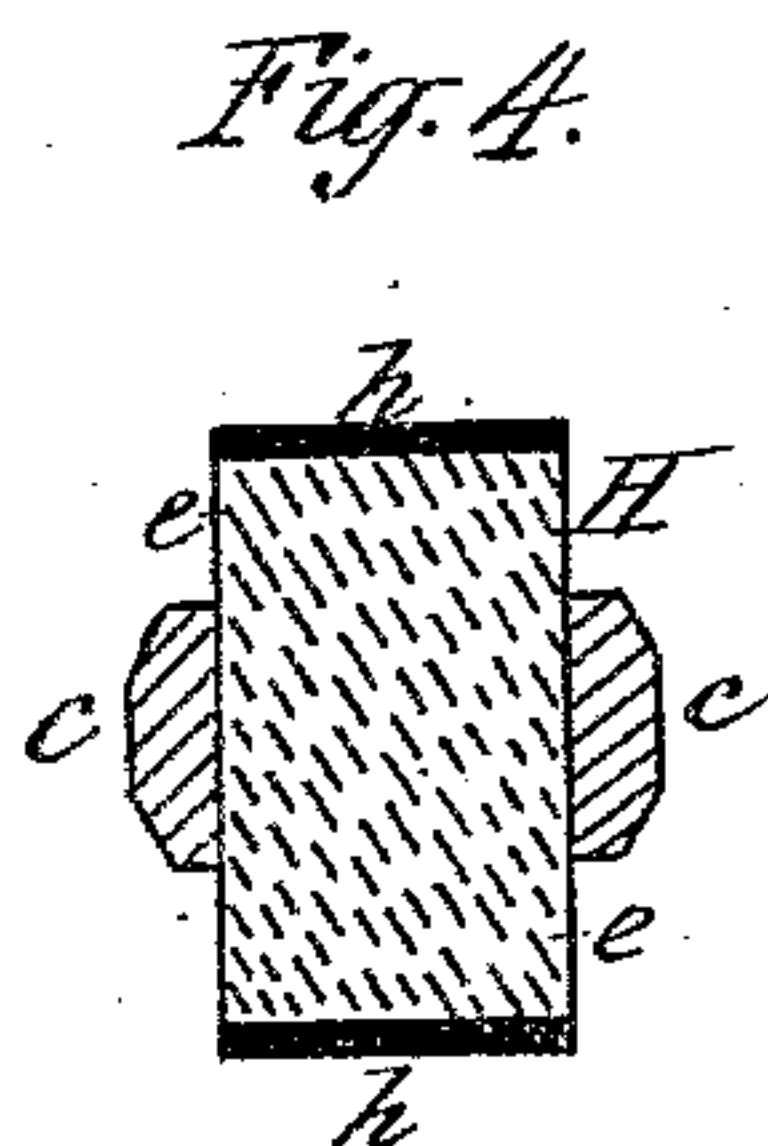
