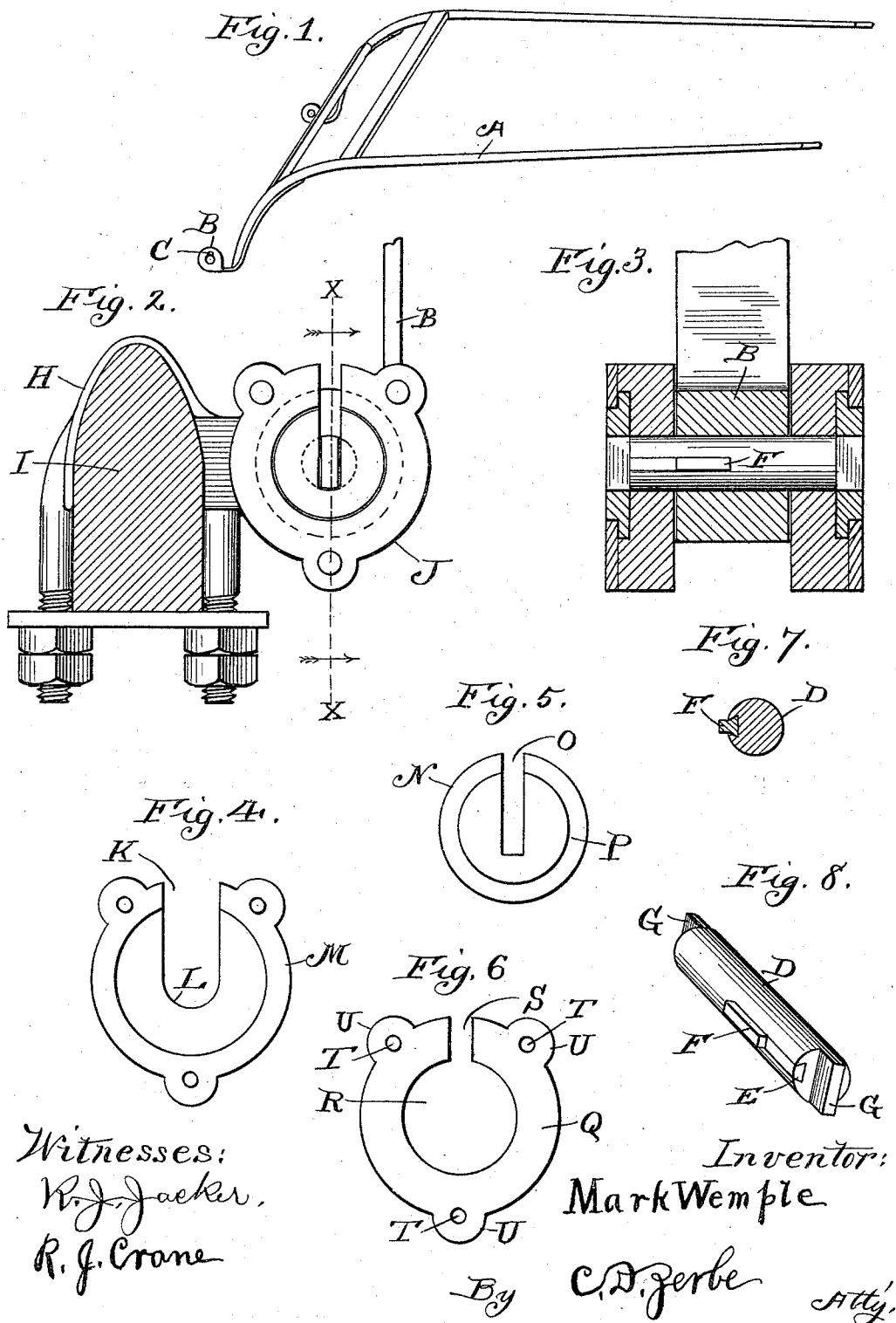


(No Model.)

M. WEMPLE.
THILL COUPLING.

No. 526,473.

Patented Sept. 25, 1894.



UNITED STATES PATENT OFFICE.

MARK WEMPLE, OF CHICAGO, ILLINOIS, ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, OF ONE-HALF TO F. H. VROOMAN.

THILL-COUPLING.

SPECIFICATION forming part of Letters Patent No. 526,473, dated September 25, 1894.

Application filed March 31, 1894. Serial No. 505,891. (No model.)

To all whom it may concern:

Be it known that I, MARK WEMPLE, a citizen of the United States, residing at Chicago, county of Cook and State of Illinois, have invented a certain new and useful Improvement in Thill-Couplings, of which the following is a specification.

