(No Model.)

M. F. McINTYRE.

THILL COUPLING.

No. 385,867. Patented July 10, 1888.

Fig. 1.

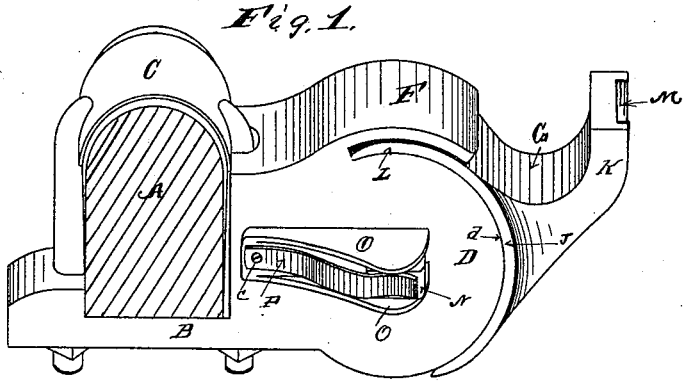


Fig. 2.

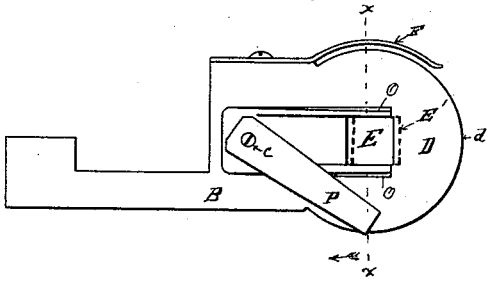


Fig. 3.

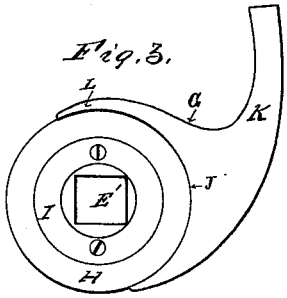


Fig. 4.

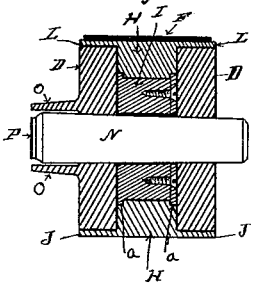
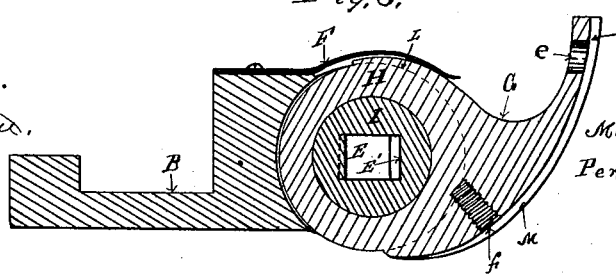


Fig. 5.



Witnesses.

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UNITED STATES PATENT OFFICE.

MALCOLM F. McINTYRE, OF GIRARD, PENNSYLVANIA.

THILL-COUPLING.

SPECIFICATION forming part of Letters Patent No. 385,867, dated July 10, 1888.

Application filed February 3, 1888. Serial No. 262,953. (No model.)

To all whom it may concern:

Be it known that I, MALCOLM F. McINTYRE, a citizen of the United States, residing at Girard, in the county of Erie and State of Pennsylvania, have invented certain new and useful Improvements in Thill-Couplings; and I 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, reference being had to the accompanying drawings, and to the letters of reference marked thereon, forming part of this specification.

My invention consists in the improvements in thill-couplings hereinafter set forth and explained in the specification and claims and illustrated in the accompanying drawings, in which—

Figure 1 shows a perspective view of my improved thill-coupling secured to a carriage-axle. Fig. 2 shows a side elevation of the clip portion of my device. Fig. 3 shows a like view of the thill-iron removed from the clip. Fig. 4 shows a cross-section of my complete device on the line *x x* in Fig. 2. Fig. 5 shows a longitudinal vertical section of my improved thill-coupling.

Like letters refer to like parts in all the figures.

In the construction of my invention shown, A is a section of a carriage axle; B, a thill-coupling clip, and C a strap for securing the clip B to the axle A. This clip B, I make with ears D D, having convex or circular ends *d*.

Through the ears D D centrally I make a square or rectangular key or bolt hole, E. On the top of the ears D D, I cast or otherwise secure an overhanging lip, F, adapted to cover the opening between the ears D D. The thill-iron G, I make with a centrally-projecting bearing, H, adapted to fit between the ears D D.

Within the bearing H is a bushing, I, provided with a rectangular opening, E', located eccentrically therein. This bushing I is provided with flanges *a a*, which fit into annular recesses in the bearing H, Fig. 4, so that the bushing I will not be displaced when the bearing H is removed from between the ears D D. The bearing H is at its front side provided with laterally-projecting flanges J J, which extend around nearly half of the circumference of the bearing H, the arm K projecting from the front thereof to the thill.

The inner faces of the flanges J J are circular and adapted to fit closely around and turn upon the circular ends *d* of the ears D D, the upper portion, L, of the flanges J J passing under the overhanging lips F on the clip B, so that the joint and its wearing parts are thoroughly covered and protected from dirt and dust.

In the face of the arm K is a groove, M, adapted to receive a curved bar secured to a thill, which may be bolted thereto, as illustrated by the bolt-holes *e* and *f*, (see Fig. 5,) or made integral therewith when the bearing H of the thill-iron G is placed between the ears D D. It will be observed by referring to Fig. 5 and to the dotted lines shown in Fig. 2 that the eccentric opening E' in the bushing I is not longitudinally quite opposite the opening E in the ears D D, so that when a square tapering bolt or key, N, is inserted, as illustrated in the cross section, Fig. 4, the tendency of the key or bolt N is to draw the flanges J J closely against the round ends *d* of the ears D D, and in this manner prevent all looseness or rattling in the joint. On the outside of one of the ears D, I make outwardly-projecting lugs *o o*, between which I secure a light spring, P, adapted to press upon the head of the key N and keep it firmly in place, this spring being so pivoted at *e* that it may be raised and swung to one side when it is desired to remove the key N.

In operation it is obvious that the bushing I is held firmly in one position by the square bolt or key N, and that the bearing H of the thill-iron G turns freely on the bushing I.

It will also be observed that by means of the tapering key N and the spring P operating thereon the wear of the joint is automatically taken up, so that it is always tight, while at the same time the overhanging lip F prevents dirt from finding a lodgment therein.

Having thus fully described my invention so as to enable others to construct and operate the same, what I claim as new, and desire to secure by Letters Patent of the United States, is—

1. The combination, in a thill-coupling, of a clip, B, having the overhanging lip F, and the ears D D thereon, with the thill-iron G, having the bearing H and the flanges J J thereon, and the eccentric bushing I in said bearing H, substantially as and for the purpose set forth.

2. The combination, in a thill-coupling, of the ears D D, having rounded ends *d*, and the square bolt-hole E therein, with the thill-iron G, having a bearing, H, adapted to fit between the ears D D, an eccentric bushing, I, in said bearing, and a tapering key, N, substantially as and for the purpose set forth.

3. A thill-iron consisting of a circular bearing, H, having an eccentrically-pierced bushing, I, therein, concave flanges J J on the front edge of the bearing H, and an arm, K, provided with a groove, M, and bolt-holes *e* and *f*, substantially as and for the purpose set forth.

In testimony whereof I affix my signature in presence of two witnesses.

MALCOLM F. McINTYRE.

Witnesses:
H. J. CURTZE,
H. LEO.