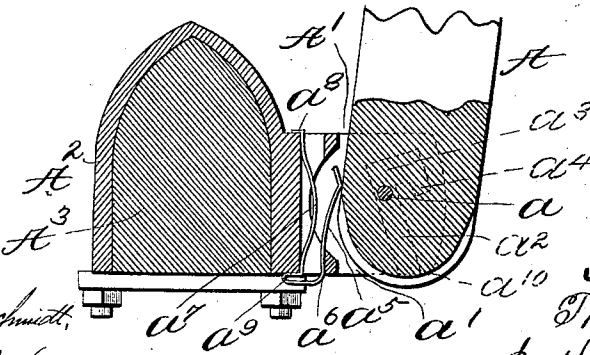
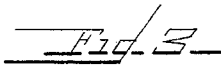
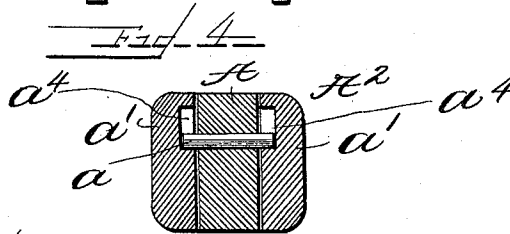
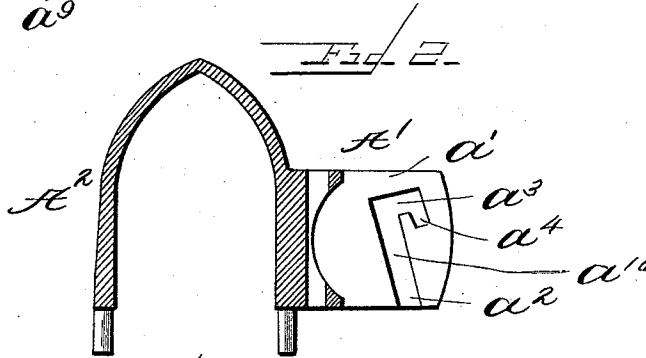
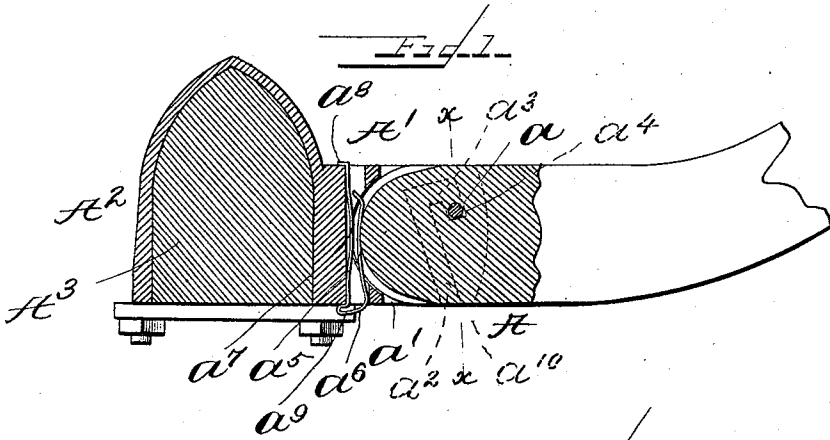


(No Model.)

I. N. BOWEN & T. TROXEL.
THILL COUPLING.

No. 529,825.

Patented Nov. 27, 1894.



Witnesses

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UNITED STATES PATENT OFFICE.

ISAAC N. BOWEN AND THOMAS TROXEL, OF CHARITON, IOWA.

THILL-COUPLING.

SPECIFICATION forming part of Letters Patent No. 529,825, dated November 27, 1894.

Application filed May 10, 1894. Serial No. 510,711. (No model.)

To all whom it may concern:

Be it known that we, ISAAC N. BOWEN and THOMAS TROXEL, citizens of the United States, residing at Chariton, in the county of Lucas and State of Iowa, have invented certain new and useful Improvements in Thill-Couplings; and we 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.

Our invention relates to thill couplings generally and has for its object the improvement upon the construction of the same to make a device that can be easily attached and detached, that will form a flexible joint, when attached together, and that can be easily repaired when the parts become worn.

The invention consists of constructions and combinations whereby the objects are attained, all as will hereinafter be set forth in the specification and pointed out in the claim reference being had to the accompanying drawings, in which—

Figure 1, represents a longitudinal section; Fig. 2, a section of the coupling; Fig. 3, a section showing the shafts in position for removal from the coupling; Fig. 4, a section on line $x-x$ of Fig. 1.

A, represents the thill or shaft; A', the coupling; A², the clip; and A³, the axle to which the coupling is secured by the clip in the usual way. The thill is provided on its end with a transverse pin a which engages with the coupling. The coupling is provided with two forwardly projecting arms a' a' having upon their inner faces guide grooves a^2 a^2 for the pin a of the thill. These grooves a^2 extend from the bottom upward and inward to near the top of the arm and then extend forward to a certain point and then downward a short distance. The projecting ends of the pin a enter the bottom of these grooves and are raised until they can enter

the horizontal extension a^3 when they are brought forward and dropped into the front downward extension a^4 where they are held in place by the leaf a^5 of the anti-rattle spring a^5 which rests upon or against the rear end of the thill. This end of the thill is rounded and provided with a groove a^7 , for the leaf a^5 of the spring, which is thereby held against lateral movement and also acts as an anti rattler. The spring a^5 is also provided with a vertical leaf a^7 provided with a lip a^8 which overlaps the top of the coupling, and with the bent part a^9 at the lower end holds the spring against vertical movement when the thill is moved up and down.

If it be desired to remove the thill from the coupling the thill is raised to near a vertical position. It is then lifted in the coupling until the pin is opposite the horizontal extension, when it is pressed back against the leaf a^5 until the pin is over the outlet passage a^{10} . The thill is then pressed downward until the pin makes its exit out of the groove thus releasing the thill from the coupling. To attach the thill the reverse movement to that above described is performed, the leaf a^7 , however, assisting instead of resisting the passage of the pin through the horizontal part of the groove. The advantages of this construction are manifold. By making the grooves extend only part way into the arms the pin is protected from knocks that it would otherwise have if inserted through the arms. Fastening devices such as screws are dispensed with without making the pin an integral part of the thill, thus obviating the objections so common where bolts and nuts are used. If the pin becomes worn it can be easily and cheaply replaced by a new one being inserted in place of the old one by simply detaching the thill from the coupling in the manner above described and knocking out the old pin. By closing the upper part of the grooves in the arms dust is more easily

kept out of said grooves and they are less liable to become clogged with dirt or other matter.

What we claim as new is—

- 5 In a thill coupling the combination of the projecting arms provided with grooves beginning at the under side of the projection slanting upward and inward, then forward and then downward, a thill having a pin which
10 rests in the forward downward extension of the groove, and a spring for holding the thill against rattling.

In testimony whereof we affix our signatures in presence of two witnesses.

I. N. BOWEN.

THOMAS TROXEL.

Witnesses to the signature of I. N. Bowen:

W. G. CURTIS,

F. M. COFFMAN.

Witnesses to the signature of Thomas Troxel:

J. Z. ANDERSON,

SIMON FISHER.