(No Model.)

J. HERRON.

THILL COUPLING.

No. 306,749. Patented Oct. 21, 1884.

Fig. 1.

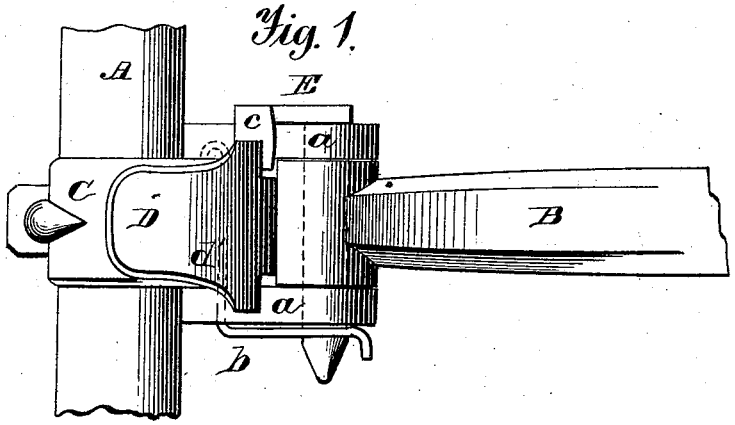


Fig. 5.

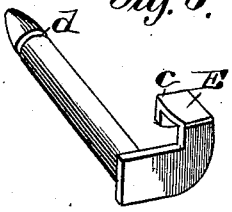


Fig. 2.

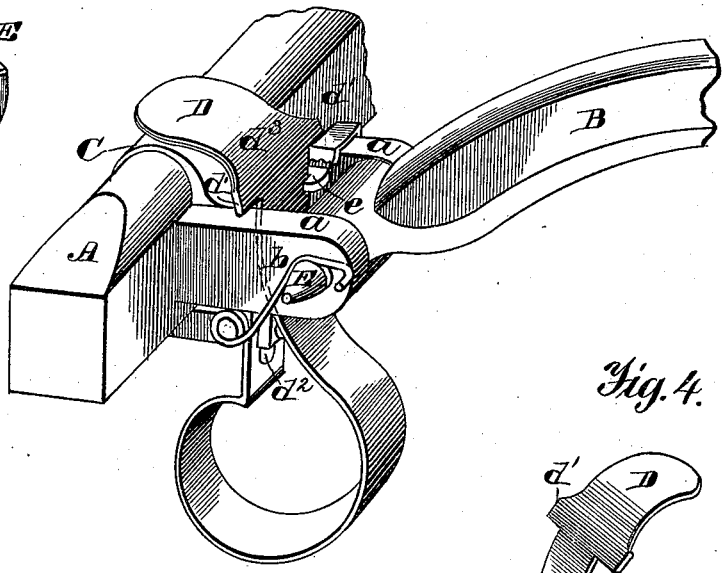


Fig. 4.

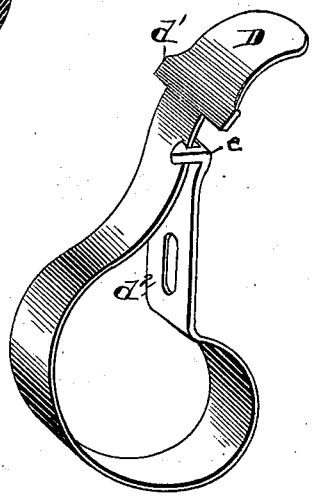
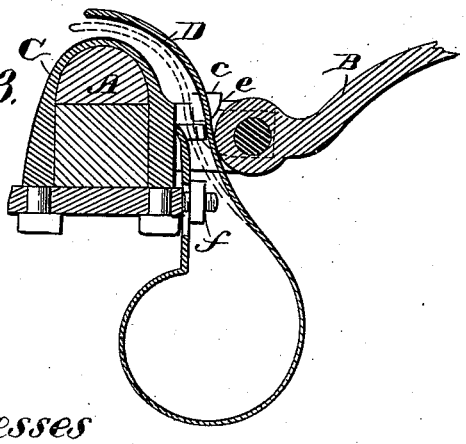


Fig. 3.



Witnesses
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UNITED STATES PATENT OFFICE.

JOHN HERRON, OF OLNEY, ILLINOIS.

THILL-COUPLING.

SPECIFICATION forming part of Letters Patent No. 306,749, dated October 21, 1884.

Application filed March 21, 1884. (No model.)

To all whom it may concern:

Be it known that I, JOHN HERRON, a citizen of the United States, residing at Olney, in the county of Richland and State of Illinois, have invented certain new and useful Improvements in Shaft-Couplings, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to certain new and useful improvements in thill-couplings; and it consists in arranging a series of devices to hold a pole or pair of shafts to the axle of a wagon, whereby either can be readily secured or detached, the parts held securely in place, and the connections prevented from rattling or becoming loose.

