(No Model.)

I. CLARK.

THILL COUPLING.

No. 512,947. Patented Jan. 16, 1894.

Fig. 1

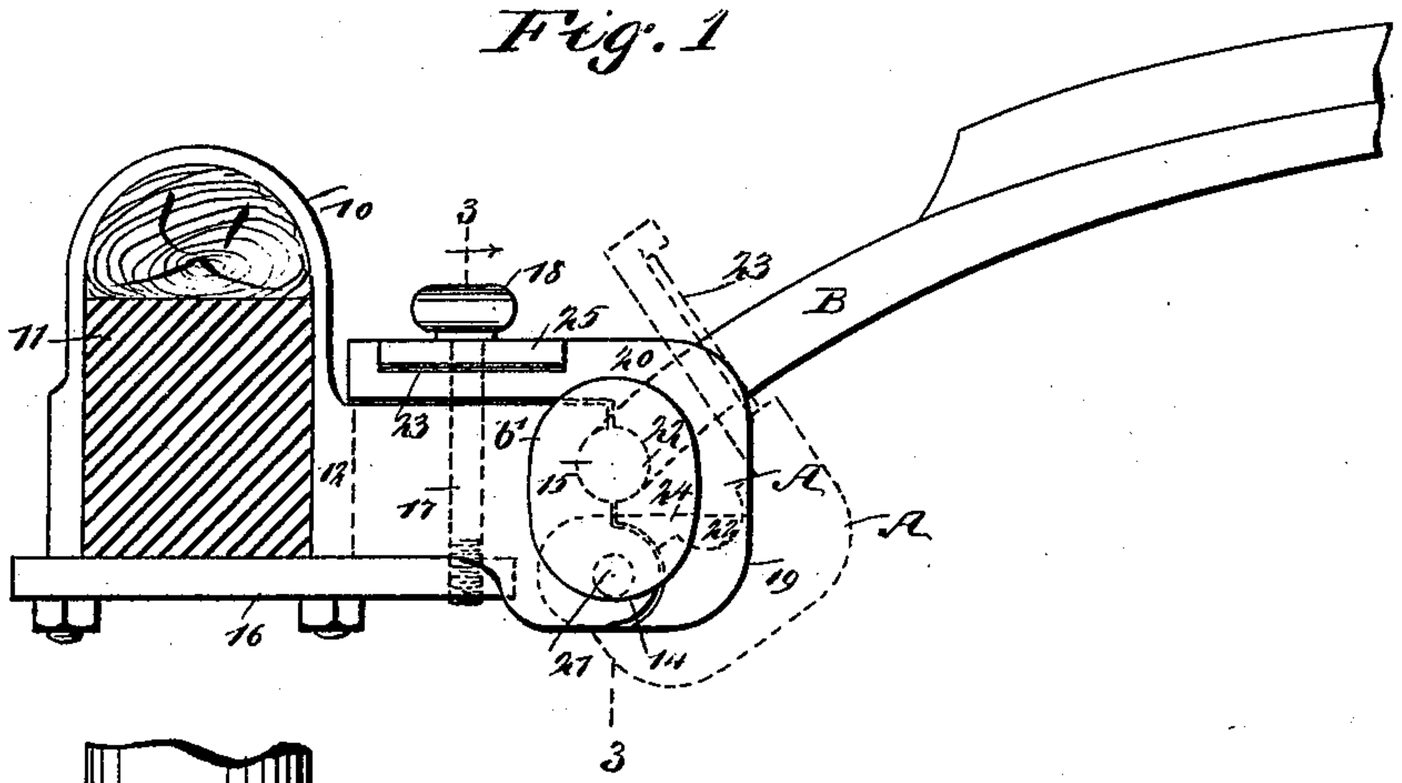

Fig. 2

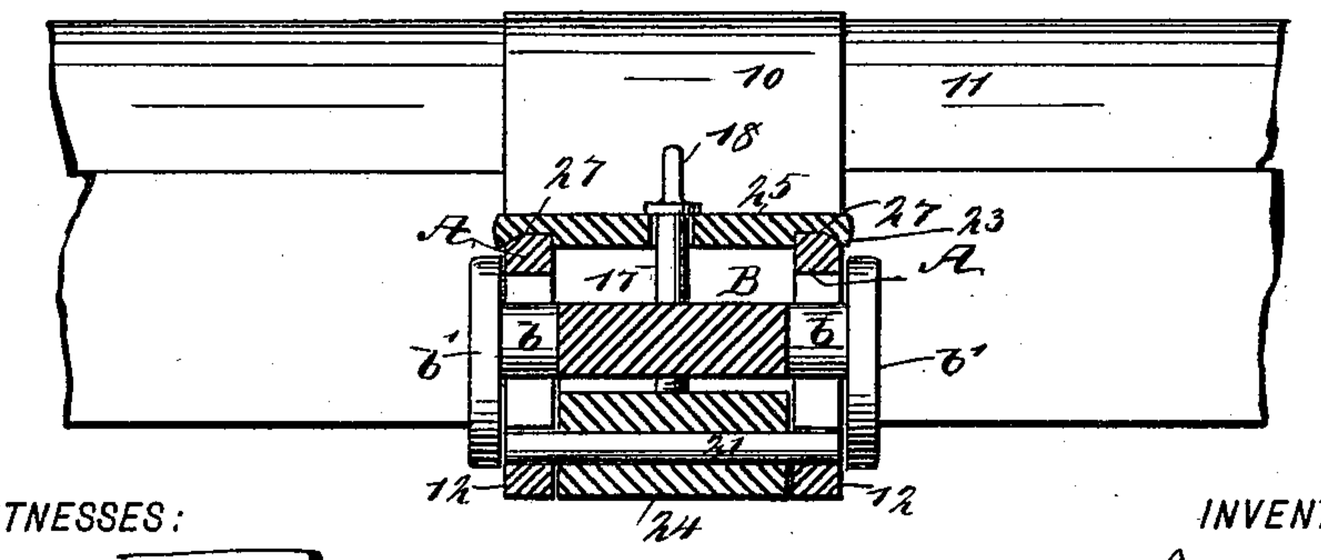

Fig. 3

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ISAAC CLARK, OF MORRIS PLAINS, NEW JERSEY.

THILL-COUPLING.

SPECIFICATION forming part of Letters Patent No. 512,947, dated January 16, 1894.

Application filed May 17, 1893. Serial No. 474,525. (No model.)

To all whom it may concern:

Be it known that I, ISAAC CLARK, of Morris Plains, in the county of Morris and State of New Jersey, have invented a new and Improved Thill-Coupling, of which the following is a full, clear, and exact description.

My invention relates to an improvement in thill couplings, and it has for its object to simplify and improve the construction of the coupling illustrated and described in the patent granted to myself February 12, 1889, No. 397,633, the especial object of this invention being to provide a very simple and conveniently manipulated device for holding the coupling in a locked position, the main portion of the coupling being essentially the same as that described and claimed in the above mentioned patent.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth and pointed out in the claims.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar figures and letters of reference indicate corresponding parts in all the views.

Figure 1 is a side elevation of the coupling, showing it in a locked position, and illustrating the open position of the coupling in dotted lines. Fig. 2 is a plan view; and Fig. 3 is a transverse vertical section taken essentially on the line 3—3 of Fig. 1.

In carrying out the invention a clip 10, is secured upon the axle 11 at any suitable point in the length of the latter. The clip has secured upon its front face a substantially U-shaped body, which body comprises mainly two parallel side arms 12. The side arms may be connected directly with the body of the clip, or may constitute an integral portion thereof; or the two arms 12 may be connected by a cross bar 13 at their rear ends, as shown in Fig. 2, in which event said cross bar is secured to the body clip. Each arm 12 of the clip is made