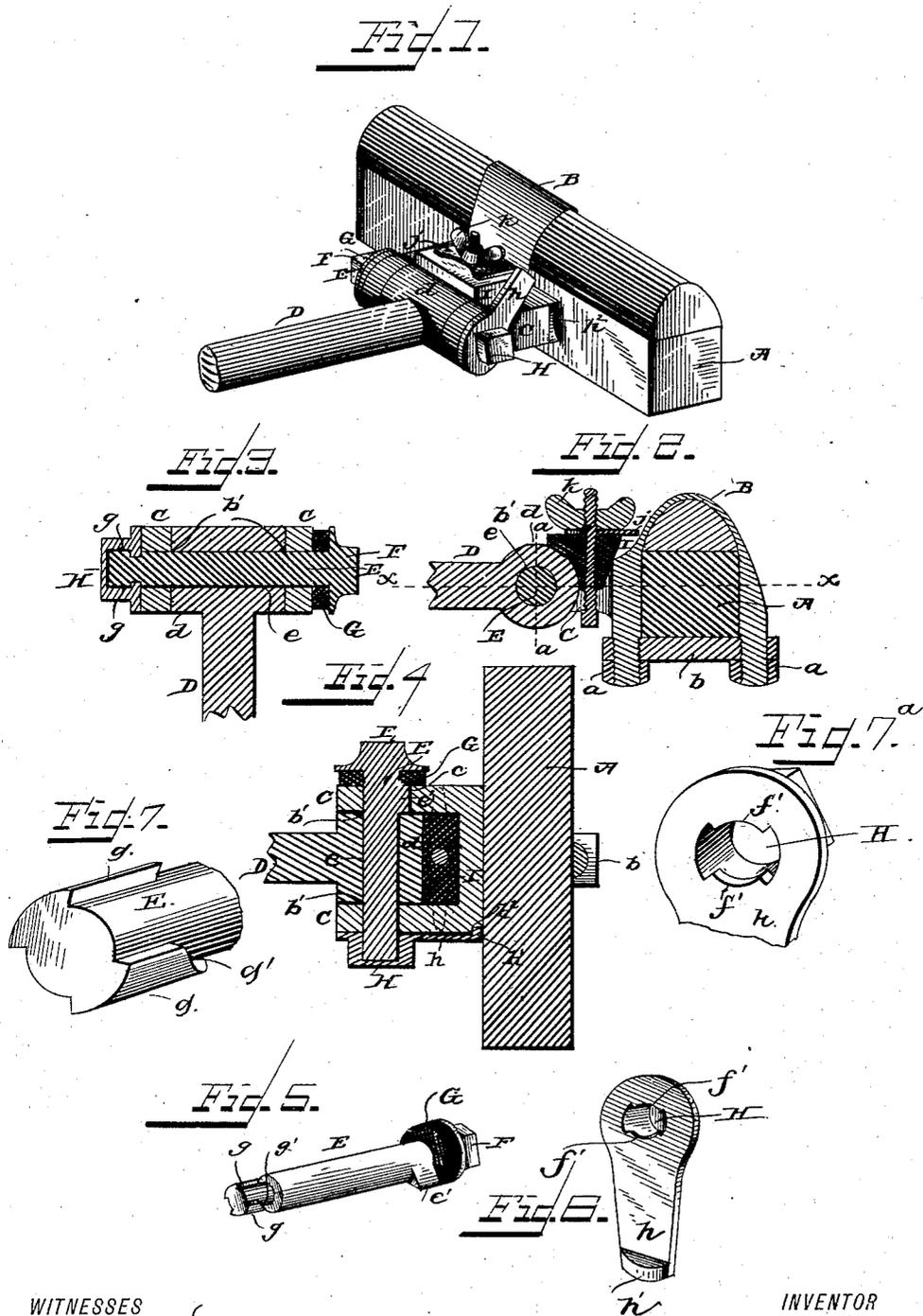


(No Model.)

R. HART.
THILL COUPLING.

No. 317,349.

Patented May 5, 1885.



WITNESSES
C. W. Nash
E. J. Diggers

INVENTOR
Richard Hart
By his Attorneys
C. A. Snow

UNITED STATES PATENT OFFICE.

RICHARD HART, OF BYRON, ILLINOIS.

THILL-COUPLING.

SPECIFICATION forming part of Letters Patent No. 317,349, dated May 5, 1885.

Application filed February 24, 1885. (No model.)

To all whom it may concern:

Be it known that I, RICHARD HART, a citizen of the United States, residing at Byron, in the county of Ogle and State of Illinois, have invented a new and useful Improvement in Thill-Couplings, of which the following is a specification, reference being to the accompanying drawings.

My invention relates to thill-couplings; and it has for its object, first, to provide the pivoting or securing bolt with a feather or spline to fit a groove or recess in one of the ears of the draw-irons; second, to provide an elastic washer, and to so locate the same as to hold the pivotal bolt in place and prevent rattling; third, to provide said bolt with a cam-locking end adapted to be engaged by a lever-nut; and, fourth, to provide said lever-nut with a nib or lug adapted to engage a recess in one of the ears of the draw-irons to prevent said lever-nut from turning and becoming accidentally detached.

