No. 669,238. Patented Mar. 5, 1901.

F. L. HAWKINS.

THILL COUPLING.

(Application filed Apr. 5, 1900.)

(No Model.)

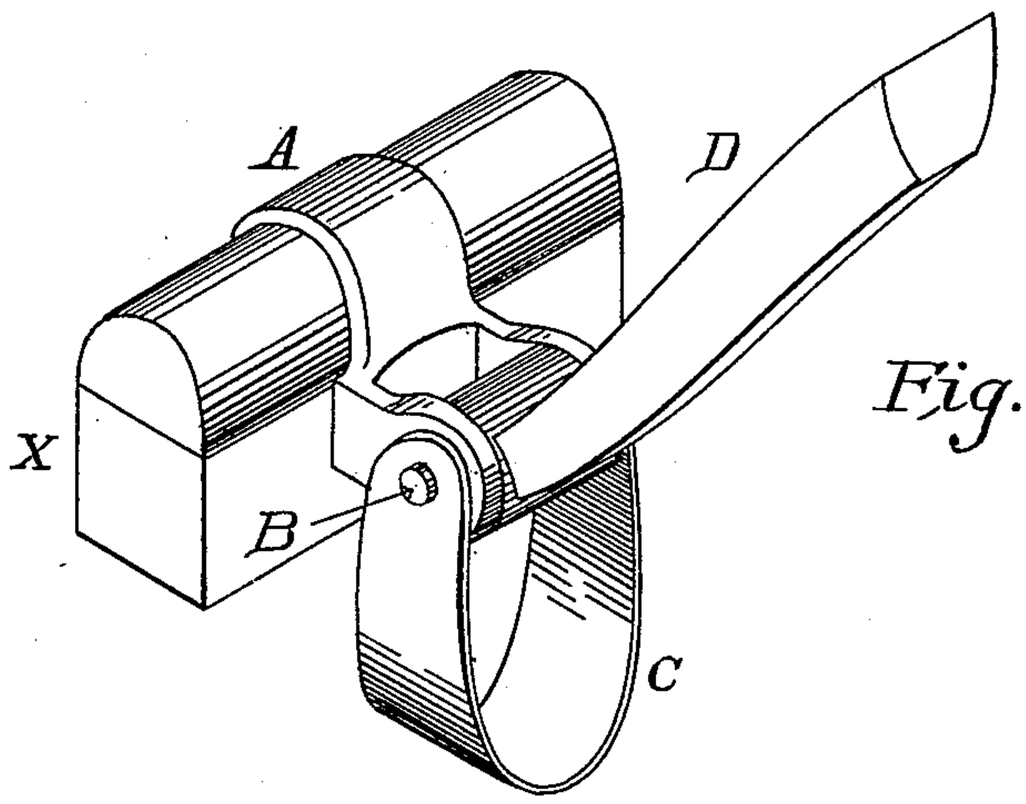

Fig. 1.