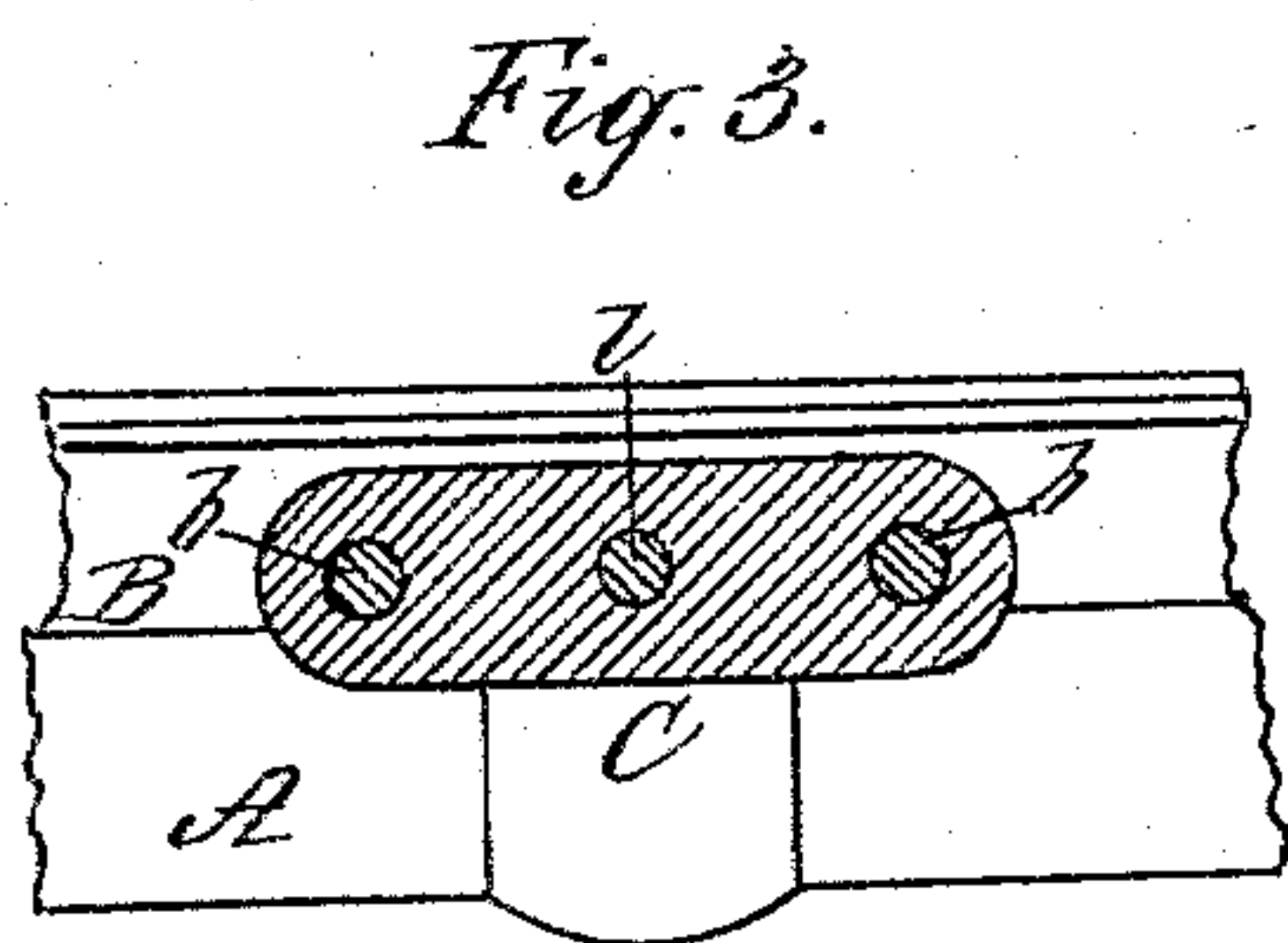
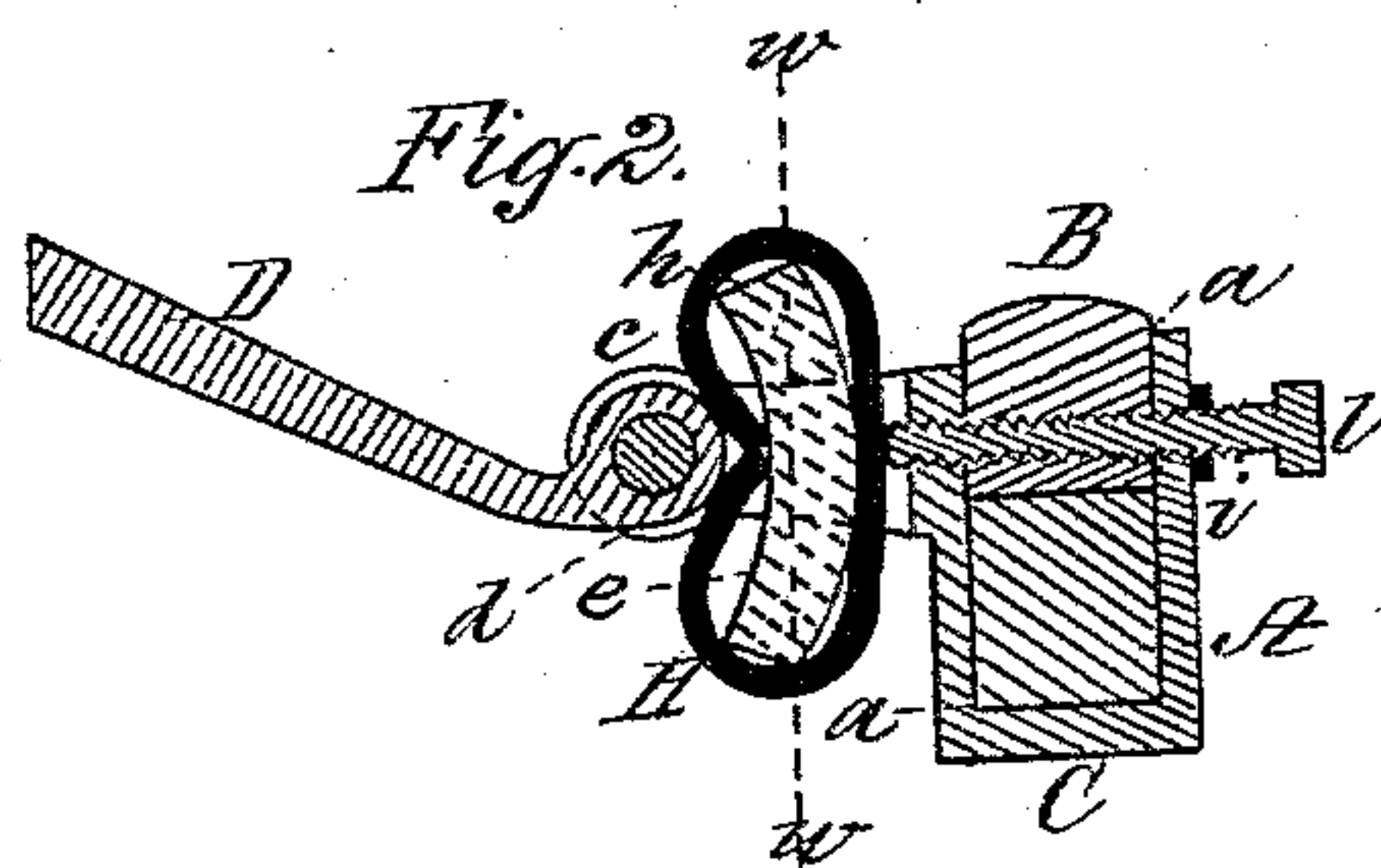