With the above objects—a simple construction and an effective operation—in view, the invention consists in the improved construction and combinations of parts hereinafter fully described, and pointed out in the claims.

In the drawings, Figure 1 is a perspective view of a thill-coupling constructed in accordance with my invention. Fig. 2 is a longitudinal vertical section of the same. Fig. 3 is a transverse section taken through the pivotal bolt on the line *a a*, Fig. 2. Fig. 4 is a horizontal section on the line *x x*, Fig. 2; and Figs. 5 and 6 are detail views, respectively, of the pivoted bolt and lever-nut; Figs. 7 and 7^a are enlarged detail views of the ends of the pivoted bolt and lever-nut.

In the accompanying drawings, in which like letters of reference indicate corresponding parts in all the figures, A represents a portion of the axle.

B represents a clip fitting over the axle, having threaded ends which are adapted to be engaged by nuts *a*, between which and the axle is a plate, *b*, located on said threaded ends of the clip and connecting the same.

Formed integral with the clip B and extending outwardly therefrom are ears C, located a suitable distance apart, and provided

with holes or openings *b'*, as shown, and communicating with one of said holes or openings is a recess, *c*.

D represents a thill-iron which is formed at its rear end with a head, *d*, having a transverse passage or opening, *e*. Said thill-iron is located between the ears C, and is pivoted between the same by means of a bolt, E, fitting the holes or openings in said ears. The said bolt E is formed with a head, F, and with a feather or spline, *e'*, between which and the head is located an elastic washer, G, preferably of rubber. By providing the feather or spline *e'*, and the recess to receive the same, it will be seen that all possibility of the bolt turning is prevented. The other end of the bolt E is reduced, and formed on said reduced end of the bolt, on opposite sides of the same, are lugs *g*, the inner faces or edges, *g'*, of which incline inwardly.

H represents a lever-nut, which has inwardly-extending nibs *f'*, the inner faces of which incline to correspond to the inclination on the faces or edges *g'* of the lugs *g*, so that when said nut engages the end of the bolt and is give a quarter-turn it will be locked upon said bolt.

Upon the under side of the lever *h* of the lever-nut H is provided a nib, *h'*, which, when the lever-nut is tightened or locked is adapted to engage a recess or seat, *h''*, formed upon the outer side of the ear C, adjacent thereto, said recess being formed at the rear end of the ear near the axle.

Between the rear end of the thill-iron and the clip is located a rubber cushion, I, which has a circular recess on its front face to accommodate the head of said thill-iron. The rubber cushion is provided with a vertical passage or opening in which is seated a T-shaped bolt the head of which bears against the under sides of the ears C, and upon the upper end of this bolt, which extends beyond the rubber cushion, is a washer, *j*. The upper end of the T-shaped bolt is threaded, and adapted to engage said threaded end is a thumb-nut, *k*, which, when tightened, compresses the cushion and causes it to bear tightly against the head of the thill-iron.

In operation the thill-iron is placed between

the ears C, and the bolt E passed through the holes or openings in the same, the feather or spline on said bolt engaging the recess *c*, thus preventing said bolt from turning, the elastic cushion on said bolt bearing against the outer face of one of the ears C. The lever-nut is then placed upon the end of the bolt and turned downwardly, the nib or lug on the same engaging the recess or opening *h*², thus preventing the accidental detachment of the lever-nut. It will be seen that by turning said lever-nut the inclined faces of the nibs *f'* engage the inclined edges of the lugs *g*, and when turned serve to tighten the bolt and compress the elastic washer, thus preventing all rattling of the bolt.

By the construction before described the thills may, when desired, be readily and easily removed and with but little trouble, and may be almost instantly adjusted in position.

By constructing the end of the pivotal bolt as described, and providing the lever-nut with the nibs having the inclined edge, the use of a threaded bolt and nut is obviated. This is an essential point and a decided advantage, from the fact that the ordinary nut is liable to become loose and detached, while with the construction described it is impossible for the parts to become even loose. The feather engaging the recess in the opening or passage of one of the ears prevents the bolt from turning, and the elastic washer, while serving as a cushion for the head of the bolt, also prevents said bolt from rattling.

Having fully described my invention, what

I claim as new, and desire to secure by Letters Patent, is—

1. In a thill-coupling, the combination, with the outwardly-extending ears having holes or openings and a thill-iron having an opening adapted to register therewith, of a bolt, an elastic washer between the head of said bolt and one of the ears, a lever-nut to engage the bolt, and a nib on said lever-nut to fit a recess in one of said ears, substantially as set forth.

2. In a thill-coupling, the combination, with the outwardly-extending ears having holes or openings and a thill-iron having a passage or opening adapted to register therewith, of a bolt having lugs at its end provided with inclined inner faces or edges, and a lever-nut having nibs provided with inclined faces, substantially as set forth.

3. In a thill-coupling, the combination, with the outwardly-extending ears having holes or openings and a thill-iron having an opening or passage adapted to register therewith, of a bolt having a reduced end provided with lugs having inclined inner edges, and a lever-nut having nibs provided with inclined edges, and a nib to engage a recess on one of the ears, substantially as set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

RICHARD HART.

Witnesses:

GEORGE FORSYTH,
F. A. WHEELOCK.