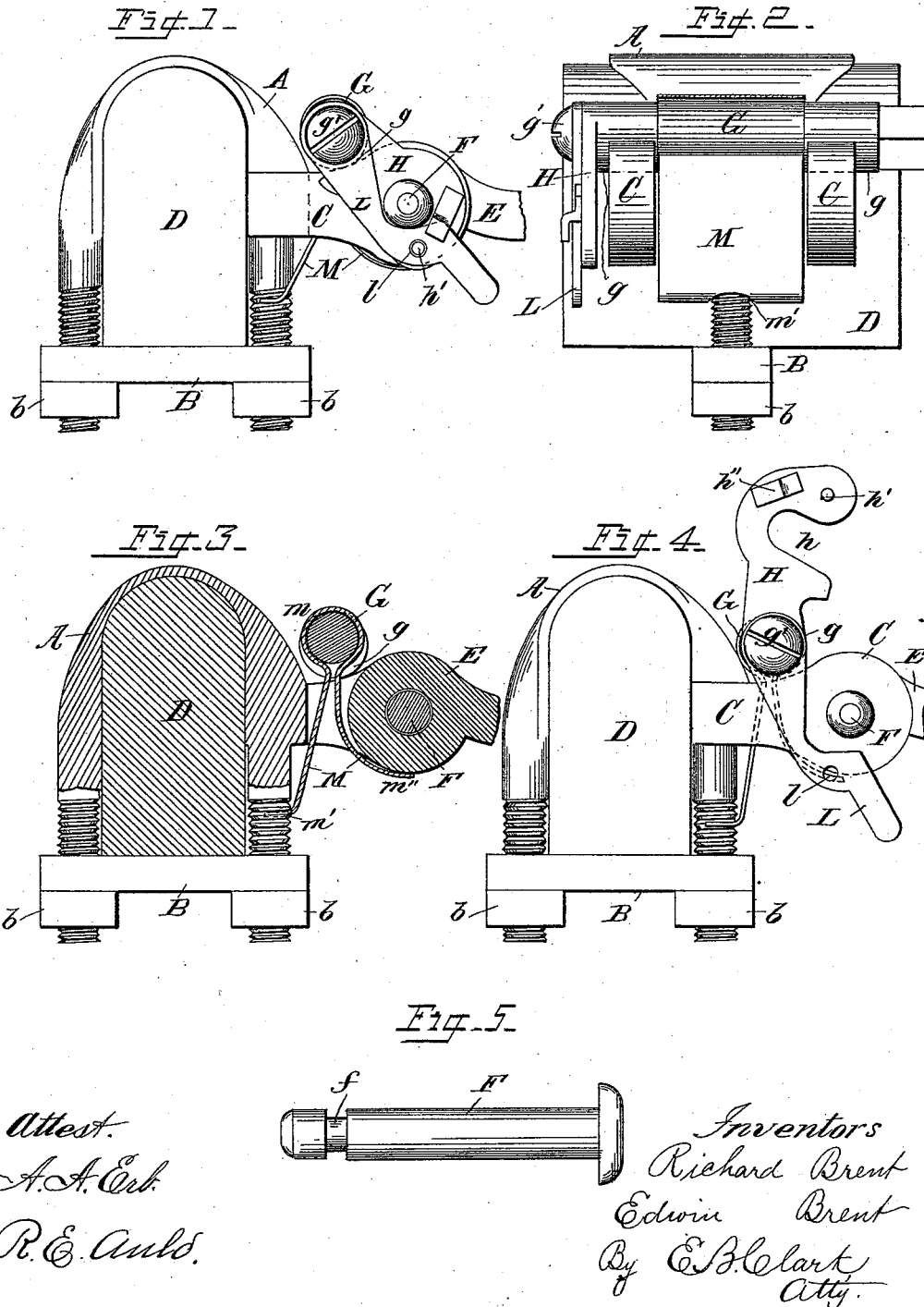


(No Model.)

R. & E. BRENT.  
THILL COUPLING.

No. 527,010.

Patented Oct. 2, 1894.



Attest.  
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# UNITED STATES PATENT OFFICE.

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## THILL-COUPLING.

SPECIFICATION forming part of Letters Patent No. 527,010, dated October 2, 1894.

Application filed November 7, 1893. Serial No. 490,283. (No model.)

*To all whom it may concern:*

Be it known that we, RICHARD BRENT and EDWIN BRENT, citizens of the United States, residing at Wilkes-Barré, in the county of Luzerne and State of Pennsylvania, have invented certain new and useful Improvements in Thill-Couplings; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to a thill coupling device containing an anti-rattler, a pin having locking eccentrics or cams, and a pair of interlocking hooks connecting with said pin and adapted for tightening the anti-rattler spring and also for holding the coupling bolt in place.

The object of the invention is to provide for conveniently and quickly removing a carriage pole or pair of shafts or thills and substituting one for the other without the use of a nut or wrench.

Another object is to provide for quickly drawing the anti-rattler spring tightly against the thill iron and holding it in place.

Prominent features of our invention are a pair of interlocking hooks which take the place of the nut commonly used at the end of the coupling bolt for holding it in place.

The matter constituting our invention will be defined in the claims.

