No. 747,874. PATENTED DEC. 22, 1903.

G. H. FERNALD.

THILL COUPLING.

APPLICATION FILED OCT. 16, 1903.

NO MODEL.

Fig. 1

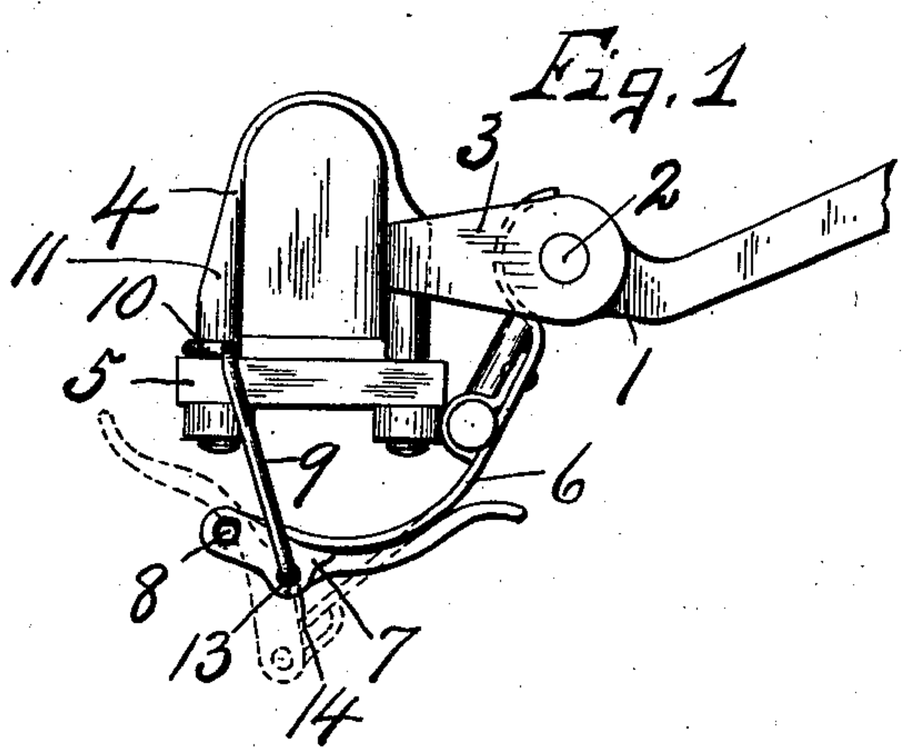


Fig. 2

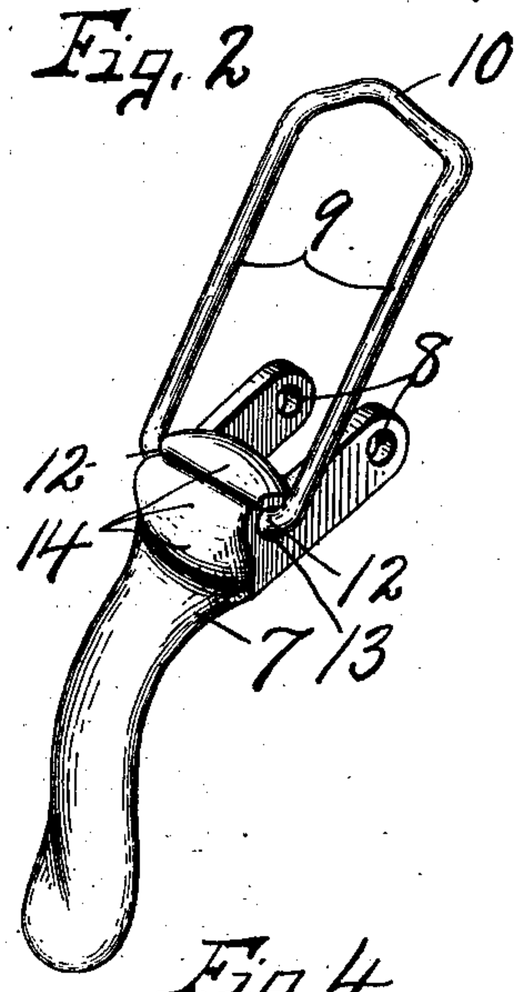


Fig. 3.