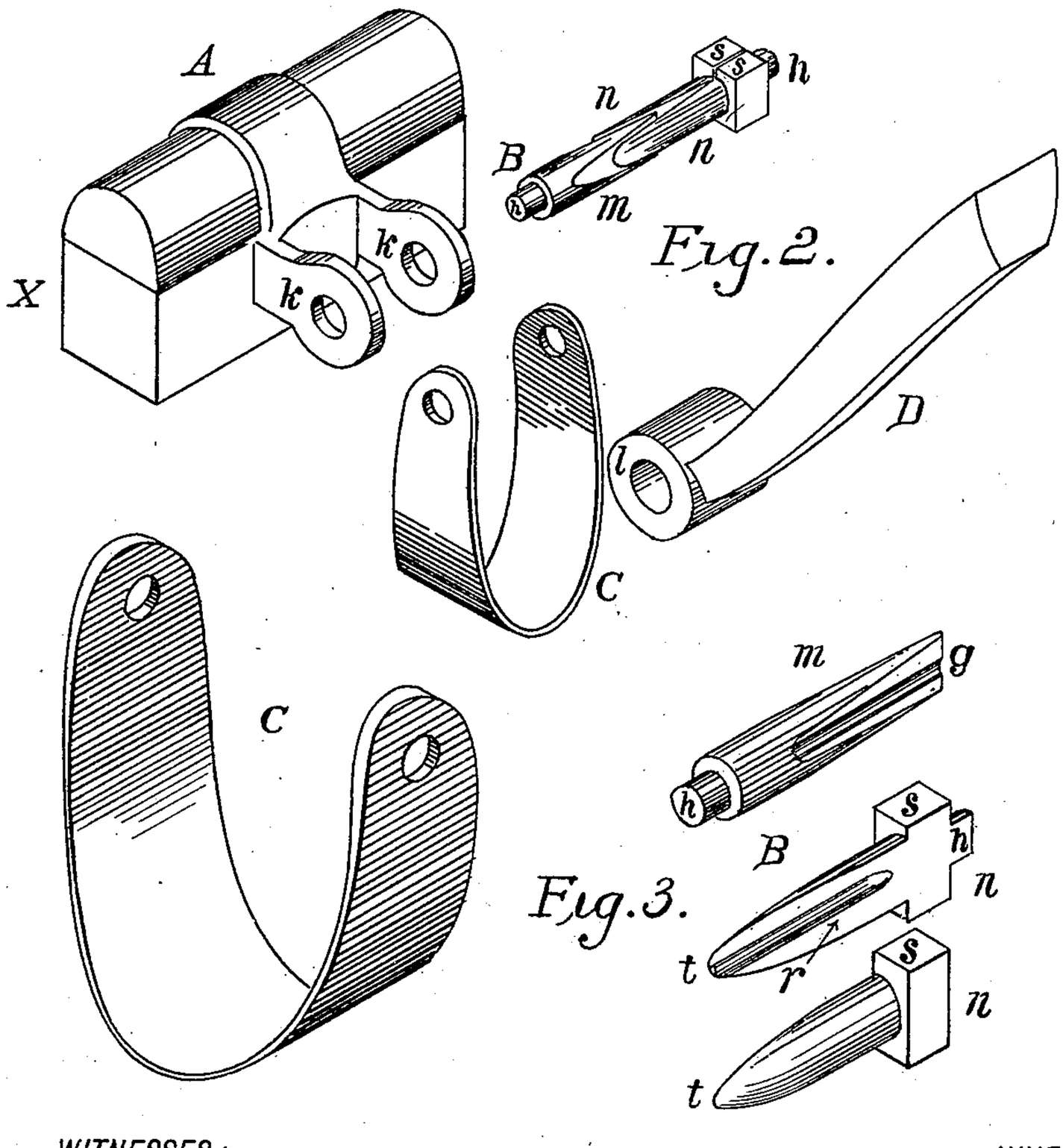

Fig. 2.

Fig. 3.

WITNESSES:

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THILL-COUPLING.

SPECIFICATION forming part of Letters Patent No. 669,238, dated March 5, 1901.

Application filed April 5, 1900. Serial No. 11,769. (No model.)

To all whom it may concern:

Be it known that I, FRED LINCOLN HAWKINS, a citizen of the United States, residing at Gardner, in the county of Worcester and State of Massachusetts, have invented a new and useful Thill-Coupling, which I have called a "Three-Piece Thill-Coupling Bolt," of which the following is a specification.

My invention relates to improvements in thill-coupling devices, and is designed, first, to provide a simple, inexpensive, and safe fastening or coupling for attaching quickly, without the use of nuts, screws, or tools of any sort, the thills of a vehicle to the axle thereof; and, secondly, to furnish a fastening for said purpose which shall be self-adjusting to the natural wear of the thill-shackle and its own parts and which shall be absolutely free from any noise or rattle when in use. These objects are attained by the fastening or coupling illustrated in the accompanying drawings, in which—

Figure 1 is an isometric view of the end of a carriage-thill and a piece of a carriage-axle connected together by said coupling. Fig. 2 is an isometric view of the several parts shown connected together in Fig. 1 detached from each other; and Fig. 3 consists of detailed isometric drawings of the spring and the three-piece bolt, which constitute the fastening or coupling for which Letters Patent are desired.

