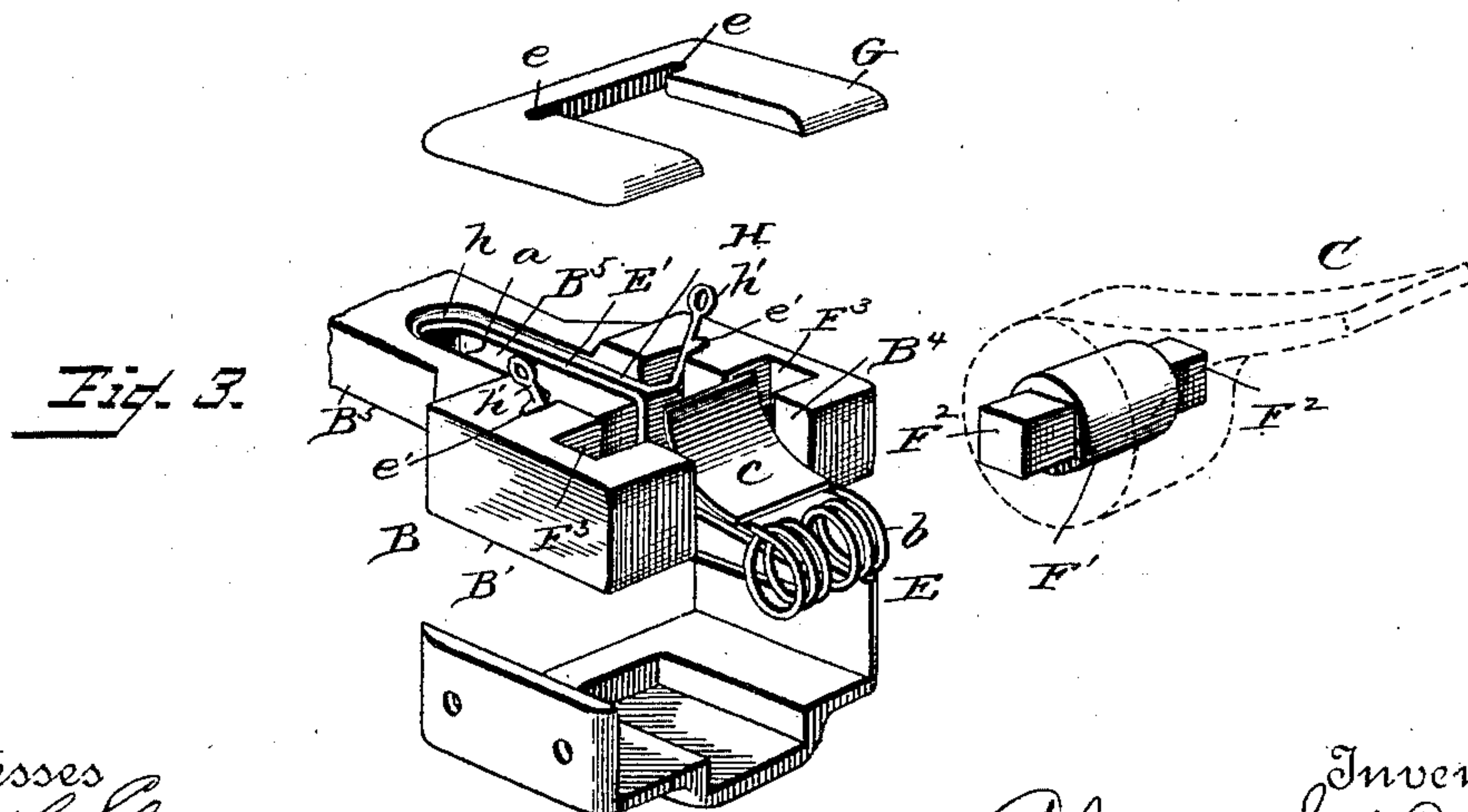
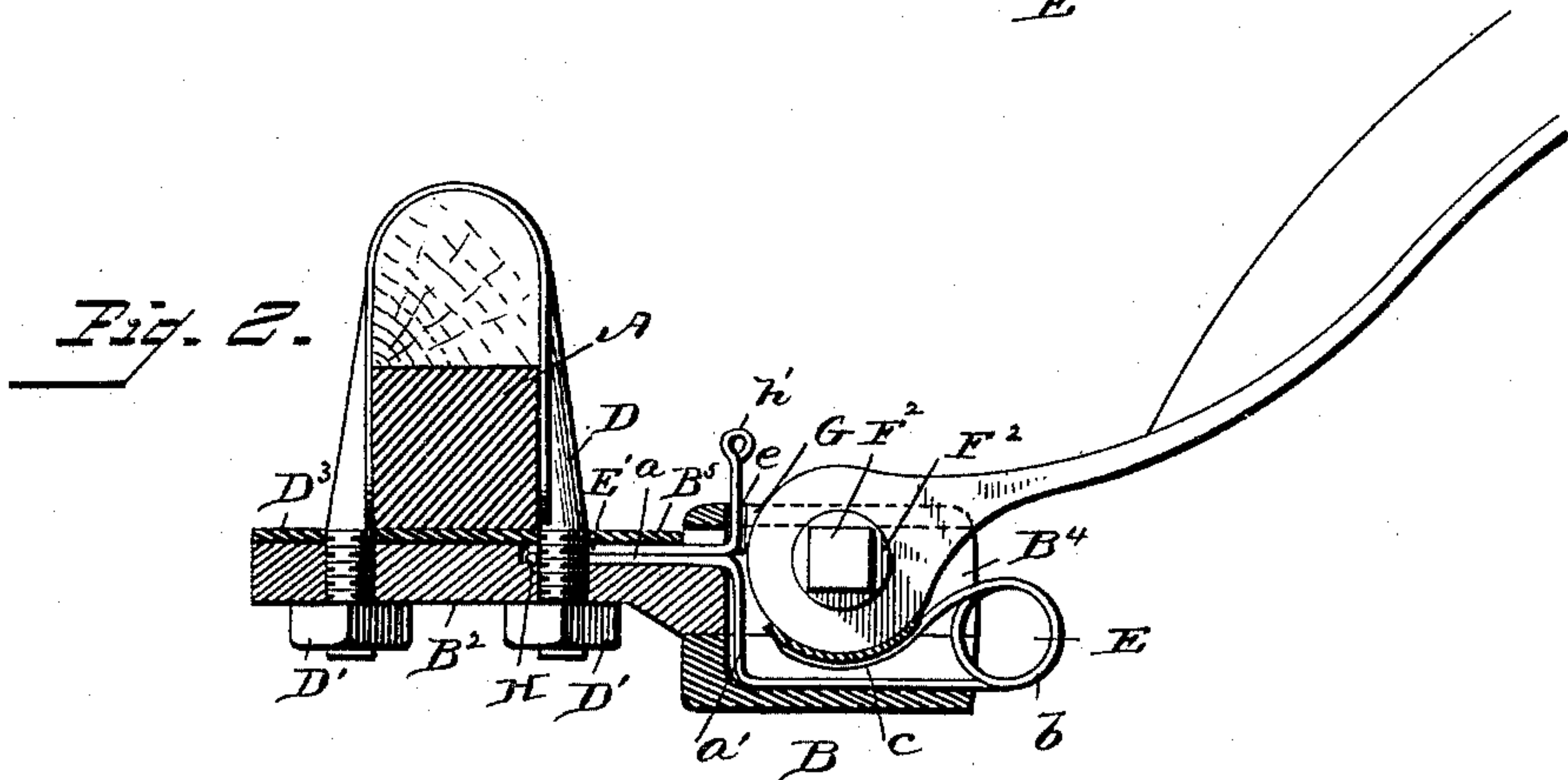