We will now describe the construction and operation of the device in detail by reference to the accompanying drawings, in which—

Figure 1 represents a side elevation of our improved thill coupling device with the interlocking hooks secured in place. Fig. 2 represents a front view thereof with the thill iron removed and the spring in section. Fig. 3 represents a vertical transverse section showing the pin with a cam for tightening the anti-rattler spring. Fig. 4 represents a side elevation showing the interlocking hooks thrown out of position. Fig. 5 represents a detail view of the coupling bolt.

The clip A, is constructed with screw-threaded projections which pass through a plate B, and are secured to the axle D, by nuts b, in the usual manner. The clip is also formed with the usual horizontal projecting

arms C, C, having eyes for receiving the coupling bolt F, and connecting thereto the thill iron E.

The coupling bolt F, is formed with the usual head at one end and at the other end is provided with an annular groove f, instead of the usual screw thread,—said groove being for the purpose of receiving the edges of the interlocking hooks H and L, by means of which the bolt is securely held in place. The thill iron E is formed with the usual head, provided with a transverse opening or eye, through which is inserted the bolt F, for coupling it to the arms C, C, of the clip.

The interlocking hooks or latch pieces H and L are secured to one end of the pin G, as shown in Figs. 2 and 4, and such pin is held against the arm C, by the curved flat spring M.

The pin G, is provided near its ends with eccentrics or cams, g, g, (Figs. 2 and 3) which are adapted to bear upon the upper curved surfaces of the arms C, C, and also has rigidly secured to one end, or made integral therewith, the hook or latch piece H, having a curved notch h, a lateral pin h', and a guard or keeper h''. At the end of pin G, outside of hook H, there is pivotally connected by means of a screw g', the hook L, having near its outer end a hole l, adapted to engage with the lateral pin h' on hook H, as shown in Fig. 1.

It will be understood that the deep notch h, of the hook H, fits into the annular groove f, of the bolt F, so as to engage the same, and the pivoted latch piece L, is then closed over hook H, so that the lateral pin h', engages with the hole l, thereby locking the hooks together. The hook or latch piece L, is made of tempered steel, and is sufficiently flexible or springy to permit it to be pressed out past the lateral pin h'. The guard h'', on hook H, is for the purpose of preventing the hook L, from being injuriously forced outward and thereby bent out of place.

The anti-rattler spring M is formed near its middle portion with a large circular loop or curve m, which embraces the middle portion of the pin G, and below said pin the two halves pass down through the opening between the clip and the thill iron E, as shown in Fig. 3. One end of the spring is notched

at  $m'$ , where it fits against the screw threaded extension of the clip, and the other end  $m''$  is curved around so as to fit against the curved head of the thill iron E, against which it bears when the spring is drawn up and tightened by means of the cams  $g$  on pin G.

The act of turning down the hook H, so as to engage with the annular groove  $f$ , of bolt F, turns the eccentrics or cams  $g$ , into bearing contact with the upper curved surfaces of the arm C, and thereby draws up the spring M, so that its curved end  $m''$ , bears hard against the curved head of the thill iron E, as shown in Fig. 3. The hook H, being in engaging position, as in Fig. 1, the spring hook L, is moved forward until its hole,  $l$ , is engaged by the pin  $h'$ , when the hooks are locked together and serve to hold the coupling bolt F, securely in position.

Should it be desired to detach the thills or tongue from the vehicle, the hooks may be quickly disengaged and thrown back, as in Fig. 4, thereby turning the cams away from their bearing surfaces, so that the spring M, is let down and loosened, so that it no longer bears upon the thill iron. The bolt F, can now be readily drawn out and the thill or tongue withdrawn.

From the above description, it will be understood that a pair of thills or a tongue can be quickly replaced and secured in position.

Having described our invention, what we claim, and desire to secure by Letters Patent, is—

1. In a thill coupling, the coupling bolt provided at one end with an annular groove in combination with a pair of interlocking hooks or latches, suitably pivoted in the device, and adapted to engage with each other and one

of them engaging with said groove, substantially as described.

2. In a thill coupling, the combination with the grooved coupling bolt, of the pin G, having cams,  $g$ , and interlocking hooks at the end thereof and a flat spring embracing said pin, substantially as described.

3. In a thill coupling the pin G, having cams  $g$ , the rigid hook H, provided at its outer end with a catch or pin and the pivoted hook L, adapted to engage with said pin in combination with an anti-rattler spring, embracing said pin, by a circular loop and having a curved end bearing against the thill iron, and a coupling pin with which said hooks engage substantially as described.

4. In a thill coupling, the coupling bolt passing through the eyes of the arms C and thill iron E, and having at one end an annular groove, in combination with a pin, having a locking-lever H, means for holding such lever in place and the anti-rattler spring, having a loop embracing said pin for holding it in place, substantially as described.

5. In a thill coupling, the anti-rattler spring M, having a loop  $m$ , and curved ends bearing respectively against the clip and the thill iron, in combination with a pin passing through the loop of the spring and provided with eccentrics or cams adapted to bear against the arms of the clip for tightening said spring, substantially as described.

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

RICHARD BRENT.  
EDWIN BRENT.

Witnesses:

WM. J. TREMBATH,  
WM. F. DODGE.