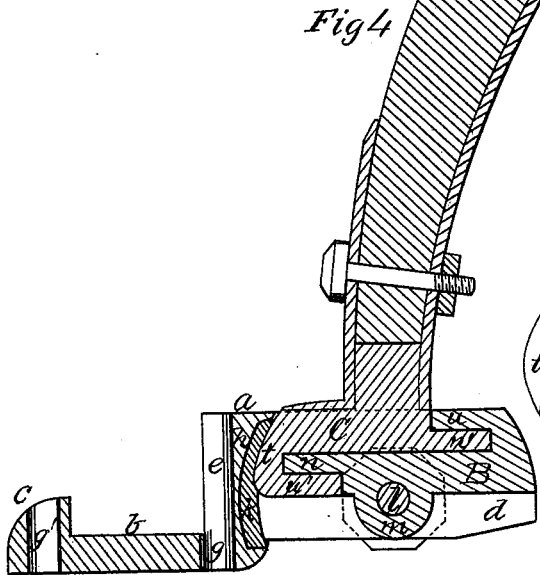
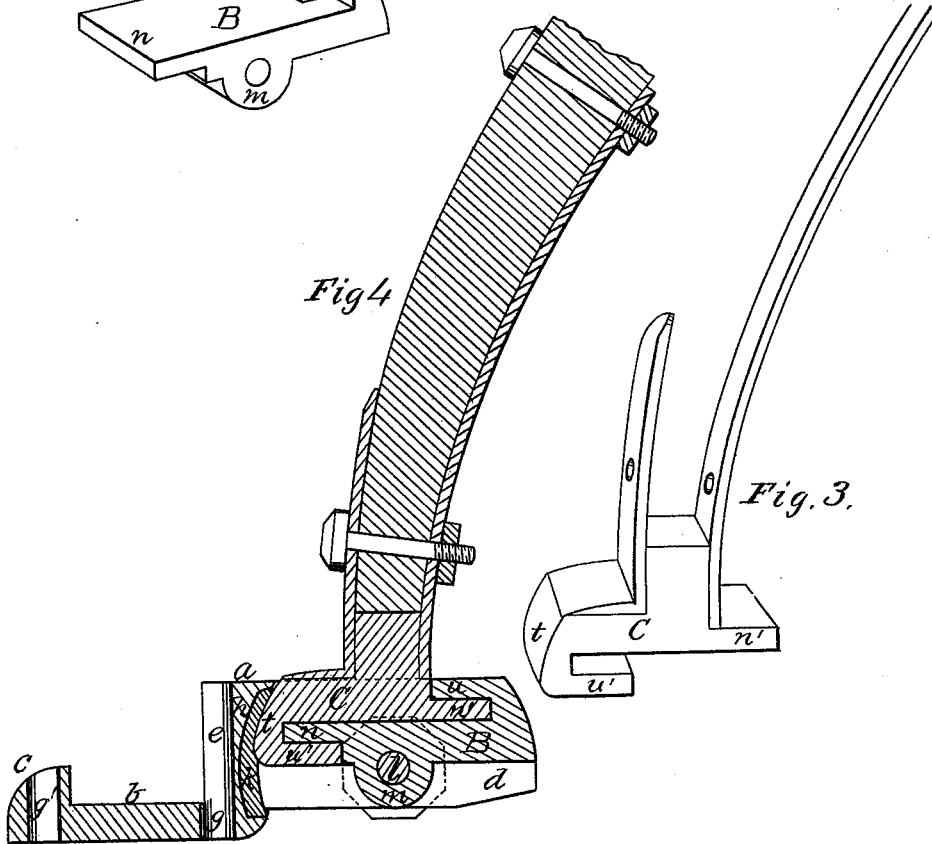
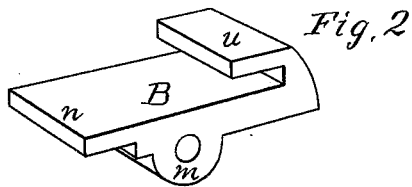
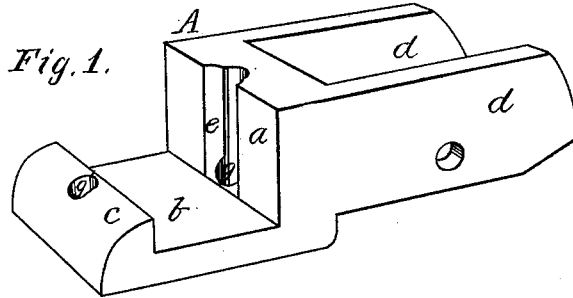


L. HARRIS.  
Thill-Coupling

No. 213,416

Patented Mar. 18, 1879.



