No. 875,721. PATENTED JAN. 7, 1908.

N. H. MERTES.

THILL COUPLING.

APPLICATION FILED MAR. 29, 1907.

Fig. 1.

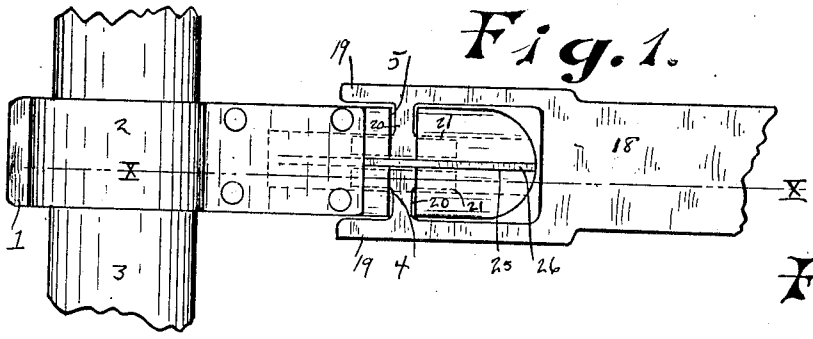


Fig. 3.

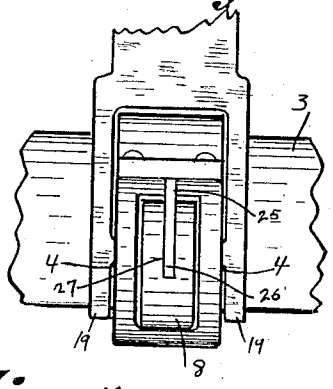


Fig. 2.

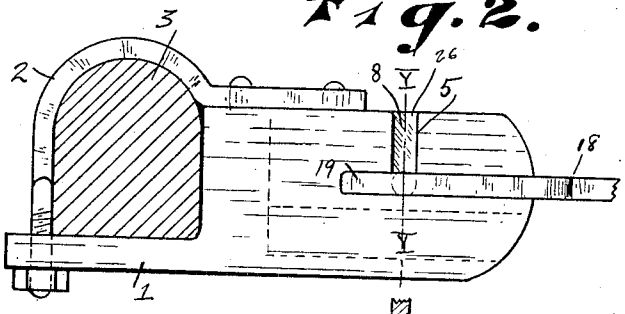


Fig. 4.

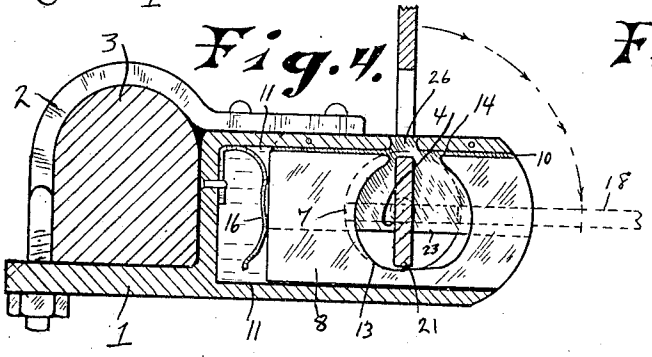


Fig. 5.

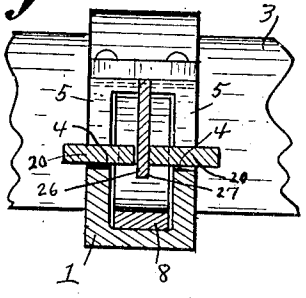
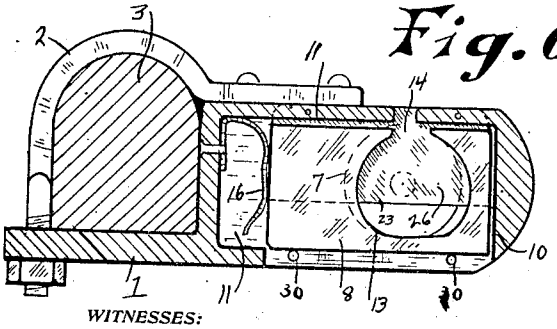


Fig. 6.



WITNESSES:

O. R. Erwin

M. M. Schultz

INVENTOR

Nicholas H. Mertes

BY

Erwin & Wheeler

ATTORNEYS

THE NORRIS PETERS CO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

NICHOLAS H. MERTES, OF HARTFORD, WISCONSIN

THILL-COUPLING.