My invention relates to improvements in thill couplings, in which the shaft iron is provided with a locking bolt, passing through lateral annular tumblers, the ends of the locking bolt being flattened and placed within vertical slots in the side wing of the forward projecting clip irons and the object of my improvement is to provide an anti-rattling self-locking shaft or pole coupling. I attain this object by the mechanism illustrated in the accompanying drawings, in which—

Figure 1, is a perspective view of a pair of thills showing the thill iron thereon. Fig. 2, is a side view of the thill and coupling; Fig. 3, a transverse vertical section through line X; Fig. 4, a side view of one of the thill iron wings with the external plate removed; Fig. 5, a side view of the plates outwardly from the thill iron to receive the ends of the locking bolt; Fig. 6, a side view of the external plates; Fig. 7, a transverse vertical section of the locking bolt showing the dove tailed key and seat, and Fig. 8, a perspective view of the locking bolt and key.

Similar letters refer to similar parts in the several views.

Fig. 1, shows a pair of thills A provided rearwardly with the thill iron B showing the key seat C therein, which consists of a transverse slot formed in the inner surface.

Fig. 7, shows a transverse view of the locking bolt D provided therein with a dove tailed slot E to receive the key F therein.

Fig. 8, shows this locking bolt and key F. The ends of this locking bolt are flattened or formed with tenons G. This locking bolt D is placed within the thill iron B so that the key F will engage with the slot C within the said thill iron.

The axle clip H and a section of the axle I are shown in Fig. 2. This clip has forwardly the projecting and oppositely disposed wings J designed to receive therein the thill iron B. The upper part of these wings have vertical

recesses K, therein to receive the parts of the locking bolt D projecting beyond the side of the thill iron while the lower parts are formed as a bearing L for the said locking bolt. The outer face of each of these wings J is provided with an annular flange M to receive therein the rotating plate or washer N as shown in Fig. 5. These rotating plates or washers N have a vertical slot O therein to receive the flattened or tenoned end G of the locking bolt. In order that these plates N may be retained within the annular recess at the side of the wings J, I provide an annular groove P around the outer edge of each of these washers N and outwardly therefrom, I provide a retaining plate Q as shown in Fig. 6. This retaining plate has a central opening R and a vertical recess or opening S at the top connecting with this said central opening R. These outwardly retaining plates Q are secured in position by means of screws or rivets through the wings U.

In joining the different parts of my device I first place the key F within the locking bolt and then introduce the said bolt and key F within the thill iron. The outer end of the thills are then raised so that the ends G of the locking bolt D will be in a vertical position when the ends of the locking bolt may be passed downwardly through the slots O and S and the slots K in the wings J. The circular ends of the locking bolt D pass downwardly and rest upon the bearings L, while the thill iron B rests upon the locking bolt and between the wings J. The outer ends of the thills are then lowered to their normal position and in so doing the key K in the locking bolt D causes the plates or washers N at the sides of the wings J to move sufficiently so that the slot O therein is at such an angle with the tenons at the ends of the locking bolt D that they are retained in position and thus prevented from moving upwardly and out of the slots O and S.

As will readily be noticed this form of locking bolt and lateral plates give an unusually large bearing surface for the thill irons and consequently the frictional or bearing surface is so minimized that when once properly adjusted it will form an anti-rattling device and entirely, does away with the usual bolt and

nuts and does not necessitate the use of a wrench when it is desired to detach the thill from the vehicle. All that is necessary to remove the thills is to raise them up to a sufficient angle so as to bring the tenons G vertically and in doing so the bearing plates N at the sides of the wings are rotated so that the slots O are brought up and in conjunction oppositely with the slots S of the outer retaining plates Q when the thill irons and locking bolts may be raised vertically out from between the wings J.

In the same manner when it is desired to attach the thills it is only necessary to raise the outer ends of the thills at a sufficient angle when the ends of the locking bolts may readily be introduced into the vertical slots and as soon as the outer ends of the thills are lowered the thill irons are secured within the bearing of the wings J by means of the locking plates N.

I am aware that wedges, springs and dove-tailed ribs are employed for securing the bolt in thill-couplings. I am also aware that hol-

low cylinders formed with a slot adapted to receive the flat stationary bolt and a slotted revolving barrel to receive the hollow cylinder have been employed; but my device differs essentially from these inasmuch as I construct my thill-coupling with a pair of thin flat disks disposed within the side walls of the coupling, and with which the dove-tailed ends of the bolt through the thill-iron engage.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination of a pair of rotating disks disposed within side wings with the locking bolt and thill-iron substantially as herein set forth.

2. The combination of the thill-iron formed with the slotted eye, with the feathered bolt engaging at the ends with slotted rotating disks substantially as herein set forth.

MARK WEMPLE.

Witnesses:

R. J. CRANE,
W. A. DUTTON.