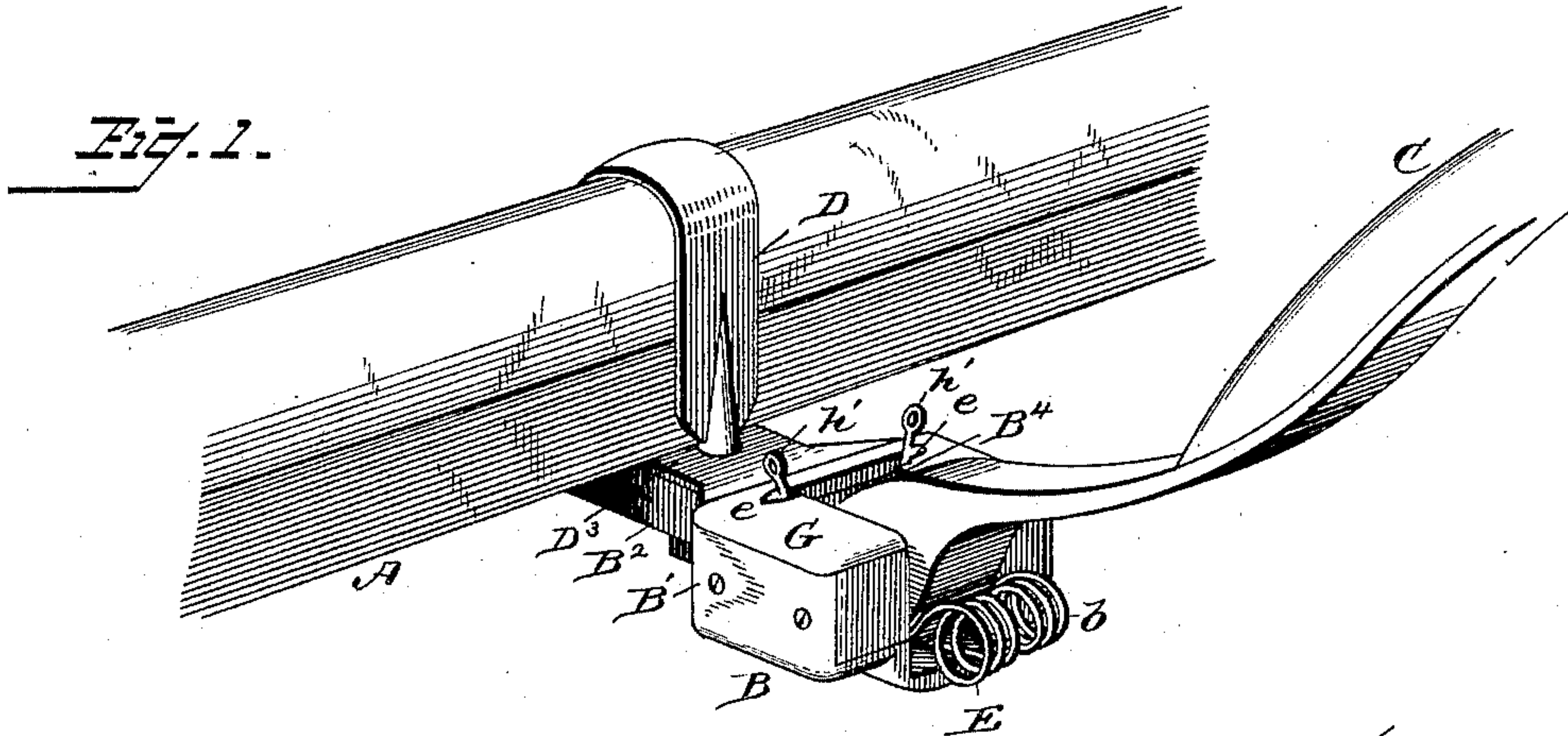