smooth or straight upon its upper face, and is provided at its lower forward portion with a knuckle 14; and near the forward upper end of each arm a recess 15, is produced in its forward edge, the recess being of a semi-circular character. What may be termed the body of the coupling would therefore consist of the clip 10 and the arms 12. In addition, however, to these parts, the locking bar 16 of the clip may be included in the construction of the body and likewise the locking bolt or pin 17. The clip bar 16, is that through which the members of the body of the clip are passed, the said clip bar extending beneath the axle in engagement with it, and the bar is carried much farther beyond the front of the axle than beyond its rear. The position of the bar is such that its forward projecting end will extend about centrally between the clip arms 12, as shown in Fig. 2; and the bar 16, is provided near its outer end with a tapped aperture, in which the lower threaded end of the locking pin or bolt is introduced, the bolt or pin 17 being of sufficient length to extend some distance above the top of the clip arms, and it terminates in a head 18 of any approved type.

In addition to the body above described the coupling consists of two locking arms A. These locking arms are of somewhat angular construction, and each comprises a vertical member 19 and a horizontal member 20. The vertical members of the locking arms at their lower ends are pivotally connected with the knuckle portions 14 of the clip arms by means of a pin 21, one pin sufficing to pivot both of the locking arms. A semi-circular recess 22, is made in the inner or rear edge of the vertical member of each locking arm; and the said recesses 22, are adapted to register with the corresponding recesses produced in the clip arms, forming thereby a circular bearing or opening. The horizontal members 20 of the locking arms, are adapted when the coupling is in locked position, to extend over and rest upon the upper edges of the clip arms 12; and in the upper edge of each horizontal member of each locking arm a longitudinal recess 23, is produced, the base wall of the said recesses, as shown in Fig. 3, being beveled at the outer edges thereof.

