

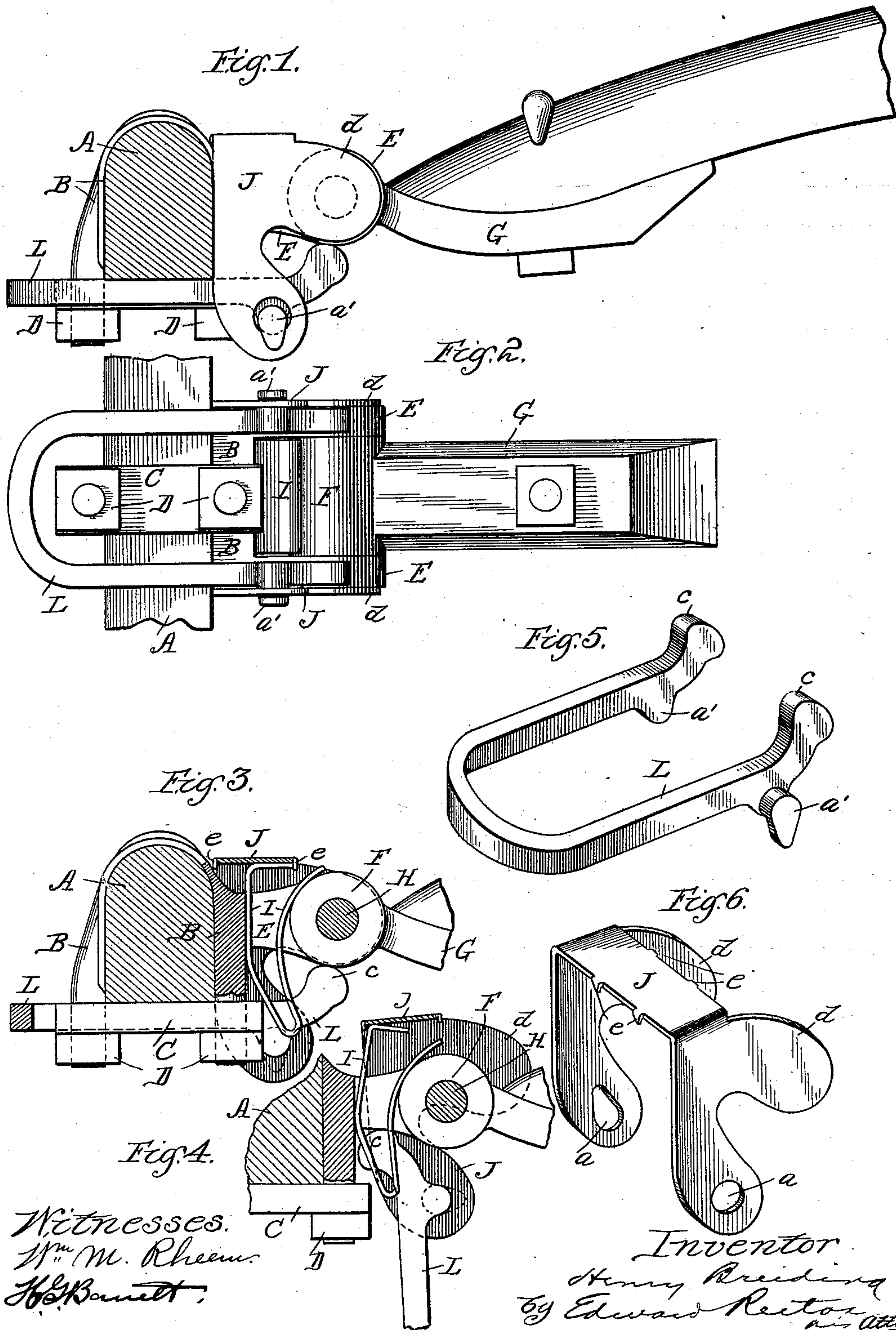
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H. BREIDING.
THILL COUPLING AND ANTIRATTLER.

(Application filed Nov. 30, 1898.)

(No Model.)



Witnesses.
Wm. M. Rheem.
H. G. Bennett.

Inventor
Henry Breiding
by Edward Reitor
his atty.

UNITED STATES PATENT OFFICE.

HENRY BREIDING, OF STERLING, ILLINOIS.

THILL-COUPPLING AND ANTIRATTLER.

SPECIFICATION forming part of Letters Patent No. 628,443, dated July 11, 1899.

Application filed November 30, 1898. Serial No. 697,838. (No model.)

