bolt below the nut, and, being of equal height with the shoulder, prevents the nut from engaging alongside said shoulder until the nut has been turned to the desired point, when the plate may be removed and the nut will fit alongside the shoulder and be held from turning. Instead of using this plate in turning the nut on I may employ a hammer in both applying the nut and removing the same, the operation being to strike upon the head of the bolt and at the same instant turn the nut by a wrench or other suitable appliance when the nut has been driven with the bolt to a point out beyond the seat or shoulder. It should be understood that the shoulder need not be of any considerable height, but will be efficient if very short, because the strain of the spring will constantly draw the nut into position, where it will be locked from turning by the said seat or shoulder.

It will be understood that the lugs B and C constitute the opposite plates between which the thill-iron is secured, and while it is preferred to support these lugs or plates upon the clip in the ordinary manner it is obvious they may be secured otherwise without departing from my invention.

While the spring is efficient in coöperating in preventing any turning of the nut, it is

also important in preventing any rattling of the bolt, thus forming an antirattler.

Having thus described my invention, what I claim is—

5 1. The combination of the opposite plates having bolt-holes, that of one plate being non-circular and the other plate being provided on its outer side with a depressed portion, and alongside the same with a stop
10 shoulder for the edge of a nut, the portion fitted between said plates and having an opening in register with those of the plates, the bolt having a threaded end and provided
15 adjacent to its head with a non-circular portion, the nut, and the spring on the bolt between the head thereof and the adjacent plate and adapted to draw the nut into the depressed portion of the plate, substantially
as and for the purpose set forth.

20 2. The herein-described thill-coupling consisting of the clip lugs or ears having bolt-holes, the hole of one lug being non-circular and the other lug being provided on its outer

side adjacent to the bolt-hole with a depressed portion and at the end thereof with a stop
25 shoulder or seat for the nut, the thill-eye fitted between said lugs and having its opening registered with the bolt-holes thereof, the bolt having the threaded end and provided
30 adjacent to its head with a non-circular portion which fits in the corresponding opening of the lug, the spring on said bolt between the head of the same and the lug, such spring and non-circular portion being so related
35 to each other and to the lug that the non-circular portion of the bolt will not project beyond the inner side of the receiving-lug when the spring is compressed and the nut on said bolt
40 in position to fit in the depressed portion and to engage the stop shoulder or seat, all substantially as and for the purpose set forth.

CHARLES T. REDFIELD.

Witnesses:

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SOLON C. KEMON.