

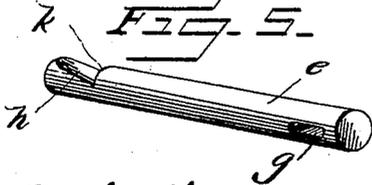
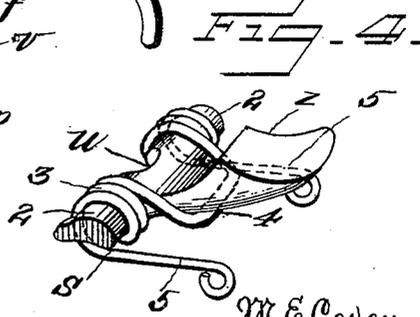
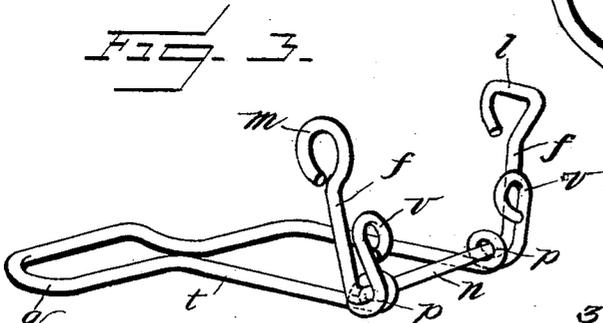
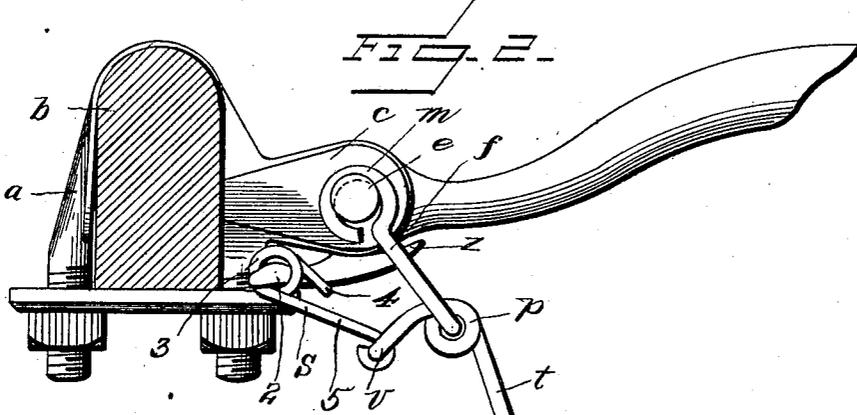
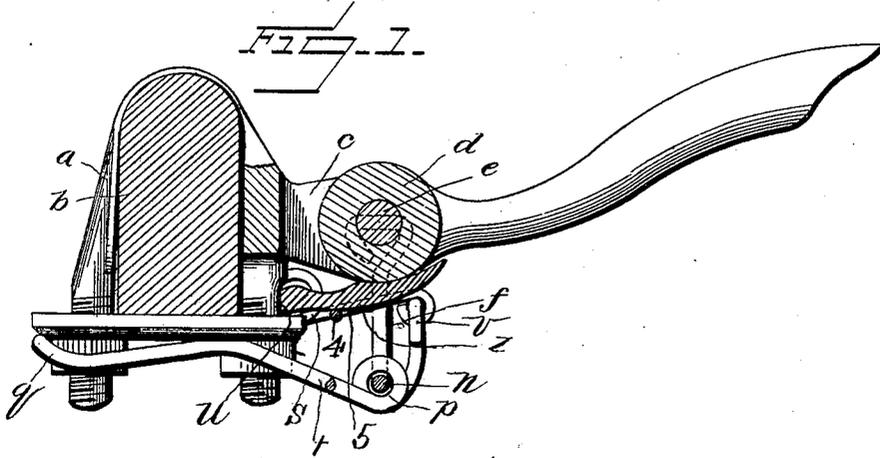
No. 689,290.

Patented Dec. 17, 1901.

M. E. COVEY.
THILL COUPLING.

(Application filed Sept. 8, 1901.)

(No Model.)



Witnesses

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UNITED STATES PATENT OFFICE.

MERRELS E. COVEY, OF BARRINGTON, ILLINOIS.

THILL-COUPLING.

SPECIFICATION forming part of Letters Patent No. 689,290, dated December 17, 1901.

Application filed September 3, 1901. Serial No. 74,147. (No model.)

To all whom it may concern:

Be it known that I, MERRELS E. COVEY, a citizen of the United States, and a resident of Barrington, in the county of Cook and State of Illinois, have made a certain new and useful Invention in Thill-Couplings; and I declare the following to be a full, clear, and exact description of the same, such as will enable others skilled in the art to which it appertains to make and use the invention, reference being had to the accompanying drawings, and to letters and figures of reference marked thereon, which form a part of this specification.

Figure 1 is a longitudinal section, partly in side elevation, of my device as applied. Fig. 2 is a similar view with the antirattler wholly in side elevation and with the wear-plate loosened or released. Fig. 3 is a detail perspective view of the fulcrum-loop and the lever *t*. Fig. 4 is a detail view of the wear-plate and spring. Fig. 5 is a detail view of the bolt.

