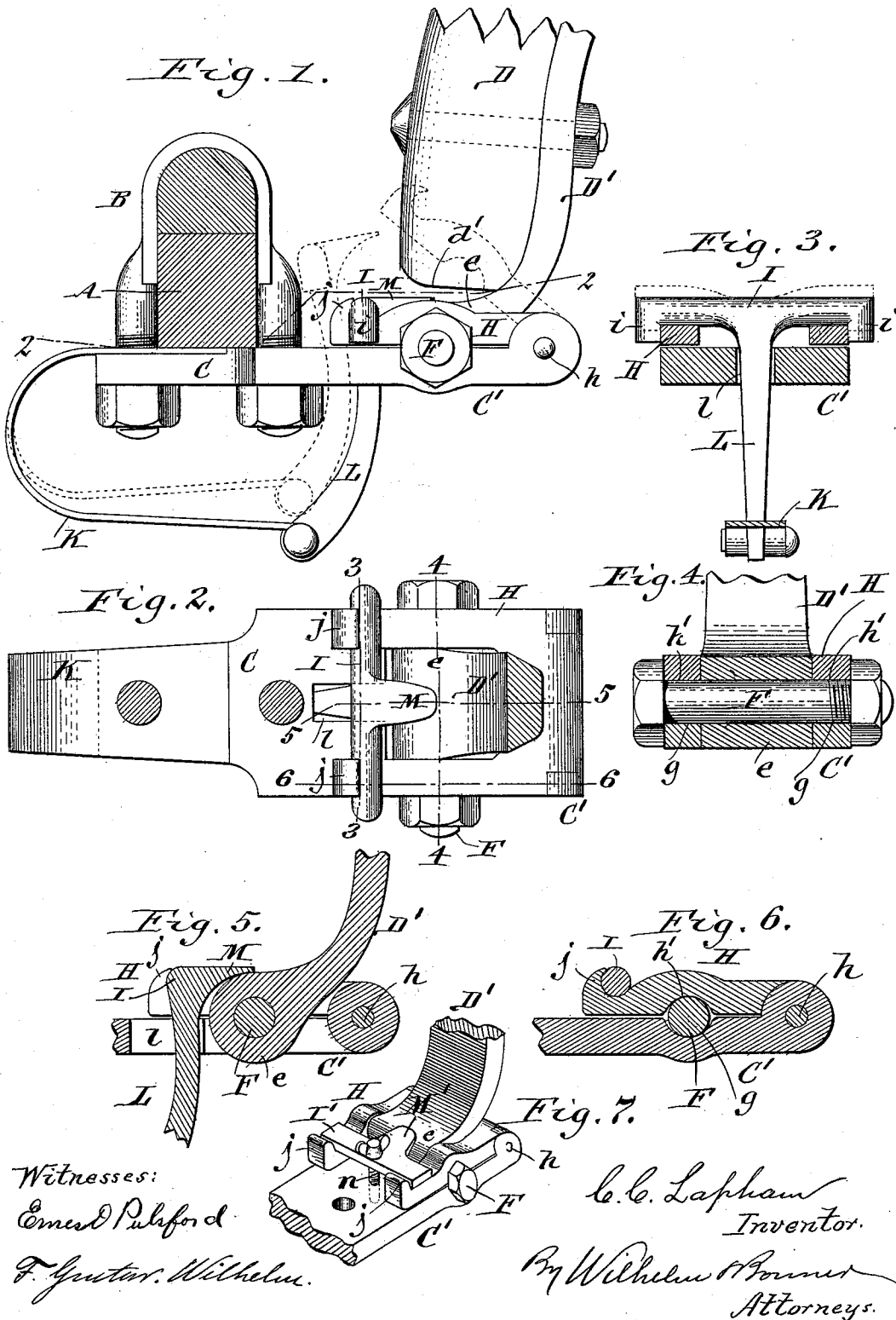


(No Model.)

