

(No Model.)

F. W. WARNER.
THILL COUPLING.

No. 550,305.

Patented Nov. 26, 1895.

Fig: 1.

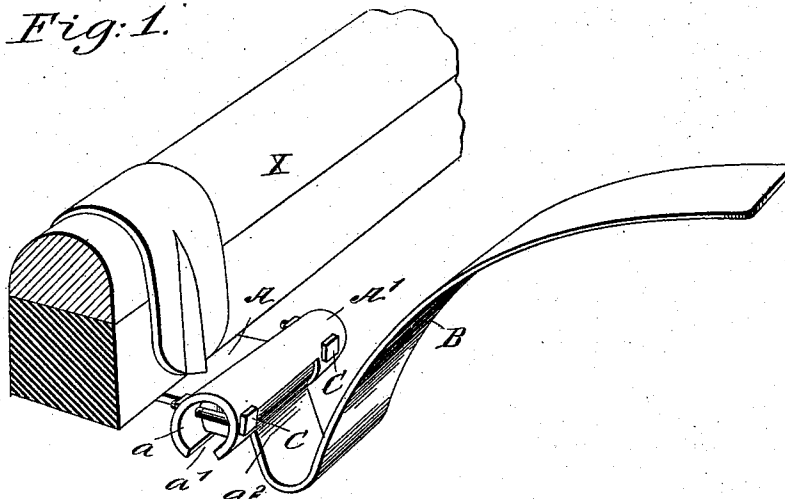


Fig: 2.

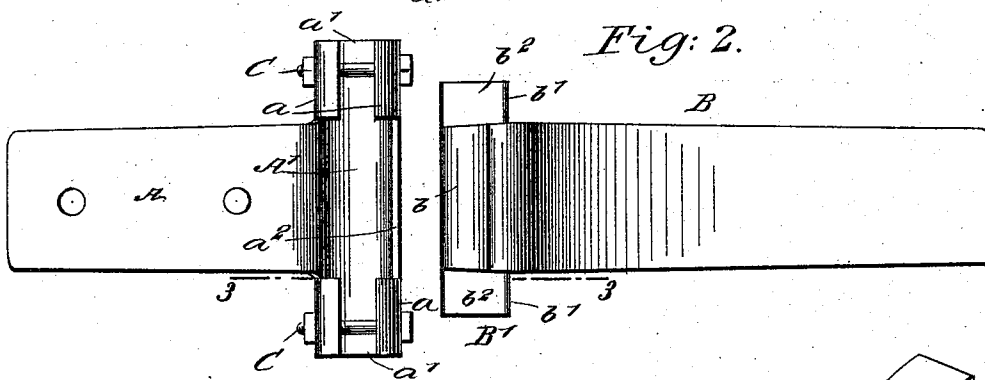


Fig: 4.

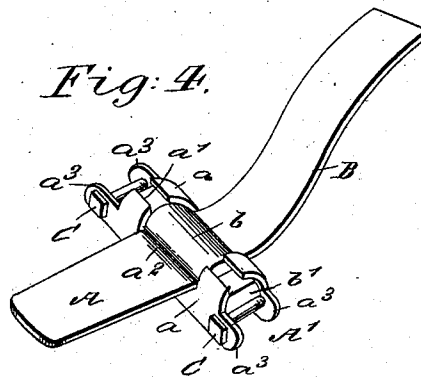
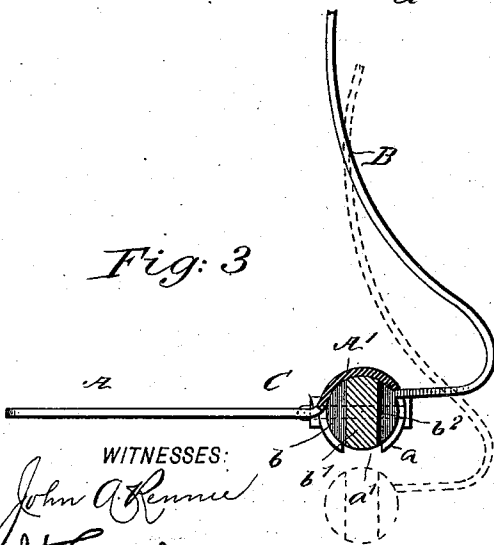


Fig: 3.



WITNESSES:

John A. Renner
J. H. Caplinger

INVENTOR

F. W. Warner

BY

Munn & Co

ATTORNEYS.

UNITED STATES PATENT OFFICE.

FRANK W. WARNER, OF ANGELICA, NEW YORK, ASSIGNOR OF ONE-HALF
TO ROBERT A. MACKIE, OF ELDRED, PENNSYLVANIA.

THILL-COUPLING.

SPECIFICATION forming part of Letters Patent No. 550,305, dated November 26, 1895.

Application filed December 8, 1894. Serial No. 531,231. (No model.)