The two locking arms A, are connected at or near their lower ends by means of a wide cross bar 24, shown in dotted lines in Fig. 1 and in positive lines in Fig. 3; and the pivot pin 21 of the arms is passed through this bar as is likewise shown in Fig. 3.

The main feature of this invention consists in the shape of the locking arms and in the locking device employed in connection with the arms. The screw or pin 17, constitutes a portion of the locking device, the other portion whereof consists of a cap plate 25. This

plate is provided with a slot or recess 26, located preferably at the center, and it is produced in the forward edge of the plate. The plate extends from one locking arm to the other, and is provided in its under face near each end with a transverse channel 27, shown best in Fig. 3. The said channel corresponds in cross sectional shape to the base wall of the recesses 23 in the locking arms, as the plate is adapted to enter these recesses and is of a width corresponding to their length.

When the plate is placed in position across and in engagement with the locking arms, the locking pin is made to enter the slot or recess 26 in the plate, and upon screwing the locking pin in a manner to cause it to travel in a downwardly direction, the head of the pin may be made to bind firmly against the upper surface of the plate and hold the plate firmly in engagement with the arms, the pin serving as the locking connection between the body portion of the coupler and the locking arms, by reason of the engagement of the pin with the locking bar of the clip.

The thill iron B, is provided with a T-head *b*, and the projecting portions of the T-head are round and are adapted to turn in the bearings produced by the formation of the recesses 15 and 22 in the clip and in the locking arms, as shown in Figs. 1 and 3. Each extremity of the thill iron head is provided with a substantially oblong disk *b'*, constituting an integral portion of the thill iron, and these disks, which may be termed caps, are located opposite the outer faces of the body of the coupling when the thill iron is in position therein; and these caps or disks extend downward over the pivot pin 21 of the two sections of the coupling as shown in Fig. 1, and prevent the displacement or shifting of the said pin. When it is desired to remove the thill iron from the coupling, the locking pin is loosened, the locking plate 25, removed, and the locking arms are thrown forwardly and downward, assuming the position shown in dotted lines in Fig. 1; and it is evident that at that time the thill irons may be readily moved out of engagement with the coupling and that they may likewise be readily entered between the sections of the coupling. The cross bar 24, connecting the locking arms serves to limit the downward movement of the thills.

It will be understoood that the locking plate 25 may be placed in position from the front or from the rear, and that the enlarged portions *b'* of the thill iron head may be given other contour than that of an oval; and in some instances the locking pin 17 is made stationary, and is provided with a thumb nut at its upper end to engage with the locking plate, instead of a head, as shown.

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

1. In a thill coupling, the combination, with a substantially yoke-shaped body, and locking arms pivotally connected with the body, of a locking plate having locking engagement with the arms when in coupling position with the body, and a locking pin engaging with the plate, which pin has likewise a locking engagement with the body of the coupler, as and for the purpose specified.

2. In a thill coupling, the combination, with a clip provided with arms projected therefrom, the locking bar of the clip extending between the arms, and angular locking arms pivotally connected with the arms of the clip, the locking and clip arms being provided with registering apertures forming bearings, and a cross bar connecting the lower portions of the locking arms, of a locking plate capable of clamping engagement with the upper portion of both locking arms, and a locking pin removably passed through the plate, the said pin having a screw connection with the locking bar of the clip, substantially as and for the purpose specified.

3. In a thill coupling, the combination, with a clip, arms projected forwardly from the clip, the locking bar of the clip extending forwardly between said arms, and locking arms having a hinged connection with the lower forward portion of the clip arms, the said locking arms being of angular construction and provided in their upper edges with recesses having an angular base wall, both the locking and clip arms having opposing recesses formed therein, constituting bearing surfaces, of a locking plate adapted to extend across the upper recessed portions of the locking arms, said plates being provided with channels in its under face corresponding in cross section to the cross sectional shape of the base walls of the upper recesses in the arms, and a locking pin having removable engagement with the plate and a screw connection with the forwardly projecting portion of the clip locking bar, as and for the purpose specified.

4. In a thill coupling, the combination, with a clip, arms projected therefrom, the locking bar of the clip passing between the arms, and angular locking arms having hinged connection with the clip arms, both the clip and locking arms being provided with opposing recesses constituting bearing surfaces, a locking plate capable of removable clamping engagement with the locking arms when in their coupled position, and a locking pin having detachable engagement with the locking plate and a locking engagement with the clip locking bar, of a thill iron having an essentially T-shaped head, the head of the iron being journaled in the bearings of both sets of arms, and caps formed upon the outer extremities of the head of the said iron, which caps extend over the pintle of the hinge between the two sets of arms, as and for the purpose specified.

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Witnesses:
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