

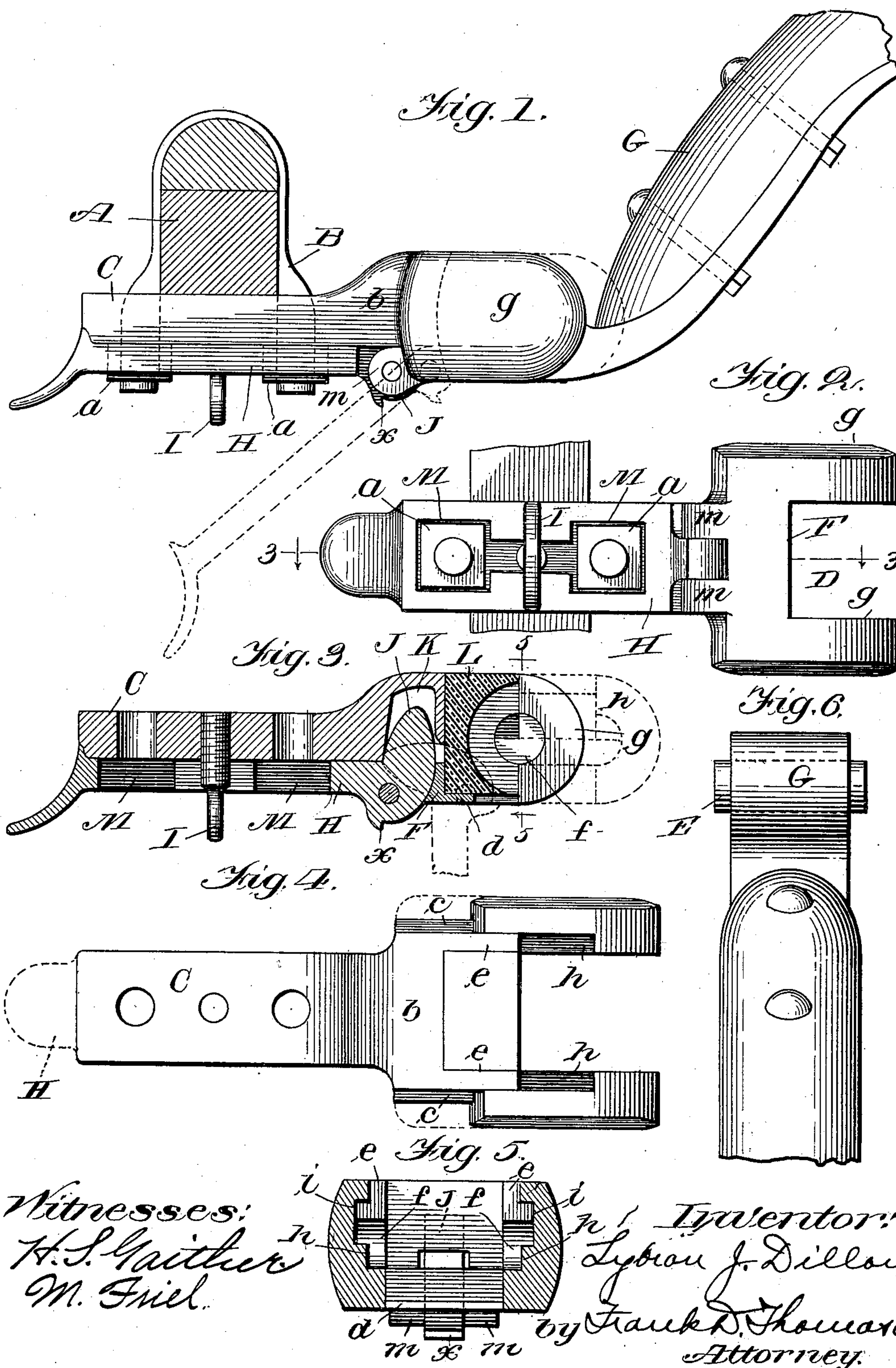
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L. J. DILLON.
THRILL COUPLING.

(Application filed May 29, 1902.)

(No Model.)



UNITED STATES PATENT OFFICE.

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THILL-COUPLING.

SPECIFICATION forming part of Letters Patent No. 713,290, dated November 11, 1902.

Application filed May 29, 1902. Serial No. 109,423. (No model.)