To all whom it may concern:

Be it known that I, HENRY BREIDING, a citizen of the United States, residing at Sterling, in the county of Whiteside, State of Illinois, have invented a certain new and useful Improvement in Thill-Couplings and Antirattler Attachments Therefor, of which the following is a description, reference being had to the accompanying drawings, forming part of this specification.

My invention has for its object the provision of what may be termed a "universal quick-shifting thill-coupling and antirattler," by means of which the thills or pole of a vehicle may be readily connected to and disconnected from its axle, or the one substituted for the other, without the employment of any of the usual tools—such as wrenches, &c.—which have heretofore been necessary for such operations, which may be employed with any of the usual standard couplings, and thus be in that sense capable of universal application, and which shall constitute a simple and highly-efficient antirattler for the coupling when so employed. Its novelty will be hereinafter set forth, and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a side elevation of a thill-coupling with my novel antirattler attachment applied to it, the axle being shown in section; Fig. 2, a bottom plan view of the same; Fig. 3, a vertical section looking at the parts in the same direction as in Fig. 1 and with the parts in normal position for use; Fig. 4, a view corresponding to Fig. 3 with the parts in released position either in the act of applying the attachment to or removing it from the coupling; Fig. 5, a perspective view of the yoke or U-shaped lever for forcing the spring-wedge into and maintaining it in position, and Fig. 6 a perspective view of the strap which coöperates with the lever and spring for such purpose.

The same letters of reference are used to indicate corresponding parts in the several views.

Referring to Figs. 1, 2, and 3, A represents the axle, upon which is secured the usual clip B, the lower extremities of whose opposite ends pass through holes in the clip-bar C and are threaded to receive nuts D, by means of which the clip is clamped upon the axle. Pro-

jecting forwardly from the clip B are the usual side arms or lugs E, between the forward ends of which fits the eye F of the thill-iron G, the parts being coupled together by the pin H, passing through the holes in the front ends of the lugs or arms E and through the eye F of the thill-iron G.

I is a spring-wedge interposed between the forward side of the clip B and the rear side of the eye F of the thill-iron, as shown more particularly in Fig. 3, and consisting in the present instance of a reversely-bent piece of sheet-steel of suitable quality for such purpose. As there shown, this spring-wedge has a vertical rear side to fit against the forward face of the clip B and a curved forward side to fit against the curved surface of the upper rear side of the eye F of the thill-iron, while the top of the wedge consists of the forwardly and horizontally bent upper end of its rear half or arm. Resting upon this flat upper end of the spring-wedge I is the transverse horizontal portion of a yoke-shaped or inverted-U-shaped strap J, whose opposite depending arms embrace between them the forwardly-projecting side arms or lugs E of the clip B and the interposed spring-wedge I and near their lower ends are provided with apertures *a*. Fitting in these apertures *a* in the lower ends of the depending arms of the strap J are studs or trunnions *a'*, projecting from the opposite arms of the yoke or U shaped lever L. (Shown in Fig. 5.) The upturned forward ends *c* of this lever bear against the under sides of the clip-arms or lugs E beneath the axis of the coupling, while the U-shaped body of the lever L extends rearwardly beneath the axle A and is adapted to bear against the under side of the latter and embrace between its opposite arms the clip-bar C and nuts D, as shown in Fig. 2.

Having now explained the construction and arrangement of the several parts the operation of applying and removing the device and its effect when in use may be explained as follows: It will be seen by reference to Figs. 1 and 3 that the fulcrum of the lever L, when in the position there shown, is at the points of contact of its upper forward ends *c* with the under sides of the fixed clip-arms or lugs E, so that the upward pressure of the spring-wedge I exerted against the strap J will press

the rear end of the lever L upward against the bottom of the axle A and cause it to be yieldingly held in such position while the device is in use on the coupling. In this manner and by these means the spring-wedge I is

securely held in the position shown in Fig. 3 and caused to press firmly against the eye F of the thill-iron and prevent any rattling in the coupling.

To disengage and remove the device and permit the coupling to be uncoupled, the rear end of the lever L is forced downward against the resistance of the spring-wedge I and swung forward. The first part of this movement of said lever will necessarily draw the strap J downward slightly beyond normal position, thereby forcing the spring-wedge I still farther downward between the clip B and thill-iron eye F, but before the movement has progressed far the upper forward end c of the lever L will slip rearward along the under sides of the clip-arms E, as shown in Fig. 4, thereby releasing the parts and permitting the spring-wedge I to slip upward, carrying the strap J with it. From the position of the parts shown in Fig. 4 the strap J and lever L may be readily slipped forward over the coupling, permitting the spring-wedge I to be entirely removed, and by disengaging the trunnions a' of the lever L from the apertures in the depending arms of the strap J these two members become disconnected from each other and may be entirely removed and the coupling-pin H be then slipped out of place and the thill uncoupled from the axle.