No. 875,721. Specification of Letters Patent. Patented Jan. 7, 1908.

Application filed March 29, 1907. Serial No. 365,349.

To all whom it may concern:

Be it known that I, NICHOLAS H. MERTES, a citizen of the United States, residing at Hartford, county of Washington, and State of Wisconsin, have invented new and useful Improvements in Thill-Couplings, of which the following is a specification.

My invention relates to improvements in thill couplings.

The object of my invention is to provide a form of thill coupling which will be absolutely safe and which can be readily removed and replaced without the necessity of first removing any other fastenings, bolts or attachments. Also to provide such a coupling with means to prevent rattling without involving the use of rubber cushions or other material less durable than metal.

In the following description reference is had to the accompanying drawings in which Figure 1 is a plan view of my improved coupling with the thill iron in position of use. Fig. 2 is a side view of the same. Fig. 3 is a front view of the same with the thill iron in raised position. Fig. 4 is a sectional view on line x—x of Fig. 1. Fig. 5 is a transverse sectional view drawn vertically through the trunnion axis. Fig. 6 is a view similar to Fig. 4 showing a modified form of construction.

Like parts are identified by the same reference characters throughout the several views.

The coupling bracket 1 is provided with a yoke 2 of ordinary type adapted to engage the axle bar 3, and the forwardly projecting portion of the bracket is provided with trunnion bearings 4 for the thill iron. Slot 5 extends upwardly from these trunnion bearings to the top of the bracket to allow the trunnions to be manipulated into position in the bearings. The bracket is provided with an interior cylindrical cavity 7 having its axis substantially co-incident with that of the trunnion bearings, and a centrally located slide 8 extends from front to rear across the cavity, with its ends resting in suitable slotted guide ways 10 and 11 in the front and rear walls of the cavity respectively. This slide 8 is provided with a generally circular aperture 13, corresponding with the cavity 7 and having an opening 14 leading therefrom through the top wall, this opening being considerably wider than the slot 5 so as to permit a degree of movement to the slide 8 without having the opening 14 pass out of registry with the slot 5. The slide 8 is seated against a spring 16 at the rear end of the guide way 11 and this spring is adapted to push the slide forwardly for a short distance into the guide way 10, the rear portion of the opening 14 in the slide being in registry with slot 5 as clearly shown in Fig. 4.

The thill iron shank 18 is provided with forked arms 19 which straddle the coupling bracket and are provided with inwardly projecting members comprising trunnions 20 having cross heads 21 at their inner ends which project in lines substantially parallel to the fork arms 19. When the thill iron is raised substantially to an upright position, these cross heads and trunnions may be entered in the slot 5 and passed downwardly therein until the trunnions rest in the bearings 4, the cross heads then occupying a position in the aperture 13 of the slide as shown in Fig. 4. The thill iron may then be swung to a horizontally position as shown in Figs. 1 and 2, when the cross heads will engage the rear wall of the aperture 13 and push the slide backwardly against the spring 16. The reaction of the spring 16 presses the slide against the rear ends of the cross heads and prevents the parts from rattling. The slide and the curved walls of the cavity 7 prevent the thill iron trunnions from lifting when the thill iron is in this position since the cross heads are substantially equal in length to the diameter of the aperture or the cavity 7 and therefore cannot lift therein when horizontally disposed. The cross heads are preferably wider than the slide so as to substantially abut the walls of the slide aperture and of the cavity 7.

The fork arms 19 prevent the thill iron from shifting laterally, these arms being separated at a distance substantially equal to the width of the thill bracket. If desired however, the bracket may be further provided with a centrally disposed, longitudinal slot 25, which receives a plate 26. This plate enters a channel 27 in the slide 8, and is provided with a dowwardly projecting tongue 23 which extends between the cross heads and against which the inner margins of the cross heads are arranged to bear resiliently. With this arrangement the arms 19 may have sufficient spread to remain out of contact with the bracket, and thus be kept from marring it or scraping paint therefrom.

In the construction shown in Fig. 4, the

guide way 11 extends through the front end of the bracket, the slide being inserted at this end. In Fig. 6 the slide is inserted from beneath and held in position by cross pins 30. It will be understood, however, that any suitable means for inserting the slide may be employed. These and other modifications of a mechanical nature will be suggested to the mind of any ordinary mechanic skilled in the art to which this invention pertains. It will also be understood that where the plate 26 is not employed it is immaterial whether the cross heads are separated from each other or formed in a single piece.