The corresponding parts in the different figures are designated by the same letters of the alphabet.

As shown in Fig. 3 of the drawings, my invention consists, simply, of a curved steel spring C, plainly illustrated by the drawing thereof, and of an iron or steel bolt B, made in three pieces, of which one, *m*, is an ordinary round bolt at the top, with a small round head *h* projecting therefrom, but beveled off on two sides, beginning at a point about one-third of its own length from the top thereof, into the shape of a wedge, having in the center of each beveled surface a shallow groove *g*, running lengthwise of said surface, made to fit between the other two pieces *n n*, which are exactly alike. These pieces *n n* are round (convex) upon the outside and flat upon the inside, each having a rectangular shoulder *s* upon its outer end or top, from which projects a half-head *h*, and tapering ovally to the inner end or bottom, the inside surface being beveled from near the shoulder *s* to the bottom *t* to fit a beveled surface of the piece *m*. Each piece *n* has also a small raised rib *r* in the center of its beveled face running lengthwise, designed to fit into a groove *g* in the piece *m*. When the beveled faces of the pieces *n n* are applied to the beveled faces or sides of the piece *m*, so that the inner ends *t t* of the pieces *n n* just reach the top of the beveled faces of the piece *m*, the three pieces thus put together form a round bolt of uniform diameter just the size of the barrel of the shackle. The grooves *g g* in the piece *m* and the ribs *r r* on the pieces *n n*, although preferably employed to prevent any sidewise motion of the parts upon each other, are not absolutely essential to the successful operation of the bolt and may be omitted, leaving the beveled surfaces of the parts smooth and unbroken. The method of application of the parts to each other is shown by B in Fig. 2.

The method of applying and using this bolt and spring in attaching the thill to the axle-clip of a vehicle is as follows: The shackle I of the thill D is inserted between the arms *k k* of the clip A, so that the barrel of the shackle is in alinement with the holes in the arms of the clip. The piece *m* of the bolt is then pushed through one arm of the clip into the barrel of the thill end or shackle and the pieces *n n* of the bolt are slipped through the other arm of the clip on either side of the piece *m*, the ribs *r r* fitting into the grooves *g g*, until the shoulders *s s* of the pieces *n n* rest firmly against the arm of the clip. The spring C is then snapped on over the opposite heads *h h* of the bolt, which it is made to fit and which is securely held in place thereby. As the barrel of the shackle wears away the spring, constantly pushing strongly against the ends or heads of the bolt, forces the piece *m*, which is made long enough to project a quarter of an inch or more outside the arm of the clip, further up into or between the pieces *n n*, whose ends then extend beyond the beveled surfaces of the piece *m*, and thus increasing the circumference of the bolt fill up the space worn away in the barrel of the shackle and effectually prevent any rattling of the coupling.

Having thus described my invention, what

I claim as new, and desire to secure by Letters Patent, is—

1. In a thill-coupling a coupling, or shackle, bolt consisting of three pieces *m n n*, with the grooves *g g* and the ribs *r r*, arranged and combined together substantially as described.

2. In a thill-coupling, an expanding coupling-bolt consisting of three separate parts, the central part being in the form of a wedge, substantially as set forth.

3. In a thill-coupling, an expanding coupling-bolt consisting of three separate parts, the outer part having a rectangular shoulder and the central part being in the form of a wedge, as set forth.

In testimony whereof I have affixed my signature hereto in the presence of two witnesses.

FRED LINCOLN HAWKINS.

Attest:

JAMES W. DAVIS,

TIMOTHY F. SHAY.