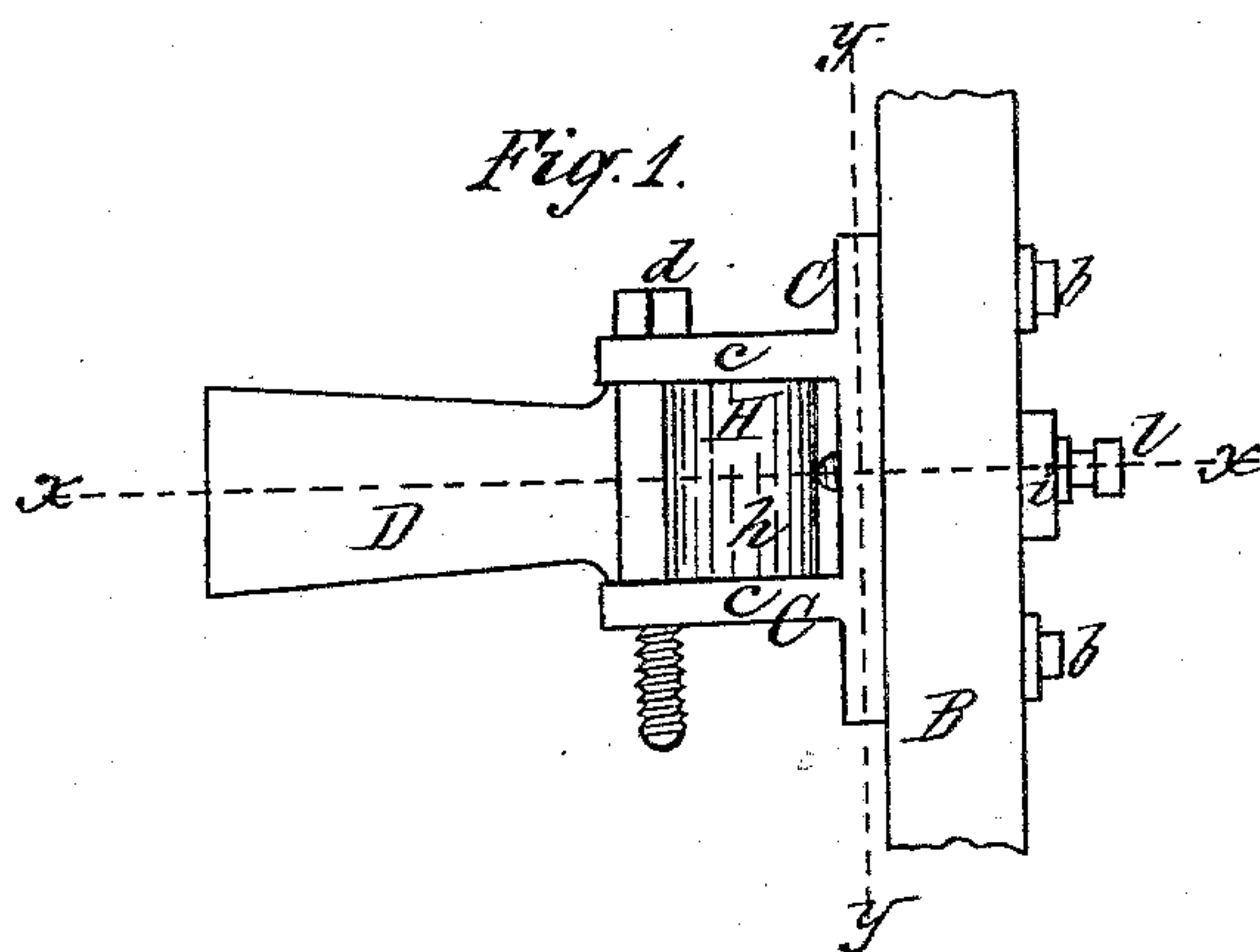