To all whom it may concern:

Be it known that I, FRANK W. WARNER, a citizen of the United States, residing at Angelica, in the county of Allegany and State of New York, have invented certain Improvements in Thill-Couplings, of which the following is a full, clear, and exact description.

This invention relates to certain improvements in thill-couplings, and has for its object to provide a device of this character of a simple, durable, and inexpensive construction which shall present certain features of novelty over other similar couplings heretofore in use, all as will be hereinafter fully set forth.

The novel features of the invention will be carefully defined in the claims.

In order that my improvements may be the better understood, I have illustrated in the accompanying drawings a thill-coupling embodying my invention, in which—

Figure 1 is a perspective view of a thill-coupling in the preferred form, and Fig. 2 is an under side plan view, showing the parts of the coupling detached. Fig. 3 is a sectional view taken along the plane indicated by the line 3 3 in Fig. 2, but showing the position of the parts when they are to be coupled together or uncoupled; and Fig. 4 is a perspective view similar to Fig. 1, but showing a slightly-modified form of the coupling.

Similar letters of reference indicate corresponding parts in all the figures.

In the drawings, A represents the clip-plate having the usual or any preferred means of attachment to the axle X and provided at its projecting front end with a transverse socket A', and B represents the thill or shaft iron having a transverse shank B' at its end adapted to fit in the said transverse socket in the clip-plate A, as shown in the drawings.

In carrying out my invention the clip-plate A is formed from a single piece or blank of sheet metal of sufficient strength, having one end of greater width than the other and provided at its opposite sides with oppositely-arranged and perforated wings or extensions a a, and said wider portion of the blank is then bent to a semicircular form, (seen in Fig. 3,) the wings a being also similarly bent, whereby the transverse socket A' is formed,

having a slot extending along its entire length, the end portions a' of said slot being of less width than the central or body portion a² thereof, as shown in Fig. 2. The shank B' is formed with a central cylindrical body b of a diameter adapted to fit snugly in the socket A' and is provided at each end of said body with an ear or lug b of a width equal to that of the body, but cut away or flattened at its sides, as seen at b², so as to be of a thickness adapted to be entered in the reduced end portions a' of the slot in the socket A'. The clip-plate A thus formed is secured in place on the axle in such a manner that the slotted side of the socket A' will be downward, as seen in Fig. 1, whereby there will be less liability of the socket becoming clogged or filled with dirt and dust, and in effecting the coupling the shafts are raised to a vertical or nearly vertical position with the shank of the thill-iron directly under the slot in the socket, as indicated in dotted lines in Fig. 3, and said shank is then inserted in the socket and the shafts lowered to their proper horizontal position, whereupon they will be securely held in place by the turning of the shank in the socket.

In order to strengthen the clip-plate and permit of adjusting the diameter of the socket A' to a limited extent to take up looseness and prevent rattling, I form said socket of a length greater than the length of the shank B' of the thill-iron and provide screw-bolts C in the perforations in the wings a of the socket, whereby said wings may be drawn together or toward one another, and said bolts will usually be, as shown in Fig. 1, so arranged as to bear on the ends of the reduced portion b' of the shank B' when the same is in socket A', whereby the shank will be held against longitudinal movement in the socket.

The coupling illustrated in Fig. 4 is substantially identical with that above described, except that the socket A' is of a length equal to the shank B', and the wings a thereof are provided at the ends of the socket with perforated oppositely-arranged extensions a³ to receive bolts C.

The thill-coupling constructed as above described is extremely inexpensive, light, and

strong, and owing to the feature of adjustability is much more durable than ordinary forms of couplings. It will be understood, however, that some change may be made therein without material departure from the spirit of the invention, and therefore I do not wish to be understood as limiting myself to the precise form shown.

The coupling, as above described, permits the thills to be detached and replaced by a pole without the removal of any nuts or bolts.

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

1. In a thill coupling, the combination of a clip plate having a socket arranged transversely at its end, and having wings at opposite sides of the ends of said sockets, a shank adapted to enter the socket, and means for drawing said wings toward one another to reduce the diameter of the socket, substantially as set forth.

2. In a thill coupling, the combination of a clip-plate having a transverse longitudinally slotted socket formed therein, a thill-iron

having a shank adapted to be arranged in said socket, and screw bolts arranged across the socket at the ends of said shank, substantially as set forth.

3. In a thill coupling, the combination of a clip-plate having a transverse longitudinally slotted socket formed therein, a thill-iron having a shank adapted to be arranged in said socket, and screw bolts arranged across the ends of the socket and adapted to bear on the ends of said shank when the same is in the socket, whereby the shank is held against longitudinal movement.

4. A thill clip-plate formed of a single piece of sheet metal having one end of greater width than the other and provided at opposite sides of said wider end with oppositely-arranged wings, said wider portion being bent to form a socket and said wings being oppositely perforated, substantially as set forth.

FRANK W. WARNER.

Witnesses:

D. P. RICHARDSON,
FRED A. ROBBINS.