To all whom it may concern:

Be it known that I, LYBRAN J. DILLON, a citizen of the United States of America, and a resident of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Thill-Couplings, of which the following is a full, clear, and exact description.

The object of my invention is to provide a simple, cheap, and effective thill-coupling which can be easily manipulated to insert the thill-bolts and when the latter are locked therein cannot be accidentally displaced, which prevents rattling, and when said thills are locked in place provide a nut-lock for the axle-clips. This I accomplish by the means hereinafter fully described, and particularly pointed out in the claims.

In the drawings, Figure 1 is a side view of my invention, showing its application to an axle and showing the rear portions of the thill coupled thereto. Fig. 2 is a plan view of the under side of the same with the thill removed. Fig. 3 is a longitudinal central section taken on dotted line 3 3, Fig. 2, looking in the direction indicated by the arrows. Fig. 4 is a plan view of the upper side thereof. Fig. 5 is a transverse section taken on dotted line 5 5, Fig. 3, looking in the direction indicated in the drawings. Fig. 6 is a plan view of the rear broken-away portion of a thill adapted to be used in connection with my invention.

In the drawings, A represents an axle, and B an axle-clip secured thereto. The screw-threaded ends of this clip are extended through the bar C and have nuts *a a* on their lower ends. The clip-bar C constitutes the shank, as it were, of the thill-coupling, and its forward end is increased both in transverse and vertical dimensions to form a head *b*, the longitudinal sides of which are parallel and are provided with longitudinal tenons *c c* and the under side of which is in the same horizontal plane as the under side of the clip-bar. Between its longitudinal sides head *b* is provided with a rectangular recess, which extends from its top to its under side and provides corresponding arms or lugs *e e*, in the forward vertical edges of which next their lower edges are provided semicircular thill-bolt seats *f f*.

D represents a case comprising two corresponding side members *g g*, the distance between which corresponds to the width of the recess between the lugs *e e* of the head and the upper edges of which are in the same horizontal plane as the top of the head and the lower edges of which extend below the lower edges of the lugs *e e* of the head and are connected by a transverse web F near their rear ends. At a suitable point to the rear of their forward extremities the side members *g g* of the case are provided with longitudinal recesses *h h* of such depth that the distance between their vertical walls corresponds to the width of the head and which are of such vertical dimensions as to extend from the upper edges of said side members to the plane of the under side of the head. The vertical walls of these recesses are provided with grooves *i i*, into which when said case is slid longitudinally backward onto said head the tenons *c c* of the latter enter, and thus permit the longitudinal adjustment of said case on said head, but prevent the vertical displacement of the same. In the inner vertical walls of these recesses *h h* I make semicircular thill-seats *k*, which correspond in dimensions with and are opposed to the thill-seats *f f* in the lugs *e e* and together therewith, when said case is adjusted to the limit of its rearward movement on the head *b* and the forward edges of the lugs *e e* bear against the forward vertical end walls of recesses *h h*, form a complete circular bearing for the ends of the thill-bolt E of the thills G. By moving the case forward upon the head *b* a sufficient distance the forward edges of the lug *e e* and the vertical end walls of the recesses *h* can be separated a sufficient distance to permit of the removal of the ends of the thill-bolt or to permit of the insertion of the same in the bearings thus made. In order to accomplish this adjustment of the case upon the head for the purposes stated, I pivotally connect to lugs *m m*, projecting to the rear from web F of the case, the forward end of a lever H. When the thill is locked in the coupling, the portion of the lever extending to the rear of its fulcrum will be horizontal and lie flat against the under side of the clip-bar and be confined in this position by a

thumb-screw I, which extends up through the longitudinally-elongated opening in said lever and is tapped and secured in the clip-bar about its center of length. When the thumb-screw is turned so that the flattened end thereof is transverse to the slot, the lever will catch under the shoulders of the same; but when the said end is turned so as to be parallel with said lever the latter can be moved downward until it is at right angles to the clip-bar. Lever H has a cam-shaped extension J projecting at right angles from its pivoted end, and this extension when the lever is in the position shown in Fig. 3 extends up into a pocket K in the under side of the head. The shape of this extension is such that when the lever is moved downward away from the clip-bar it engages the rear vertical wall of said pocket and forces the case forward, and when the said case is at the limit of its forward adjustment by moving said lever upward toward the clip-bar the extension engages the forward vertical wall of said pocket and draws the case backward toward and to the limit of its rearward movement. In order to prevent the lever from being moved so far downward and forward that the extension can work out of its pocket, I have provided the end of the lever opposite said extension with a stop-lug α . When the lever is moved to the vertical position, (shown in dotted lines in Fig. 3,) this stop-lug engages the edges of the crotch between lugs m and prevents further movement thereof in that direction.

