

(No Model.)

3 Sheets—Sheet 1.

A. H. MOORE.  
SOFA BED.

No. 498,016.

Patented May 23, 1893.

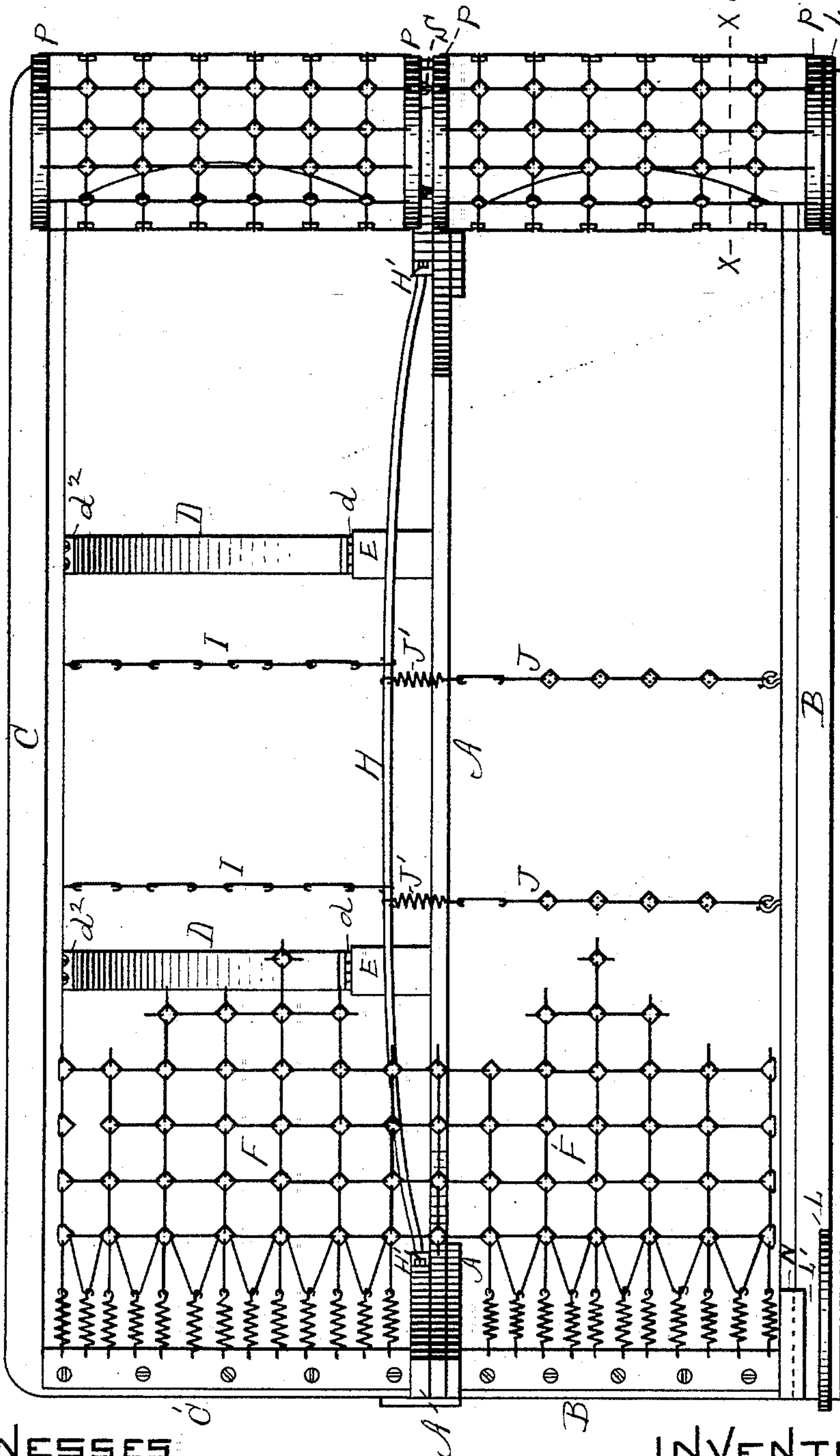


FIG 1.