WITNESSES  
*Villette Anderson*  
*Walter C. Masi*

INVENTOR  
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*by E. W. Anderson,*

ATTORNEY

# UNITED STATES PATENT OFFICE.

LEVI HARRIS, OF KALAMAZOO, MICHIGAN.

## IMPROVEMENT IN THILL-COUPINGS.

Specification forming part of Letters Patent No. **213,416**, dated March 18, 1879; application filed February 10, 1879.

*To all whom it may concern:*

Be it known that I, LEVI HARRIS, of Kalamazoo, in the county of Kalamazoo and State of Michigan, have invented a new and valuable Improvement in Thill-Couplings; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a representation of a perspective view of the shackle. Fig. 2 is a perspective view of the rotary hook. Fig. 3 is a perspective view of the thill-hook. Fig. 4 is a vertical longitudinal section of the parts connected.

This invention has relation to thill-couplings; and it consists in the construction and novel arrangement of the shackle, the revolving hook journaled therein, and the hooked end of a thill having a sliding connection with said revolving hook, and working against a packing of rubber or other material sealed in a recess in said shackle, all as hereinafter shown and described.

In the accompanying drawings, the letter A designates the shackle, consisting of a partition-body, *a*, having in rear a horizontal extension, *b*, terminating in an offset or lip, *c*, on its upper side, forming a seat or chair for the axle, and in front the parallel vertical ears or extensions *d*, between which the end of the thill is received.

In the rear face of the partition *a* is a groove, *e*, which terminates below in a hole, *g*, through the plate, and serves to receive the front branch of the clip whereby the shackle is attached to the axle, the rear branch passing through an aperture, *g'*, in the offset *c*. In the front of this partition is formed a recess, *h*, for the reception of a packing, *k*, of rubber or other suitable substance.

The ears or extensions *d* are perforated for the passage of the pivot-bolt *l*, whereby the revolving hook B is connected between said extensions. This hook consists of an elongated plate, having on its under side a hollow rib or lug, *m*, through which the pivot-bolt passes, being secured on the outside of one of the plates by a nut.

The rear end of the hook-plate is fashioned into a tongue, *n*, while the other end is provided with a reverse flange, *u*, on its upper

side, parallel with the body of the plate, and forming a hook.

To the end of the thill is attached, by suitable straps and bolts, the thill-hook C, which extends in a transverse direction with reference to the thill end, and is provided with a tongue, *n'*, and a similar and under flange or hook, *u'*, similar to those of the revolving hook-plate, and connecting therewith by a sliding movement, forming a double lock.

The exterior of the rear or hook end of the thill-hook is rounded, as indicated at *t*, to form a bearing, which works against the packing in the rear of the shackle, the sliding nature of the connection between the revolving hook and the thill-hook allowing the latter to work against this packing freely, while the abutment formed by the shackle-partition in which the packing is seated prevents the hook-lock from becoming disconnected.

When it is desired to disconnect the thills they are depressed until the rear ends of the thill-hooks rise above the shackle-plate, when these hooks can, by a backward and upward movement, be slid out of connection with the revolving hooks, and the thills removed.

I am aware that a thill-hook has been connected with a rotary shackle-bearing, said hook extending around the same above and below the pivot-joint; and I do not claim such invention.

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

1. A thill-coupling, consisting of a shackle, having in rear, between the supporting-ears, a packing, a revolving hook, connected to said ears by an under pivot, and a thill-hook, connecting with said revolving hook entirely above its pivot by a sliding movement and having a rear bearing against said packing, substantially as specified.

2. The combination, with the thill-hook C, having at opposite ends a tongue and hook, of the pivoted shackle-hook B, having at its ends a hook and tongue, respectively, engaging by a sliding movement with the tongue and hook of the thill-hook, and forming a double lock, substantially as specified.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

Witnesses: LEVI HARRIS.  
HENRY C. BRIGGS,  
L. F. H. FINNEY.