C. W. H. DELANO & J. F. REINER.

Thill-Couplings.

No. 150,300. Patented April 28, 1874.

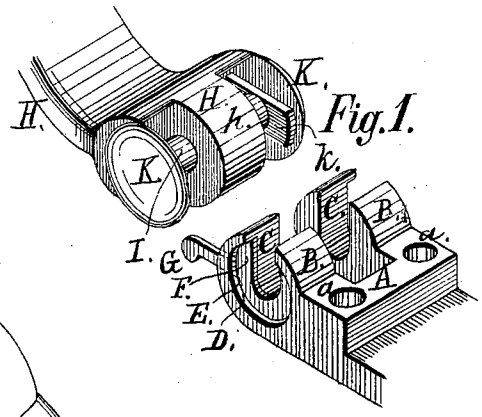


Fig. 1.

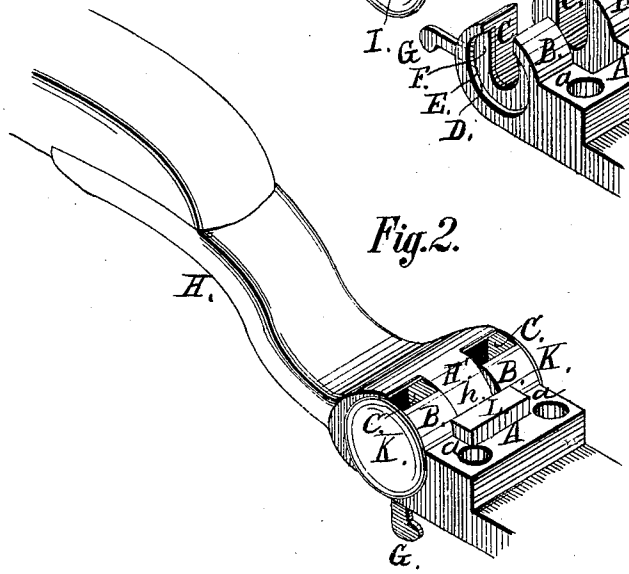
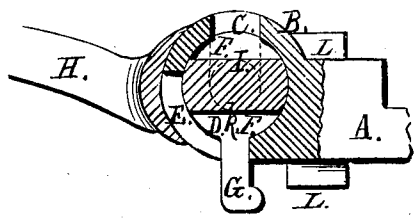


Fig. 2.

Fig. 3.



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UNITED STATES PATENT OFFICE.

CHARLES W. H. DELANO, OF CEDAR RAPIDS, AND JOHN F. REINER, OF COLUMBUS CITY, IOWA.

IMPROVEMENT IN THILL-COUPLINGS.

Specification forming part of Letters Patent No. **150,300**, dated April 28, 1874; application filed September 24, 1873.

To all whom it may concern:

Be it known that we, CHARLES W. H. DELANO, of Cedar Rapids, Linn county, Iowa, and JOHN F. REINER, of Columbus City, Louisa county, Iowa, have invented an Improvement in Thill-Couplings, of which the following is a specification:

This improvement relates to that class of thill-couplings in which the parts may be connected and disconnected without the use of any tool, and in which there is no small detachable part, such as the bolts and nuts of the ordinary couplings.

In this coupling the pivot-pin is attached firmly to one part, (the shaft-strap,) and drops vertically into the sockets of the other part, (the clip,) which are made open at top to receive it.

When the shafts (or tongue, as the case may be) are vertical the pivot-pin may be dropped into the sockets, but when the shafts are in any other position they can be neither coupled to nor uncoupled from the vehicle because of elongated lugs at the ends of the pin which can only be made to enter the mouths of the sockets when the shafts are vertical. When the shafts are in working condition the lugs on the pin turn in recesses at the sides of the socket-lugs and prevent the pin being raised from the sockets. A safety-lock, consisting of a disk having an open recess to receive the socket, is placed in one of the side recesses of the socket-lug, and may be so turned that one of its horns closes the mouth of the socket to lock the pin therein.

Figure 1 is a perspective view with the parts detached. Fig. 2 is a perspective view with the parts coupled together. Fig. 3 is partly in section and partly in side view, and shows the parts coupled.

A is the clip-plate which extends beneath the axle, and is secured to it by a clip in the usual manner. The plate A has holes *a* for the clip-screws. B B are lugs or ears on the clip-plate, containing open-topped sockets C C to receive the pivot-pin of the strap (or shaft) part of the coupling. The outer side of each socket-ear, B, has a circular recess, D. One (or both) of the ears has a slot, E, to receive the lever G of the turning lock-piece, which has a flat circular head resting in the bottom of the recess D and horns F F, between which is a gap formed like the socket C, so that when the lock is in the position shown in Fig. 1 it will allow the pivot-pin to enter the sockets from above; but when it is turned, as shown in Figs. 2 and 3, it will prevent the parts from becoming detached, (even when the shafts are vertical,) as one of its horns, F, will then extend across the mouth of the socket. H is the strap attached to the shafts or tongue hounds and ending at the rear end in a lug, H′, from whose sides extends the pivot-pin. This pivot-pin has heads K K, which cover the outer sides of the ears B B, and upon the inner sides of the heads K K are lugs *k k*, whose length is equal to the diameter of the recesses D D and whose breadth equals the diameter of the pivot-pin I, and consequently these lugs have the same width as the mouths of the sockets, and may be passed endwise through the same to enter the recesses D D. When the pivot-pin is in its bearings in the sockets the lugs *k k* may turn in the recesses with the vertical movements of the shafts, but the curved ends of the lugs rest against the edges of the recesses and prevent the pin rising in the sockets, except when the shafts and lugs are vertical. When the pivot-pin is inserted in the sockets the locking-piece F F G is as shown in Fig. 1; and after the pin is inserted the ends of the shafts are turned down and the shoulders of the part H engage the lever G and turn the lock into the position shown in Figs. 2 and 3, so as to lock the pin in the sockets. L is a block of rubber bearing against the lug H′ to prevent rattling. This lug is somewhat flattened at *h*, so that it will not bear against the block L when the shafts are raised up vertically for uncoupling.

We claim—

1. The part A, having open sockets C C and recesses D D, in combination with the part H, having pivot-pin I, with heads K K and lugs *k k*, substantially as and for purpose set forth.

2. In combination with the ears B, sockets C, recess D, and pin I, the lock F F G, substantially as and for the purpose set forth.

CHAS. W. H. DELANO.
JOHN F. REINER.

Witnesses:
U. C. BLAKE,
CHAS. H. MILLAR.