The invention relates to couplings for the thills or shafts of vehicles; and it consists in the novel construction and combinations of devices, as hereinafter set forth.

In the accompanying drawings, illustrating the invention, the letter *a* designates the ordinary clip upon the axle *b*, and *c* the coupling-lugs, between which the eye *d* of the thill-iron is placed for connection to said lugs. The coupling-bolt *e* passes through the apertures of the lugs and through the thill-eye and is secured in position by the wire fulcrum-hoop *f*. The bolt *e* is provided at one end with an oblong hole or slot *g* and at the other end with a sloping or inclined upper face or bearing *h*, extending inward from the end and downward to a shoulder *k*, beyond which the bolt is of proper size and cylindrical form to fit the thill-eye.

The loop *f* is a U-form fulcrum-hanger, which has at one end a hook-arm *l*, which is passed through the opening at one end of the coupling-bolt and secured thereto by bending its end or otherwise. At the other end of this loop is also provided a hook-arm *m*, which is designed to engage the sloping or beveled bearing of the other end of the bolt the form of which under the pressure of the hook, induced

by the spring *s*, serves to prevent the bolt from working loose. To the transverse portion *n* of this fulcrum loop or hanger are connected at its ends the eyes or loops *p* of the spring-lever *t*, the long loop *q* of which is designed to bear against the clip plate or axle when the coupling is in position. The lower ends, arranged at right angles to the general direction of the long loop, extend upward toward the coupling-bolt and are held outward in an elastic manner by the outward spring of the loop. As usually constructed this loop-lever is formed of wire, and its ends are extended upward from the outer branches of the coils which form the eyes of the lever, said ends being bent in the transverse plane in the form of loops *v* to engage the forward loops of the spring *s*.

Z is a T-form metal plate or bearing which is designed to be held up against the thill-eye and form an antirattling wear-plate. This plate is notched centrally in its rear marginal portion, as at *u*, to engage the front clip-bolt, and its lateral arms 2 are extended sufficiently to be encircled by the tension-coils 3 of the spring *s*. These coils are at the middle portion of the spring, which is of loop or bail form, somewhat similar to the lever; but its loop end 4 is shorter and is extended forward under the wear-plate, serving to hold the latter up to its work. The forward arms 5 of the spring are connected to the lever at the ends of the lever arms or extensions, the latter being laterally bent or spread outward sufficiently to engage the arms of the fulcrum-loop. Normally the spring-arms 5 form a wide angle with the spring-loop 4; but when the spring is bent in position or under tension these arms are brought upward nearly to the plane of said spring-loop. This is effected when the wear-plate is put in position by forcing the long loop of the lever backward and upward against the clip-plate. Under this tension the wear-plate is elastically pressed upward against the thill-iron, the long loop of the lever is automatically held forcibly upward against the clip plate or axle, and the fulcrum hanger or loop is pulled downward, holding the bolt firmly. This

tense position of the parts is secured by a friction-lock formed by the outward elastic spread of the lever, its arms springing outward in front of and engaging the arms of the fulcrum-loop.

In order to loosen the device, the long loop of the lever is brought forward, forcing its forward arms backward between the arms of the fulcrum-loop, when the spring-pressure on the lever-arms operates in the reverse manner, loosening the entire spring attachment and allowing the hook at one end of the bolt to be removed from the inclined bearing, when the coupling-bolt can be withdrawn.

The parts, with the exception of the metal wear-plate, are usually made of spring-wire and are of general U shape in formation. The tension-coils of the spring form the bearings for the arms of the wear-plate, serving to hold the latter in proper position; but the wear-plate can easily be detached from the spring when worn out and replaced by another.

This coupling device is of simple construction and is applied with facility to the ordinary thill irons and clips. The double-acting spring and locking-lever provide means for securing the attachment in coupling position and for readily loosening the same when the bolt is to be withdrawn for uncoupling. The parts are all connected to the coupling-bolt through the fulcrum-loop in such a manner

that they are not liable to become separated from each other.

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

1. In a thill-coupling, the combination with a coupling-bolt, of the fulcrum-loop connected thereto, the spring loop-lever connected to the fulcrum-loop, the double-acting tension-spring connected to the loop-lever, and the detachable wear-plate connected to the spring, substantially as specified.

2. In a thill-coupling, the combination with a bevel-end coupling-bolt, of a U-form fulcrum-hanger, a tension-spring, a wear-plate, and an automatic spring locking-lever connected to said fulcrum-hanger, and to said spring, substantially as specified.

3. In a thill-coupling, the combination with a bevel-end bolt of a U-form fulcrum-hanger, having a hook-arm for detachable engagement with said bevel end, an automatic spring locking-lever connected to said hanger, a detachable wear-plate and a tension-spring forming the bearings for said wear-plate, substantially as specified.

In testimony whereof I affix my signature in presence of two witnesses.

MERRELS E. COVEY.

Witnesses:

AUGUST W. MEYER,
L. F. SCHROEDER.