(No Model.)

A. ST. JOHN.  
THILL COUPLING.

No. 412,863.

Patented Oct. 15, 1889.



Witnesses  
*Wm. J. Spence*  
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# UNITED STATES PATENT OFFICE.

ALONZO ST. JOHN, OF LOWVILLE, NEW YORK.

## THILL-COUPLING.

SPECIFICATION forming part of Letters Patent No. 412,863, dated October 15, 1889.

Application filed August 10, 1889. Serial No. 320,385. (No model.)

*To all whom it may concern:*

Be it known that I, ALONZO ST. JOHN, a citizen of the United States, residing at Lowville, in the county of Lewis and State of New York, have invented certain new and useful Improvements in Thill-Couplings; and I do declare the following to be a full, clear, and exact description of the invention, such as it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

This invention relates to certain new and useful improvements in combined thill-couplings and anti-rattlers; and it has for its object to improve upon the construction, and to cheapen and render more efficient in operation this class of devices.

To these ends, and to such others as the invention may pertain, the same consists in the peculiar combinations and in the novel construction, arrangement, and adaptation of parts, all as more fully hereinafter described, shown in the accompanying drawings, and then specifically defined in the appended claims.

The invention is clearly illustrated in the accompanying drawings, which, with the letters of reference marked thereon, form a part of this specification, like letters of reference indicating like parts throughout the several views, and in which drawings—

Figure 1 is a perspective view of a combined thill-coupler and anti-rattler constructed in accordance with my invention. Fig. 2 is a central vertical section through the same; and Fig. 3 is a perspective view, in which the parts are shown as detached, but in their relative positions.