WITNESSES

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Jenny Williams

(No Model.)

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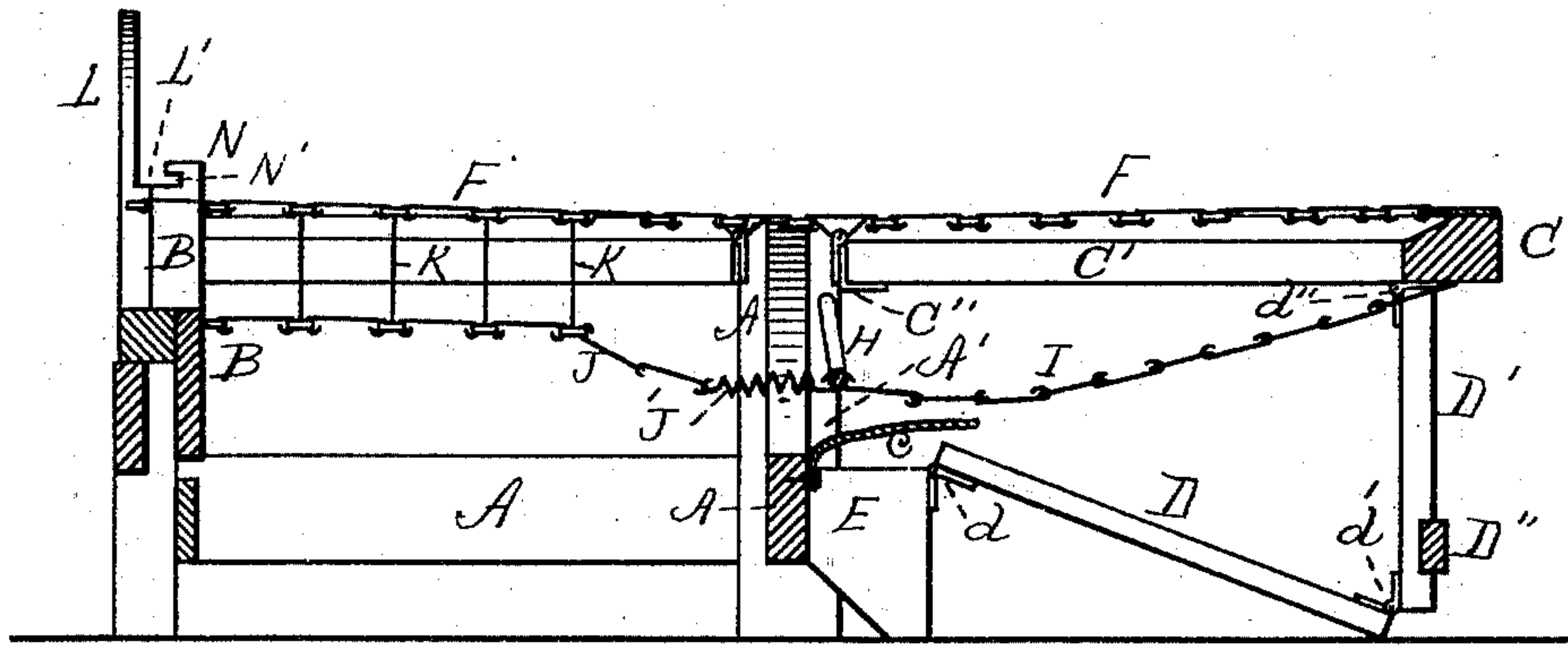


Fig. 2.