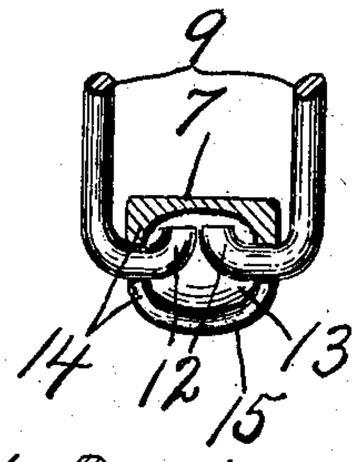


Fig. 6.

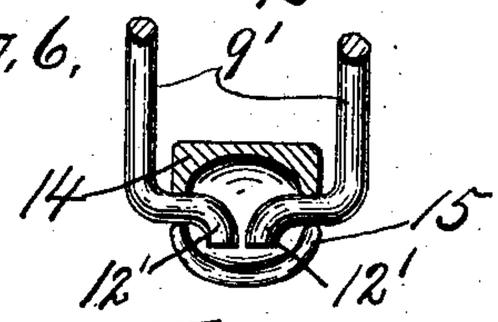


Fig. 4.

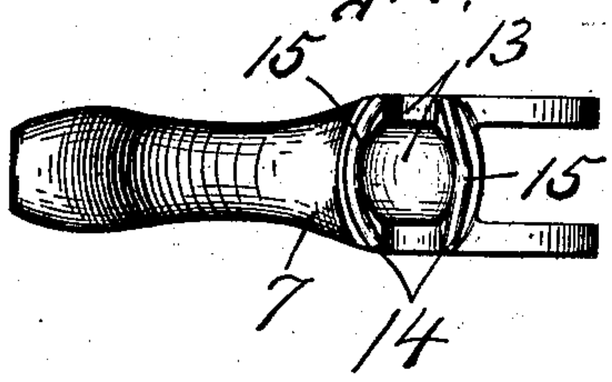
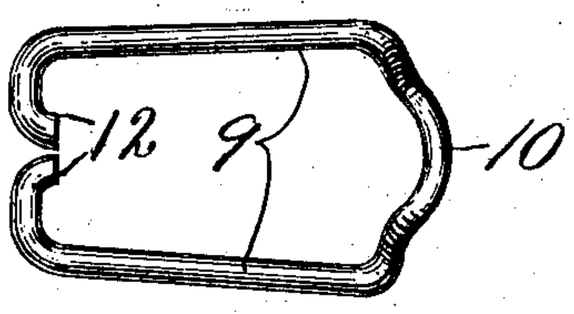


Fig. 5.



WITNESSES:

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No. 747,874. Patented December 22, 1903.

UNITED STATES PATENT OFFICE.

GEORGE H. FERNALD, OF NORTHEAST, PENNSYLVANIA.

THILL-COUPLING.

SPECIFICATION forming part of Letters Patent No. 747,874, dated December 22, 1903.

Application filed October 16, 1903. Serial No. 177,295. (No model.)

To all whom it may concern:

Be it known that I, GEORGE H. FERNALD, of Northeast, in the county of Erie, in the State of Pennsylvania, have invented new and useful Improvements in Thill-Couplings, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

This invention relates to improvements in thill-couplings in which a link and a lever are operatively connected to tension a spring to hold the draft-eye in close contact with the coupling-pin, and thereby prevent rattling of the parts. The link is formed from a single piece of wire or similar material, and its opposite ends are inserted in an aperture in the lever from opposite sides to pivotally connect the two parts together. Heretofore I have relied upon the tension of the arms of the link to hold the ends in the aperture; but I find that when subjected to a severe pull or other strains which would tend to separate the ends of the link said ends would sometimes be drawn from the apertures, and thereby disconnected from the lever.