C. C. LAPHAM.
THILL COUPLING.

No. 588,280.

Patented Aug. 17, 1897.



UNITED STATES PATENT OFFICE.

CHARLES C. LAPHAM, OF LAPHAM, NEW YORK.

THILL-COUPLING.

SPECIFICATION forming part of Letters Patent No. 588,280, dated August 17, 1897.

Application filed October 26, 1896. Serial No. 610,051. (No model.)

To all whom it may concern:

Be it known that I, CHARLES C. LAPHAM, a citizen of the United States, residing at Lapham, in the county of Clinton and State of New York, have invented a new and useful Improvement in Thill-Couplings, of which the following is a specification.

This invention relates more especially to a thill-coupling designed for use in connection with a thill-iron, provided at its inner end with an eye through which a separate coupling-bolt passes, the improvement belonging to the class of thill-couplings which comprise a lower stationary jaw or bracket and an upper movable jaw, between which jaws the coupling-bolt is clamped.

My invention has for its objects to produce a neat, compact, and reliable thill-coupling of this kind which permits the ready attachment and removal of the thills and which effectually prevents rattling or creaking of the parts and requires no oiling.

In the accompanying drawings, Figure 1 is a side elevation of my improved coupling in connection with an axle and a thill. Fig. 2 is a horizontal section thereof in line 2 2, Fig. 1. Figs. 3 and 4 are vertical cross-sections in lines 3 3 and 4 4, Fig. 2. Figs. 5 and 6 are fragmentary longitudinal sections in lines 5 5 and 6 6, Fig. 2, respectively. Fig. 7 is a fragmentary perspective view of a modified construction of the coupling.

Like letters of reference refer to like parts in the several figures.

A represents the front axle of a vehicle, B the usual thill-clip embracing the axle, and C the tie-bar of the clip. This tie-bar is provided with a forward extension C', forming the lower stationary jaw or bracket of the coupling.

D is the thill, and D' the thill-iron, having the usual eye *e*, through which the coupling pin or bolt F passes loosely. The lower jaw C' of the coupling is bifurcated, and the eye *e* of the thill-iron is arranged between the branches thereof, as shown, while the end portions of the coupling-bolt are seated in concave bearings or depressions *g*, formed in the upper side of the bifurcated lower jaw, as shown in Fig. 6.

H is the upper or movable jaw of the coupling, which is hinged at its front end to the

adjacent end of the fixed lower jaw by a horizontal pin *h*, so that the same is capable of swinging vertically. This hinged jaw is bifurcated, so as to straddle the thill-eye *e*, and its members are provided in their under side with concave bearings or depressions *h'*, which receive the upper portion of the coupling-bolt, the latter being seated partly in the depressions of the lower jaw and partly in the depressions of the upper jaw, whereby the same is held against forward and backward displacement.

I is a cross-bar which bridges the members of the bifurcated hinged jaw H and which bears against upwardly-projecting hooks or lugs *j*, formed at the free rear ends of said members. K is a tension-spring which tends constantly to depress the cross-bar I, so as to force the hinged jaw H against the coupling-bolt F and thereby clamp the latter between the jaws of the coupling. This tension-spring is preferably flat or U-shaped, and its upper branch is secured to the clip-bar C, while its lower branch is secured at its front end to the lower end of an arm or extension L, depending from the cross-bar I and passing through a slot or notch *l*, formed in the lower jaw C'. The cross-bar I is preferably provided at its ends with depending lugs *i*, which overlap the lateral edges of the hinged jaw H and reliably hold the bar against endwise displacement, as shown in Figs. 1 and 3.

M is a lip or tongue extending forwardly from the central portion of the cross-bar I and arranged to bear upon the eye *e* of the thill-iron when the cross-bar is in its normal position, as shown in Figs. 1, 2, and 5. This tongue holds the eye against the coupling-bolt and thereby prevents the same from rattling on the bolt. The yielding jaw H of the coupling thus prevents rattling of the coupling-bolt in its bearings, while the tongue M prevents rattling of the thill-eye on the bolt.