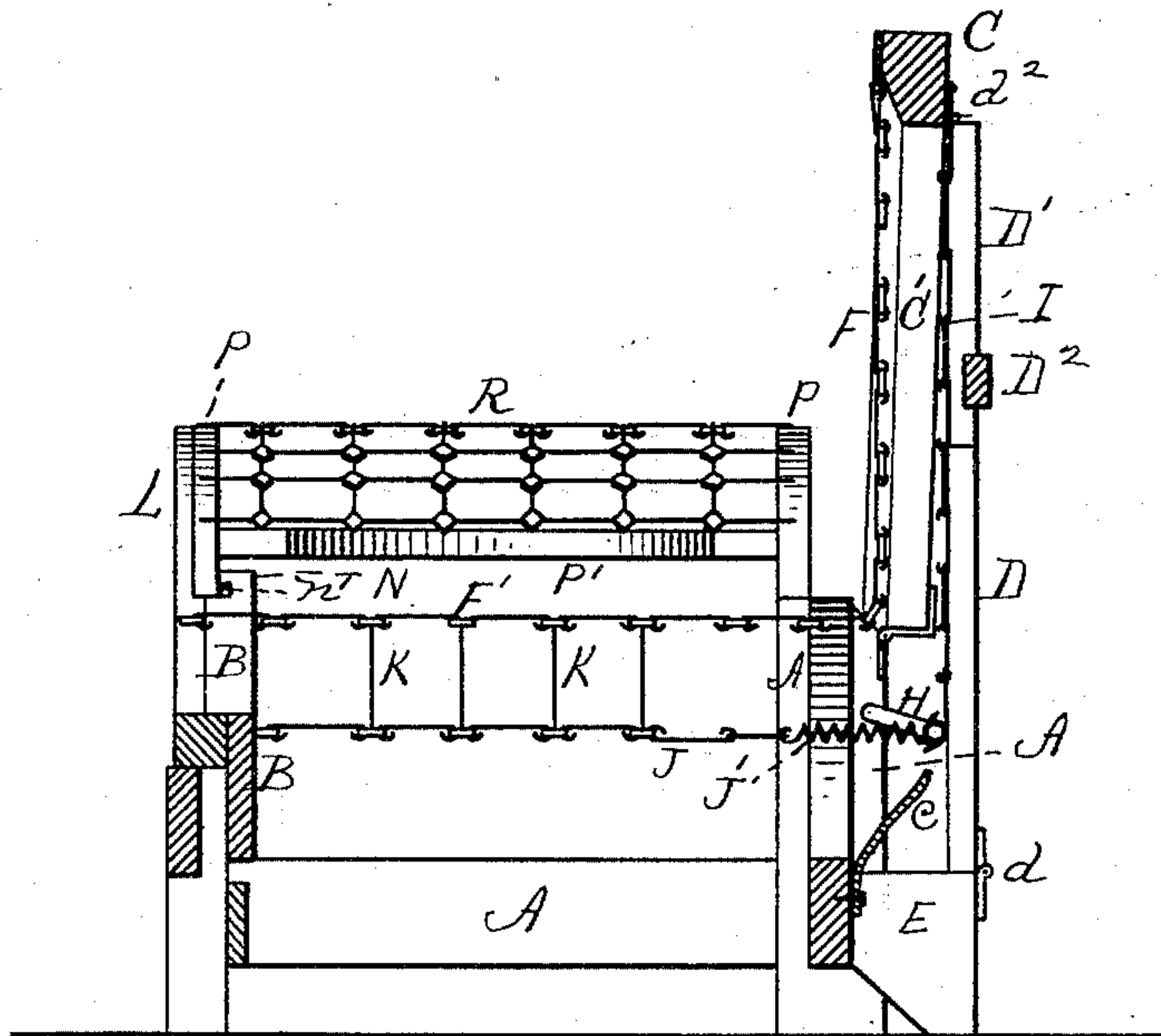


Fig. 3.