My object, therefore, is to prevent the accidental disconnection of the link from the lever.

In the drawings, Figure 1 is a side elevation of a thill-coupling embodying the features of my invention. Fig. 2 is a perspective view of the lever and link, but detached from the coupling. Fig. 3 is a sectional view through the lever between the jaws, showing the adjacent ends of the link in place. Figs. 4 and 5 are plan views, respectively, of the lever and link detached, the jaws of the lever which receive the link being shown open. Fig. 6 is a sectional view similar to Fig. 3, showing the end of the link turned outwardly instead of inwardly.

Similar reference characters indicate corresponding parts in all the views.

This coupling comprises, essentially, a draft-eye 1 and a U-shaped coupling-pin 2, having an arm inserted in the draft-eye and apertures in ears 3 of an axle-clip 4, having a clip-plate 5. A spring 6 is mounted on the other arm of the pin 2 and has one end engaged with the rear face of the draft-eye 1 and operates to press it forwardly to take up any lost motion and to prevent rattling of the coupled parts, the part 2 serving the double purpose of a coupling-pin and also of a retaining member for the spring 6. A lever 7 is pivotally connected at 8 to the other end of the spring and is connected to the clip by a link 9, while the front end of the clip-plate limits the rearward swinging movement of the spring-retaining member. This link 9 consists of a single piece of spring-wire which is bent U shape, its intermediate portion being formed with a loop 10, which fits around one of the clip-bolts, as 11, and operatively rests on the top face of the adjacent end of the clip-plate 5, while the opposite arms of the link depend from the clip-plate. The extremities 12 are bent inwardly and upwardly toward each other at angles other than right angles with their respective arms and out of alinement with the rocking axis of the link. These inturned extremities 12 are inserted into the opposite ends of an aperture 13, which is formed in the lever at one side of the pivot 8. The outer ends of this aperture are of substantially the same diameter as the ends 12 of the link, which they receive; but its central portion is enlarged to conform with and to receive the angular extremities 12. This aperture is formed in a split boss 14 and gradually increases in diameter from its outer ends inwardly; but the lever is first formed with the jaws, as 15, of the aperture open, so that the angular ends 12 may be readily laid in the opening, after which the jaws are closed together around the extensions 12 to hold them from withdrawal laterally. It is now apparent that when the jaws 15 are thus closed the central enlargement of the aperture permits the adjacent ends of the angular offsets 12 to rock freely therein when the link is rocked; but the diameters of the outer ends of said aperture being smaller than the circle of rotation of said adjacent ends of the offsets 12 it is evident that the arms of the link cannot be sprung laterally or axially out of their bearings.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a thill-coupling, a draft-eye, a coupling-pin and a spring to take up the lost mo-

tion between the parts, a lever and a link operatively connected to tension the spring, the lever having a transverse aperture enlarged between its ends, and the link having its ends inserted in the aperture and deflected into the enlargement out of alinement with the swinging axis of the link.

2. In a thill-coupling of the class described, a lever having an opening therethrough and enlarged intermediate its ends, and a link-bar having its ends inserted in the opening and disposed at an angle with its axis.

3. In a thill-coupling of the class described, a lever having an opening therethrough and enlarged intermediate its ends, and a link consisting of a U-shape bar having its extremities deflected inwardly and upwardly from the sides and inserted in the aperture.

4. In a thill-coupling of the class described, a lever having a split boss, and a U-shape bar having its ends inserted between the jaws of the boss and bent at an angle other than a right angle with the sides of the bar, the jaws of the boss being closed over said inserted ends for the purpose set forth.

In witness whereof I have hereunto set my hand this 10th day of October, 1903.

GEORGE H. FERNALD.

Witnesses:
WILLIAM O. SHIREY,
NORRIS L. WATSON.