Reference now being had to the details of the drawings by letter, A designates the axle, B the coupling, and C the thill. The body of the coupling consists of a metallic casting B' the rear portion of which (shown at B<sup>2</sup>) is extended rearwardly beneath the axle, and is secured thereto by means of a clip D, which clip embraces the axle, and its free ends are passed through the extension B<sup>2</sup> and are secured in place by means of nuts D' upon the under face of the extension. The upper face

of the portion B<sup>2</sup> is protected by means of a wearing-plate D<sup>3</sup>. The enlarged forward portion of the casting B is provided with a central longitudinal recess or chamber B<sup>4</sup>, which chamber is provided with a shallow groove or extension B<sup>5</sup>, which groove is extended a short distance along the upper face of the portion B<sup>2</sup> of the casting.

E is the anti-rattler attachment, which is made, preferably, of a heavy quality of spring-wire bent at its center to form the loop E', from which central point the wire is bent to form the horizontal portion a, said portion being of such width and length as to adapt it to be fitted within the groove B<sup>5</sup>, as shown. At the point at which the groove B<sup>5</sup> communicates with the central chamber B<sup>4</sup> of the casting the wires are bent downwardly at right angles to the portion a, thus forming the vertical portions a', which extend to a point near the bottom of the chamber B<sup>4</sup>, and from this point the wires are again bent at right angles and extend horizontally to a point a short distance beyond the open front end of the chamber, where they are bent to form the coils b, after forming which coils the free ends of the wires are extended rearwardly and terminate in a slightly-upward curve within the interior of the chamber B<sup>4</sup>, where they are soldered or otherwise secured to the under face of the curved metallic wearing-plate c. The rounded rear end of the thill-iron F is loosely sleeved upon a transverse shaft or pin F', the projecting ends of which pin are cut away to form the squared trunnions F<sup>2</sup>, which trunnions are adapted to be received within the recesses F<sup>3</sup>, formed in the sides of the chamber B<sup>4</sup>.

It will be seen that when in position within the chamber B<sup>4</sup> the rounded end of the thill will rest within the curved wearing-plate c, and that said wearing-plate is forced upwardly against the thill by the tension of the wire to which it is attached.

G is a plate fitted over the enlarged portion of the casting B, said casting being provided with a central opening for the reception of the end of the thill, the rear end of said opening being provided with extensions or slots e corresponding with similar slots e', formed in the rear of the chamber B<sup>4</sup> of the casting, as shown.



H is a heavy spring-wire bent at its center to form a loop *h*, from which central point the wire is bent so as to form the horizontal portion, of such a length and width as will permit it to be fitted within the groove B<sup>5</sup>. At the point at which the said wire enters the chamber B<sup>4</sup> the wires are bent outwardly at right angles to the portions described, and are again bent upwardly, forming the vertical portions, which are adapted to enter the slots *e* in the plate G, the free ends of the wire being extended a short distance above the top of the plate, as shown at *h'*.

It will be seen that both the wire constituting the tension device or anti-rattler and the wire H are secured in place by means of the clip-iron, which is extended vertically through the central loops in said wires.

The operation of the device is simple, and will be readily understood. The plate G is retained in place by means of the wire H, the free ends of which engage the recesses in the rear of the plate, as described, and are retained therein by the tension of the spring. When it is desired to uncouple the thill, the upwardly-extended free ends of the wire H are forced inwardly so as to disengage the same from the slots in the plate, when the said plate may be removed and the thill lifted from its seat within the chamber.

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

1. The combination, with a vehicle axle and thill, of a chambered casting secured to the

axle by means of a clip, a wire of spring metal retained within the chamber by the engagement of one of the arms of the clip-iron with a central loop in the wire, the coils *b*, formed in the wire at the front end of the chambered casting, the wearing-plate secured to the free ends of the wire adjacent to the loops, the cap-plate G, fitted over the enlarged portion of the casting and provided with central apertures and recesses, as described, and the wire H, having a central loop to engage one of the vertical arms of the clip-iron within the chamber within the casting, and having its free ends bent upwardly and engaging the recesses in the cap-plate, substantially as shown and described.

2. The combination, with the axle and the thill, of the chambered casting, and a wire spring formed at its end with a seat for the thill and formed with a coil *b* at the front end of the casting, substantially as and for the purpose specified.

3. The combination, with the axle and the thill, of the chambered casting, the wire spring having a loop, a coil *b*, and a seat for the thill, and the clip-iron having one leg passed through the loop of the spring, substantially as shown and described.

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

ALONZO ST. JOHN.

Witnesses:

HERBERT S. MORSE,  
GEORGE O. JEFFERS.