The coupling is made absolutely antirattling by means of a rubber cushion L. This cushion, after the thill-bolts have been inserted in its bearings, is placed back of the extremity of the thill in the space between the side members of the case and between the lugs $e e$ of the head, and its lower rear edge is seated in the rabbet made in the forward part of the web F. Thus when the lever is moved so as to cause the case to clamp the journals of the thill-bolt in its bearings the cushion is compressed between said thill and the rear wall of the recess between lugs e of the head.

In order to provide means for preventing the lever from dropping should the thumb-screw become loose, I have made a lateral opening in the lower flattened end of said thumb-screw, through which a strip of leather or a wooden or metal peg can be inserted.

The lever H, as before stated, is provided with a longitudinally-elongated opening. This opening M has its ends increased in width, so as to clear the clip-nuts, which latter when tightened are left with their sides parallel to the sides of the said opening, so that when the lever is in the position shown in Figs. 1 and 2 nuts are locked and cannot become loose.

What I claim as new is—

1. A thill-coupling comprising the clip-bar

of an axle-clip, the forward end of which is provided with a head having tenons projecting from its longitudinal sides and having forwardly-projecting corresponding lugs the forward vertical edges of which are provided with bearing-recesses, and a longitudinally-adjustable case consisting of corresponding side members having recesses in their inner surfaces having corresponding grooves in the opposing vertical side walls thereof, and having bearings in the vertical end walls thereof.

2. A thill-coupling comprising the clip-bar of an axle-clip the forward end of which is provided with a head having forwardly-projecting corresponding lugs, the forward vertical edges of which are provided with bearing-recesses, and a longitudinally-adjustable case consisting of corresponding side members having companion bearings in the inner surfaces thereof and a lever pivotally connected at one end to said case, and adapted to move said case so as to open said bearings when in one position and close the same when in the other position.

3. A thill-coupling comprising the clip-bar of an axle-clip the forward end of which is provided with a head having forwardly-projecting corresponding lugs, the forward vertical edges of which are provided with bearing-recesses, and a longitudinally-adjustable case consisting of corresponding side members having companion bearings in the inner surfaces thereof and a lever pivotally connected at one end to said case, having a cam-shaped extension, which engages a pocket made in the under side of said head, as and for the purpose set forth.

4. A thill-coupling comprising the clip-bar of an axle-clip the forward end of which is provided with a head having forwardly-projecting corresponding lugs, the forward vertical edges of which are provided with bearing-recesses, and a longitudinally-adjustable case consisting of corresponding side members having companion bearings in the inner surfaces thereof and a lever pivotally connected at one end to said case, having a cam-shaped extension, which engages a pocket made in the under side of said head and having a stop-lug on the side of the pivoted end thereof opposite said extension, as and for the purpose set forth.

5. A thill-coupling comprising the clip-bar of an axle-clip the forward end of which is provided with a head having forwardly-projecting corresponding lugs, the forward vertical edges of which are provided with bearing-recesses, and a longitudinally-adjustable case consisting of corresponding side members having companion bearings in the inner surfaces thereof and a lever pivotally connected at one end to said case, and having a longitudinally-elongated opening therein, and a thumb-screw for locking said lever to said clip-bars; said lever holding said case to the limit of its rearward movement when se-

cured against the clip-bar and moving said case forward when moved away from said clip-bar, as and for the purpose set forth.

6. A thill-coupling comprising the clip-bar
5 of an axle-clip the forward end of which is provided with a head having forwardly-projecting corresponding lugs, the forward vertical edges of which are provided with bearing-recesses, and a longitudinally-adjustable
10 case consisting of corresponding side members having companion bearings in the inner surfaces thereof and a lever pivotally connected at one end to said case and having a

longitudinally-elongated opening therein the ends of which are wider than the central portion to clear and inclose the nuts of the axle-clip, and means for securing said lever against the clip-bar; said lever when in position against said clip-bar holding the case at the limit of its rearward movement, and causing
20 said case to move forward when moved away from said clip-bar.

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Witnesses:

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