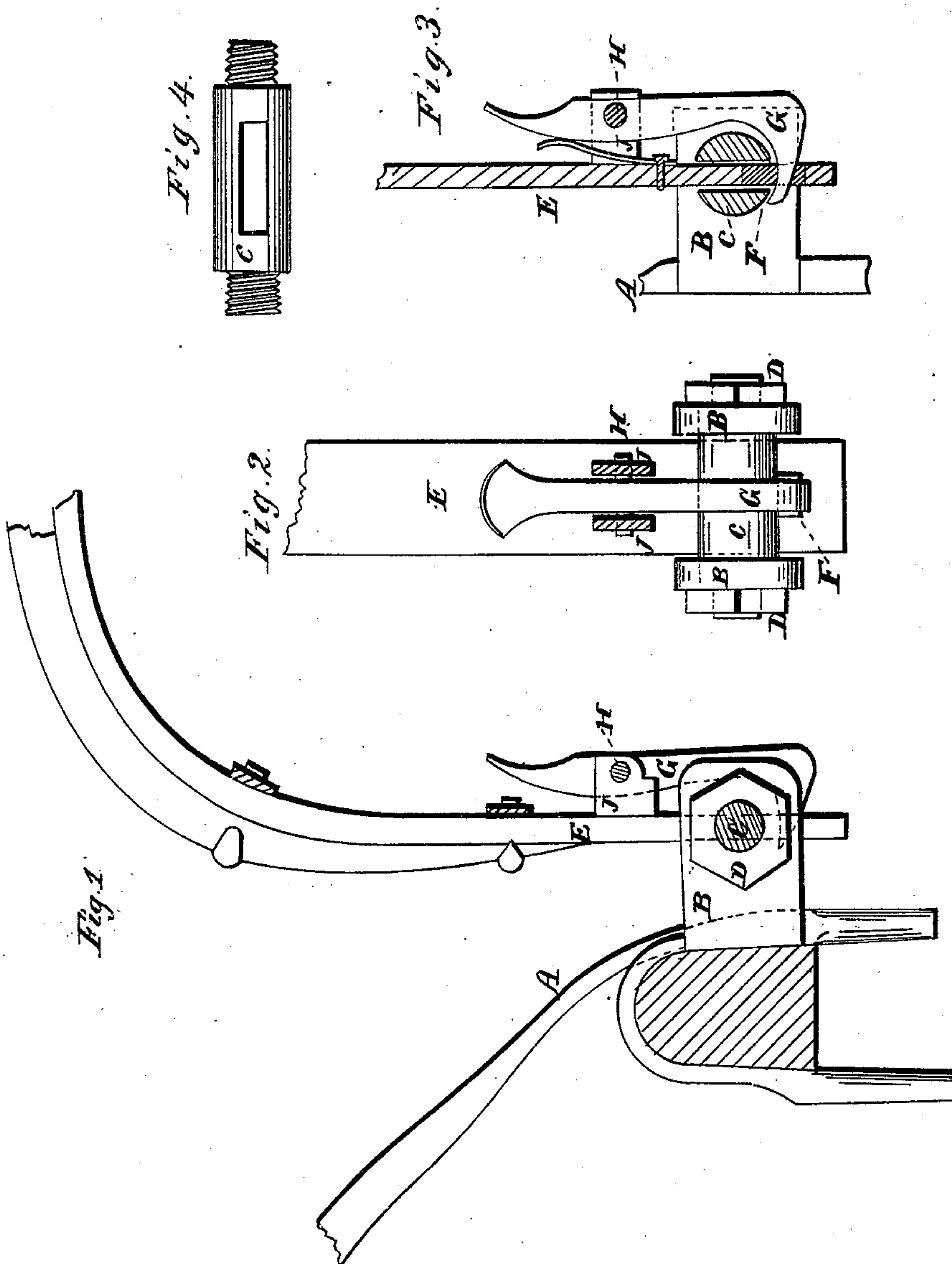


L. DERBY.
Thill Coupling.

No. 77,804.

