

(No Model.)

T. A. WATROUS.
THILL COUPLING.

No. 531,884.

Patented Jan. 1, 1895.

Fig. 1.

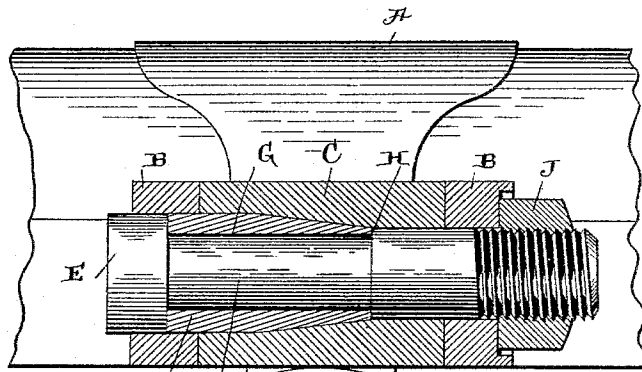


Fig. 2.

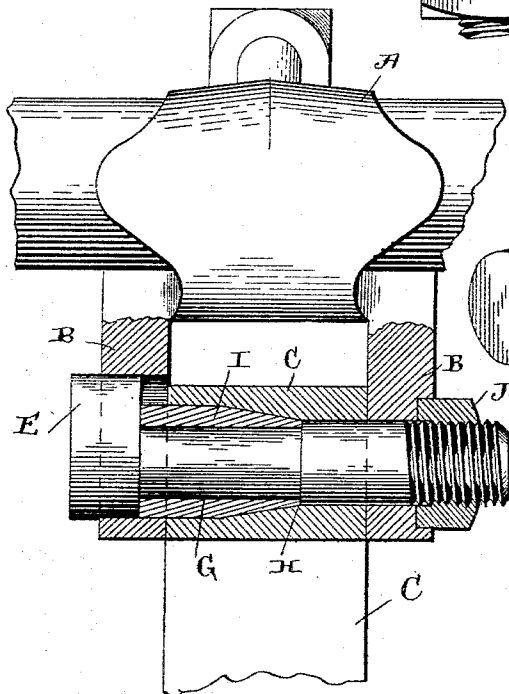
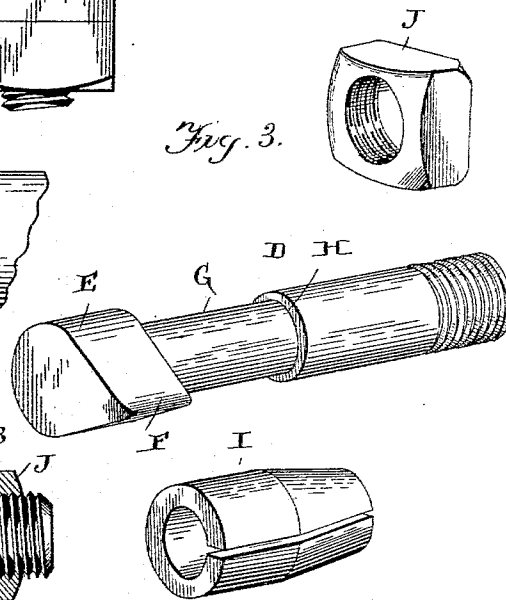


Fig. 3.



WITNESSES.

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UNITED STATES PATENT OFFICE.

THOMAS A. WATROUS, OF ELMIRA, NEW YORK.

THILL-COUPLING.

SPECIFICATION forming part of Letters Patent No. 531,884, dated January 1, 1895.

Application filed July 6, 1894. Serial No. 516,767. (No model.)

To all whom it may concern:

Be it known that I, THOMAS A. WATROUS, of Elmira, in the county of Chemung and State of New York, 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 pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to an improved thill coupling; and the object of the same is to provide a coupling that will be complete in itself, and one that will not need to be supplemented by any anti-rattling device. The same is durable, noiseless, simple and easy of adjustment, neat and at the same time cheap of construction.

The invention consists in the novel features of construction hereinafter fully described and claimed and illustrated in the accompanying drawings, in which—

Figure 1 is a vertical sectional view of my improved coupler. Fig. 2 is a plan view of the same partly in section. Fig. 3 is a detailed view of the bolt and bushing.