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

1. In a coupling of the described class the combination of a supporting bracket, a slide mounted therein and provided with a substantially circular aperture, a coupling member provided with forked arms embracing the bracket and having inwardly projecting trunnions resting in suitable bearings in the bracket,—said trunnions being provided with cross heads adapted to swing in said slide aperture,—and a spring arranged to press the slide against the ends of the cross heads, said bracket and slide being adapted to permit the trunnions and cross heads to be manipulated into and out of position when the forked arms are in a raised position.

2. In a thill coupling, the combination of a bracket provided with a cross slot terminating in a trunnion bearing at the base of the slot, a thill iron provided with a trunnion having a rearwardly projecting member adapted to enter the cross slot at one side of the bearing, a slide mounted in the bracket across the plane of said slot and provided with an opening adapted to receive said member,—said opening being adapted to permit the member to swing to a position substantially at right angles to the slot, and said member being adapted to substantially fit the opening in such position, together with means for pressing the slide resiliently against said member.

3. In a coupling of the described class, the combination of a supporting bracket provided with an open cross slot extending downwardly from its upper surface, a centrally disposed slide mounted in suitable guide ways in said bracket and provided with an aperture opening through the top of the slide co-incidently with said slot and of greater width than the slot, a spring adapted to move the slide forwardly, a thill iron having trunnions adapted to enter said slot, and projections on the thill iron arranged, in one position of adjustment, to enter the aperture in the slide, and in another position to push the slide backwardly against the tension of said spring.

4. In a coupling of the described class, the combination of a supporting bracket provided with an open cross slot extending downwardly from its upper surface, a centrally disposed slide mounted in suitable guide ways in said bracket and provided with an aperture opening through the top of the slide co-incidently with said slot and of greater width than the slot, a spring adapted to move the slide forwardly, a thill iron having trunnions adapted to enter said slot, and projections on the thill iron, arranged, in one position of adjustment, to enter the aperture in the slide, and in another position to push the slide backwardly against the tension of said spring,—said bracket having a plate fitting a recess in said slide and extending between the projections, whereby they are prevented from shifting laterally.

5. In a coupling of the described class, the combination of a supporting bracket provided with an open cross slot extending downwardly from its upper surface, a centrally disposed slide mounted in suitable guide ways in said bracket and provided with an aperture of a generally circular form open at the upper side through the top of the slide, a spring adapted to move the slide forwardly to a position with the slide opening coincident with said slot, a thill iron provided with a member, adapted, when in one position of adjustment, to enter said slot and slide aperture,—said member being in length substantially equal to the diameter of the slide aperture and adapted to extend across the plane of the slot when the thill iron is in normal position of use, and said thill iron having trunnions adapted to rest at the base of the slot when the thill iron is in such position.

6. In a coupling of the described class, the combination of a supporting bracket provided with an open cross slot extending downwardly from its upper surface, and leading to an interior cylindrical cavity, a slide extending across said cavity and provided with an aperture of substantially the same diameter, opening through the top of the slide co-incidently with the cross slot, a spring adapted to move said slide forwardly with the slide aperture partially out of registry with said cavity, and a thill iron provided with trunnions adapted to enter said cross slot, and said trunnions having cross heads arranged to enter the slot in one position of adjustment and to extend across the cavity and the plane of the slot in another position of adjustment, with its ends substantially abutting the front and rear walls of the cavity and of the slide aperture, whereby the slide is forced backwardly against the tension of the spring.

7. In a coupling of the described class, the combination of a supporting bracket provided with an open cross slot extending downwardly from its upper surface and leading to

an interior cavity having curved front and rear walls, a slide mounted in said bracket and provided with an aperture substantially equal to the diameter of the cavity and having curved front and rear walls; a spring arranged to move said slide to a position with the aperture partially out of registry with the cavity, and a thill iron provided with a member adapted to enter the cavity and extending across the cavity with its ends substantially abutting the front and rear walls of the cavity and slide aperture, when the thill iron is in normal position, whereby the slide is moved against the tension of said spring to bring the aperture into registry with the cavity,—said thill iron member being of less thickness than the width of the slot and adapted to move into and out of the same when the thill iron is in a raised position.

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

NICHOLAS H. MERTES.

Witnesses:
H. A. SAWYER,
AGATHA DAPP.