(No Model.)

J. KENNEDY.
THILL COUPLING.

No. 553,001.

Patented Jan. 14, 1896.



WITNESSES:

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UNITED STATES PATENT OFFICE.

JOHN KENNEDY, OF BOSTON, MASSACHUSETTS.

THILL-COUPLING.

SPECIFICATION forming part of Letters Patent No. 553,001, dated January 14, 1896.

Application filed July 31, 1895. Serial No. 557,686. (No model.)

To all whom it may concern:

Be it known that I, JOHN KENNEDY, of Boston, county of Suffolk, State of Massachusetts, have invented certain Improvements in Thill-Couplings, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a plan of the upper side of a thill-coupling constructed in accordance with my invention and applied to a carriage-axle and the bed resting thereon. Fig. 2 is a section on the line *x x* of Fig. 1; Fig. 3, a section on the line *y y* of Fig. 1; Fig. 4, a section on the line *w w* of Fig. 2.

This invention relates exclusively to that class of thill-couplings usually known as "antirattlers;" and my present invention consists in a duplex spring interposed between the heel of the thill-iron and the clip secured to the axle and the bed resting thereon, in combination with an adjustable tightening-screw passing through the clip and bed and bearing against the said spring, thus keeping the thill-iron constantly forced with the required pressure against the bolt which connects it with the lugs of the clip and precluding the possibility of play and consequent rattling, and a clip having an open-top socket at its rear end which admits of ready application to and removal from the bed and axle.

In the said drawings, A represents the axle, B the transverse bed-piece resting thereon, and C the clip having my improved socket *a* open at its top and within which they are located.

b b are bolts passing through the bed-piece into the clip for securely holding the parts together in their proper working position. (See Figs. 1 and 3.)

c c are two lugs projecting from the front of the clip, each lug being provided with a cylindrical hole for the passage of the screw-bolt *d*, which also passes through an eye in the heel of the shaft-iron D and connects them together in a well-known manner.

H is a compound or duplex spring of peculiar construction, being formed of an inner rubber block *e* and an outer metal strip *h*, approximately resembling an ellipse, having a top and bottom loop, with its transverse di-

ameter contracted by bending its two curved front ends inward toward its rear and against the front of the rubber block *e* within it. 55 (See Fig. 2.)

The top of the clip is open and is bounded at the rear by a vertical standard *i* projecting up therefrom and abutting against the rear of the axle and its bed-piece. Through 60 the top of this standard and into and through the bed-piece passes an adjusting-screw *l*, the forward end of which bears against the outer metal spring *h* of the duplex spring H and forces the thill-iron against the connecting-bolt *d*, which latter is thereby forced snugly against the forward inner surface of the cylindrical eyes of the two lugs, in which position it is permanently held, as although the parts (where the surfaces are in constant con- 70 tact) become worn by friction the wear may be instantly compensated for or "taken up" and all play and consequent rattling prevented by the simple act of turning in or tightening the adjusting-screw *l* against the 75 outside metal spring, which can be done with an ordinary wrench in the hand of any person, whether experienced or not.

When the shaft-iron is to be removed to substitute a pole-iron therefor, or for other 80 reason, it is simply necessary to relieve the pressure of the binding-screw *l* on the spring, when the bolt is free to be driven out with a blow of a hammer or stone.

The construction of my clip particularly 85 adapts it for use with any bed-piece, for only three holes are necessary for the passage of the two bolts and the screw *l*, and many forms of old clips and couplings may be removed and my improved coupling located in 90 place in a very few minutes.

Besides the function of pressing the spring H forward against the heel of the thill-iron the adjustable screw *l* also serves the purpose of an auxiliary bolt to strengthen the connection between the clip and the bed-piece. 95

It is evident that my duplex spring is not limited in its application to my herein-described clip having a socket, as said spring possesses the same efficiency and advantage when ap- 100 plied to the other forms of clips now in use.

I claim—

1. A duplex spring H, formed of an inner rubber portion *e* and an outer elliptical

spring *h* having a top and bottom loop and located between the thill-iron D and the clip C, in combination with an adjusting-screw *l* passing through the clip, substantially as set forth.

5 2. The combination of a clip C having an open-top socket *a*, an axle A and bed piece B located within said socket, a thill iron D, a rubber spring H, a metal spring *h* having top

and bottom loops and encircling the spring H, and an adjusting screw *l* bearing against the middle of the spring *h*, substantially as described.

Witness my hand this 26th day of June, 1895.

JOHN KENNEDY.

In presence of—

JOSEPH A. REILLY,

JOHN B. DAVIES.