A designates the axle clip, B the clip arms and C the thill arm. The shackle bolt D is threaded at one end in the usual manner while at its opposite end it is formed with a head E which is circular upon its periphery with the exception of lug F which extends therefrom as shown and extending entirely through one of the clip arms is a passage of the same size and form as the head and through which the same is adapted to be drawn when being tightened to position by the nut upon the opposite threaded end of the bolt. Thus the bolt head instead of being seated against the outer side of the clip arm in the usual manner is adapted to be drawn therethrough in tightening up the thill so that there is no limit to the adjustment of the bolt in accommodating itself to the wear of the coupling. The bolt is reduced from its head inward toward its center as shown to form depression G while the portion of the bolt between the depression and the thread is smooth as shown, the latter constituting a shoulder H and adapted to fit in the reduced portion of the bolt is the split bushing I which is of the

same length as the depression. The bushing is straight or of the same diameter from its outer end inward to about its center from which point it tapers to its inner end where it is substantially of the same diameter as the bolt proper. The straight portion of the bushing occupies a place partially within the clip arm while its inner end extends into the bolt passage of the thill arm as clearly illustrated in Fig. 1. The passage in the thill arm is straight for a portion of its length and from this straight portion it tapers to a smaller size while the opposite end of the said opening or passage is straight and of substantially the same diameter as the shackle bolt. As the parts are tightened to position the bushing is drawn into the thill arm with its tapered portion resting in the tapered portion of the thill arm passage while its straight portion occupies as before stated a portion of the space within the clip arm cavity and also the outer end of the thill arm cavity so that the bushing forms a collar which turns freely with the thill arm when the latter is moved upon the bolt.

By means of the adjustment here shown and described it will be seen that the bushing when compressed and forced into the thill arm eye holds the latter in a most firm manner from any displacement whatever. The bushing is preferably formed of tempered copper or other metal least affected by friction so that it adds very materially to the durability of the coupling.

The corners of nut J are preferably rounded particularly so at their inner ends while the clip arm is formed with a slight depression to admit the side of the nut with the rounded edges but which will bind the edges when the nut is forced thereinto, thus forming a very substantial locking device for the nut and effectually preventing its turning, while at the same time the nut is materially braced by engagement with the walls of the said depression.

When the thills are to be positioned the thill arms are simply placed between the clip arms and the bolts with the bushings thereon inserted in the ordinary way of effecting a coupling so that no straining or spring pressing is necessary to effect the engagement. The device is most simple in construction and

its outward appearance suggests the simplest form of coupling, the additional parts forming the subject of the invention being entirely covered from view.

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

1. In an improved thill coupling, the combination of the clip arms, a thill having a tapering bolt passage, a shackle bolt reduced a portion of its length, a longitudinally split bushing of the same length as and confined on said reduced portion and tapering at its inner end where it fits the bolt passage of the thill arm and straight upon its outer portion where it rests in the clip arm, substantially as shown and described.

2. In an improved thill coupling, the combination of the clip arms, a thill arm, a passage in the thill arm which is straight and of different diameters at its opposite ends and tapering between its ends to connect the same, a shackle bolt, and a bushing carried thereby having a tapering end which is adapted to be forced into the tapering depression of the thill arm and which at its outer end rests in the clip arm, substantially as shown and described.

3. In a thill coupling, the combination of the

clip arms, a thill arm having a passage straight at its ends but of different diameters and tapering between said straight portions, a bolt of the same diameter as the smallest diameter of the said arm passage, and a bushing carried by the bolt having a portion of its exterior tapering to fit the tapered portion of the arm passage and straight the balance of its exterior to fit the arm passage at its largest diameter, substantially as shown and described.

4. In a thill coupling, the combination of the clip arms and the thill arm recessed transversely to form substantially a continuous passage which as an entirety is straight at its ends and tapering between its ends, a bolt adjustable longitudinally through the passage and formed straight upon its exterior to conform to the straight portions of the depression, and a tapering transversely compressible bushing confined on the bolt to fit the tapering portion of said passage, substantially as shown and described.

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

THOMAS A. WATROUS.

Witnesses:

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S. D. SLAUSON.