The object of my invention is to securely attach the shafts or pole to the axle of a wagon in such a manner that they will not become disconnected while in use, and that the connection and disconnection can be easily made at the will of the operator without the troublesome method of unscrewing the bolts, as usual in the old way.

My invention further consists in providing means to hold the parts in place, to prevent noise caused by loose bolts and the danger from breakage when loose. I attain these objects by means of the peculiar construction and arrangement of the various parts of my device, which will be more fully pointed out in the specifications and claims, reference being had to the drawings accompanying this application and forming part of the same, in which—

Figure 1 is a top plan view of my invention, showing the parts locked in place. Fig. 2 is a perspective view of the same. Fig. 3 is a vertical sectional view, showing manner of connection. Fig. 4 is a detail view of curved spring, and Fig. 5 is a detail view showing connecting-bolt.

Similar letters refer to similar parts throughout the drawings.

Referring to the drawings, A represents an axle of an ordinary wagon or vehicle.

B represents the inner end of shaft or pole, said end being perforated in the usual manner to receive a main bolt.

C is the clip, having ear projections *a*, that are perforated to receive main bolt E, said bolt having a flat angular projection at one end and a groove, *d*, cut in the opposite end, as shown in Fig. 5. Said bolt E is formed to fit loosely in the perforations in the ears *a*, and in the shaft or pole end B, and when put in place the angular end *c* fits snugly over the sides and upper face of one of the ears *a*, as shown in Figs. 1 and 2. The object of this construction is to confine the bolt E exactly in place and in preventing its displacement when in use; and, further, it is easily inserted and removed. A curved spring, D, is formed with a spoon-shaped outer end, and a short distance inward are formed angular projections *d'*, that extend outward over the upper face of ears *a*, as shown in Figs. 1, 2, and 4. Said ears *a* form bearings against which the under face of said projections rest, to prevent the spring from being drawn downward by its tension. One side of spring D is formed to rest one of projections *d'* on the upper face of the angular projection *c* of bolt E, as shown in Figs. 1 and 2. A projection, *e*, having an inclined outer face and a flat angular inner face, is secured to the inner face and inner end of the spring D, the purpose of which is to hold the outer end of spring D away from the inner end of shaft B and the angular upper face, *c*, of bolt E, in order that the bolt E may be readily removed. The inner end of spring D is formed flat, with an elongated slot, d^2, near its end, formed to fit over a bolt or projection, *f*, extending from the end of the clip yoke or tie, said spring being held in place by a nut turned on said bolt *f*. The purpose of the elongated slot is to permit of the vertical adjustment of spring D.

My peculiar form of spring D is shown in Fig. 4, in which the flat end is formed with an angular projection or catch, *e*, that holds the upper part of said spring back in the same manner as shown in Fig. 2. An elastic wire spring, *b*, is attached by its inner end to the clip C, and its outer or free end is curved upward to rest in the groove *d*, formed in the end of bolt E, as shown in Figs. 1 and 2. This construction forms a safety-spring to prevent the bolt E from falling out should the spring D become loosened or broken.

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

1. A shaft-coupler consisting of clip having perforated projecting ears, a bolt provided

with an angular head formed to fit the sides and top of one of said ears, said bolt having an annular groove in its opposite end, a curved spring formed to be held at one end rigidly or loosely against said clip, its free end curved rearward and formed with projections to fit the upper face of the ears of the clip and the upper face of the bolt-head, said spring being adapted to press against the inner end of a perforated shaft or pole iron, substantially as shown.

2. In a shaft-coupler, a curved spring with its inner end centrally slotted, and provided with an end angular catch projection adapted to receive and hold the edge of said spring, its outer end curved backward and provided with side projections, substantially as and for the purpose set forth.

3. A shaft-coupling bolt formed with an angular head adapted to fit over the sides and top of the projecting ears of an axle-clip, the opposite end of said bolt being provided with an annular groove, substantially as shown.

4. In a shaft-coupler, the bolt E, having an angular head and grooved opposite end, as shown, a curved wire spring, one end secured to the shaft-clip and the opposite end pressing within the groove in the end of said bolt, substantially as shown.

5. In a shaft-coupler, the axle A, having clip C, provided with projecting ears *a*, the shaft B, the bolt E, having angular head *c* and groove *d*, as shown, and the catch *e*, in combination with the spring D and the wire spring *b*, arranged and operated substantially as shown and specified.

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

JOHN HERRON.

Witnesses:

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J. O. ST. JOHN.