In reassembling the parts or applying the antirattler attachment to the same or a similar coupling the spring-wedge I will be inserted between the clip B and thill-iron eye F and pressed downward as far as can conveniently be done by hand and the strap J and lever L be placed about the coupling and connected and brought to the position shown in Fig. 4, whereupon by swinging the lower end of the lever L rearward and forcing it upward the strap J will be drawn downward and will force the spring-wedge I down into the position shown in Fig. 3, and as soon as the rear end of the lever L in its rearward and upward movement passes what may be termed for convenience the "dead-center" line of the connected parts the force of the spring I exerted upon it through the connecting-strap J will press it upward against the under side of the axle and yieldingly hold it there.

Instead of the parts of the coupling being connected by a bolt held in place by a nut threaded upon its end, as usual, and requiring the use of wrenches in coupling or uncoupling the parts, the connection in the present instance is simply by a pin H having no head or enlargement at either end and which may therefore be readily slipped out of the coupling when the antirattler attachment is removed to permit disconnection of the coup-

ling. For the purpose of holding the pin in place when the coupling is connected and the antirattler attachment applied to it I provide the side arms of the strap J with forwardly-projecting ears or wings $d d$, which when the parts are in normal position for use fit against the outer faces of the clip-arms E opposite the ends of the coupling-pin H and hold the latter in place. This construction also enables the side arms of the strap J to fit closely against the outer faces of the clip B and its arms E, thereby permitting a compact arrangement of the parts within a minimum width of space. The upper horizontal cross-piece of the strap J is shown provided on its forward and rear edges with depending teeth e , intended to more securely hold the spring-wedge in place and also facilitate the forcing of it into place in the assemblage of the parts.

As will be apparent from the foregoing, when it is desired to uncouple the thills from the axle, as where a pole is to be substituted for thills on the vehicle, the disconnection may be readily effected by hand without the employment of any tools whatever by simply forcing the rear end of the lever downward and forward and disconnecting the parts in the manner explained, and that the coupling of thills or pole to the axle may in like manner be readily effected without the use of any tools by reassembling the parts and forcing the lever rearward and upward to normal position against the under side of the axle in the manner heretofore explained. My device therefore not only obviates the use of wrenches or other tools in effecting these couplings and uncouplings, but enables them to be effected very much more quickly and conveniently than under the old and common method, and when the coupling is completed it is provided with a most efficient and durable antirattler.

So far as I am aware I am the first in the art to employ as part of an antirattler attachment for thill-couplings a spring-wedge adapted to be forced into position or seated between the axle or clip and the eye of the thill-iron in combination with suitable means for seating or forcing such spring into and maintaining it in such position, and my invention in its broader aspect is therefore of corresponding scope, although the particular means which I have devised for use in combination with such spring-wedge are highly advantageous and constitute valuable features of my invention. While I have shown and described the spring-wedge as formed of sheet metal bent into proper shape, it will be apparent that the advantages of my invention may be attained to a greater or less extent by the employment of spring-wedges of other form and material—as, for instance, a wedge of solid rubber suitably shaped for the purpose.

Having thus fully described my invention, I claim—

1. In an antirattler attachment for thill-couplings, the combination of a spring-wedge adapted to be forced into position between

the clip and thill-iron, a U-shaped lever the ends of the arms of which are adapted to fulcrum on the clip-ears or thill-iron, and a U-shaped strap with which said lever is detachably engaged, whereby said lever may be employed to force the wedge into position and be then held by the spring-wedge in position to maintain the wedge in place, substantially as described.

10 2. In an antirattler attachment for thill-couplings, the combination of a spring-wedge adapted to be forced into position between the clip and thill-iron, a U-shaped lever the ends of the arms of which are adapted to fulcrum on the clip-ears or thill-iron, a U-shaped strap having retaining means thereon for said spring-wedge and connected with said lever, whereby said lever may be employed to force the wedge into position and be then held by

the spring-wedge in position to maintain the wedge in place, substantially as described. 20

3. In an antirattler attachment for thill-couplings, the combination of a wedge I of bent spring metal adapted to be forced into position between the clip and thill-iron, a U-shaped lever L, the ends of the arms of which are adapted to fulcrum on the clip-ears or thill-iron, and the U-shaped strap J, provided with the projecting ears d with which strap said lever is detachably engaged, whereby said lever may be employed to force the wedge into position and be there held by the spring-wedge in position to maintain the wedge in place, substantially as described. 25 30

HENRY BREIDING.

Witnesses:

PAUL THOS. GALT,
JOHN D. HARTMAN.