Patented May 12, 1868.



Witnesses.
Charles L. Parry
Franklin Barrett

Inventor.
Lyman Derby

United States Patent Office.

LYMAN DERBY, OF NEW YORK, N. Y.

Letters Patent No. 77,804, dated May 12, 1868.

THILL-FASTENERS.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, LYMAN DERBY, of the city, county, and State of New York, have invented certain new and useful Improvements in Thill-Fasteners; and I do hereby declare that the following is a full description of the same.

The nature of my invention consists—

First, in the method of attaching the thills to the clip or jack, by means of a slotted bolt, whereby the thills may be attached to and detached from the coupling with great ease and facility, and, at the same time, making a perfectly non-rattling shaft or thill-shackle.

Second, in combining with the thill-iron and slotted bolt, a spring-latch, whereby the thill-iron is prevented from being drawn from the slot in the bolt, and, at the same time, by its constant tendency to contract on the bolt, take up any possible wear on the thill-iron, and thus keep it always tight in the slotted bolt.

But, to describe my invention more particularly, I will refer to the accompanying drawings, forming a part of this specification, the same letters of reference wherever they occur referring to like parts.

Figure 1 is a side view of the thill-fastener, showing, by the red outline, its mode of attachment to the axle and thill.

Figure 2 is a front view of the thill-fastener.

Figure 3 is a vertical cut section of the same through the line *x x*, fig. 2.

Figure 4 is a detached view of the slotted bolt.

Letter A represents the ordinary clip as usually forged, preparatory to its being bent on the axle, having attached to its front edges ear-pieces, B.

Between these ear-pieces is secured a slotted bolt, C, by means of screw-nuts, D. The diameter of this bolt is about five-eighths of an inch, but may be made either larger or smaller in diameter as required, for heavy or light vehicles, and is also made of uniform diameter throughout its bearings in the ear-pieces, so as to retain the full strength of the bolt to sustain or hold the thills, and, at the same time, to obtain a greater amount of wearing-surface than would be the case if the screw-threads extended through the ear-pieces.

Letter E is the thill-iron, the end of which is made to fit and pass through the slot in the bolt. In the end of the thill-iron is an oblong hole, F, of such length as to extend below the slotted bolt. The object of this oblong hole is to admit of locking the thill-iron to the slotted bolt, by means of a spring-latch, G, attached to the lower side of the thill-iron by a centre-pin, H, between suitable jaws, J.

By this device it will be readily perceived that the thill-iron will be firmly secured to the slotted bolt, and that in the event of any wear in the slot or the end of the thill-iron, so as to admit of the thill-iron working down through the bolt, will be prevented from drawing back again by the action of the wedged-shaped toe of the spring-latch contracting on the bolt through the opening in the end of the thill-iron.

It will thus be seen that the thill-iron becomes self-locked to the clip or axle, and except so far as the slight turning of the slotted bolt in the ear-pieces of the clip, to accommodate the raising and lowering of the outer ends of the thills to attach to the horse, is as rigid and firm as if made of one solid piece of metal.

Having now described my invention, I will proceed to set forth what I claim, and desire to secure by Letters Patent of the United States.

1. I claim the combination of the slotted bolt C with the ear-pieces B, whether attached to the clip A or jack-plate, for securing the clip upon the axle, as sometimes used, for the purposes hereinbefore set forth.
2. I also claim, in combination with the slotted bolt C, the tenoned or wedge-shaped thill-iron E, having an oblong hole, F, in it, substantially as hereinbefore set forth, and for the purposes described.
3. I also claim, in combination with the tenon-shaped thill-iron E, having a slot or hole, F, in it, the spring-latch G, substantially as described and for the purposes set forth.

LYMAN DERBY.

Witnesses:

CHARLES L. BARRITT,
FRANKLIN BARRITT.