The thill is preferably extended nearly to the eye of the thill-iron, as shown in Fig. 1, so that in the normal elevated position of the thill its rear end overlaps or overhangs the tongue M of the cross-bar I, thus forming a stop or shoulder *d'* on the thill-iron which prevents the cross-bar from rising and becoming disengaged from the ends of the hinged jaw, whereby accidental detachment of the thills

is avoided. This construction renders the coupling safe and reliable and dispenses with the usual safety-straps.

The spring K exerts a constant tension on the cross-bar I and the hinged jaw H, and thus automatically takes up any wear of the parts.

In order to detach the thills, the latter are lowered so that their rear ends clear the tongue M of each coupling. The cross-bar I is then raised against the pressure of the spring K and swung rearwardly to clear the lugs J of the hinged jaw, as indicated by dotted lines in Fig. 1, and the hinged jaw is then swung upwardly to the position shown by dotted lines in the same figure, thereby releasing the coupling-bolt carried by the thill-iron and permitting its removal from the coupling.

In Fig. 7 is shown a modification of my improvement which embodies the antirattling feature of the coupling. In this case the cross-bar I', which carries the tongue M', is held in engagement with the hinged jaw of the coupling by a vertical thumb-screw or bolt n, passing through the cross-bar and through a horizontal slot formed in the lower jaw. Upon loosening this bolt the cross-bar can be disengaged from the free end of the hinged jaw for releasing the latter.

The eyes of the thill-irons vary somewhat in size, and in case the tongue M does not bear against the eye after coupling the parts the tongue may be bent up or down to bear upon the eye or the ends of the cross-bar I may be bent upward or downward for the same purpose, the coupling being constructed of malleable metal to permit this bending of the parts.

I claim as my invention—

1. The combination with the stationary and movable jaws between which the coupling-bolt of the thill-iron is clamped, of a cross-bar bearing against the movable jaw and carrying a lip or tongue which bears against the eye of the thill-iron, and means for forcing said cross-bar against the movable jaw, substantially as set forth.

2. The combination with a stationary jaw

or bracket and a bifurcated movable jaw adapted to receive the eye of a thill-iron between its members, of a cross-bar bridging the members of said bifurcated jaw and carrying a lip or tongue which bears against the eye of the thill-iron, and means for forcing said cross-bar against said movable jaw, substantially as set forth.

3. The combination with the lower stationary jaw and an upper bifurcated jaw pivoted to the stationary jaw and adapted to straddle the eye of the thill-iron, of a cross-bar bridging the free ends of said bifurcated jaw and provided with an arm extending downwardly between the members of said bifurcated jaw and through the stationary jaw, and a tension-spring secured to said lower jaw and connected at its free end to the depending arm of said cross-bar, substantially as set forth.

4. The combination with a lower stationary jaw and an upper jaw pivoted thereto, of a coupling-bolt confined between said jaws, a thill-iron having an eye surrounding said bolt, a cross-bar bearing upon said pivoted jaw and having a tongue which bears against the eye of the thill-iron, means for forcing said cross-bar against the movable jaw and a stop or shoulder arranged on the thill-iron and overhanging said tongue in the normal elevated position of the thills, substantially as set forth.

5. The combination with a lower stationary jaw and an upper bifurcated jaw pivoted thereto, of a thill-iron having an eye arranged between the members of said bifurcated jaw, a cross-bar bridging the members of said bifurcated jaw and having a forwardly-extending tongue which bears upon the eye of the thill-iron, and a thill secured to said thill-iron and having its rear end arranged to overhang said tongue in the normal elevated position of the thills, substantially as set forth.

Witness my hand this 15th day of October, 1896.

CHARLES C. LAPHAM.

Witnesses:

FRANK H. CLOUGH,
ELIJAH E. STARR.