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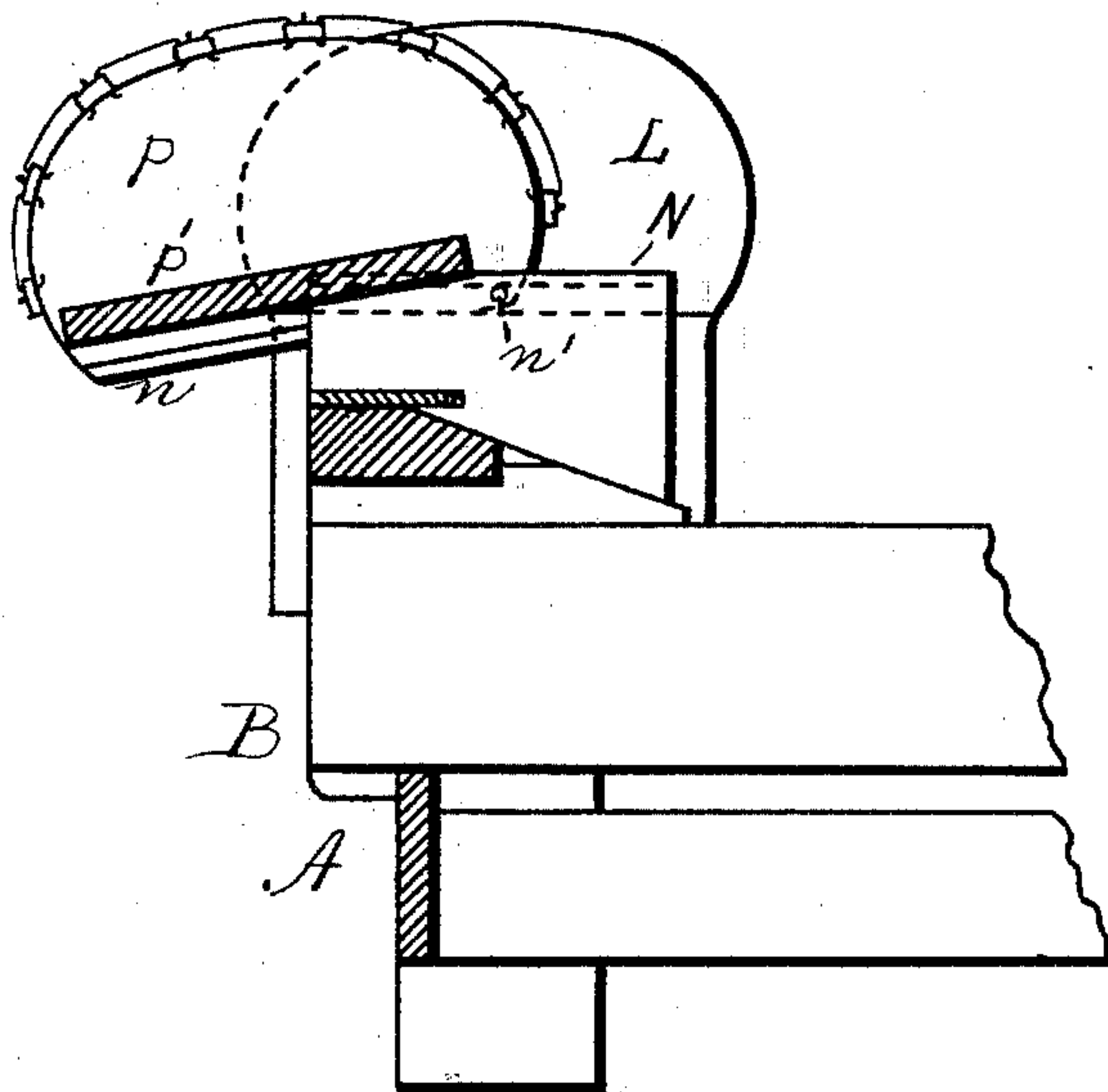


Fig-4-

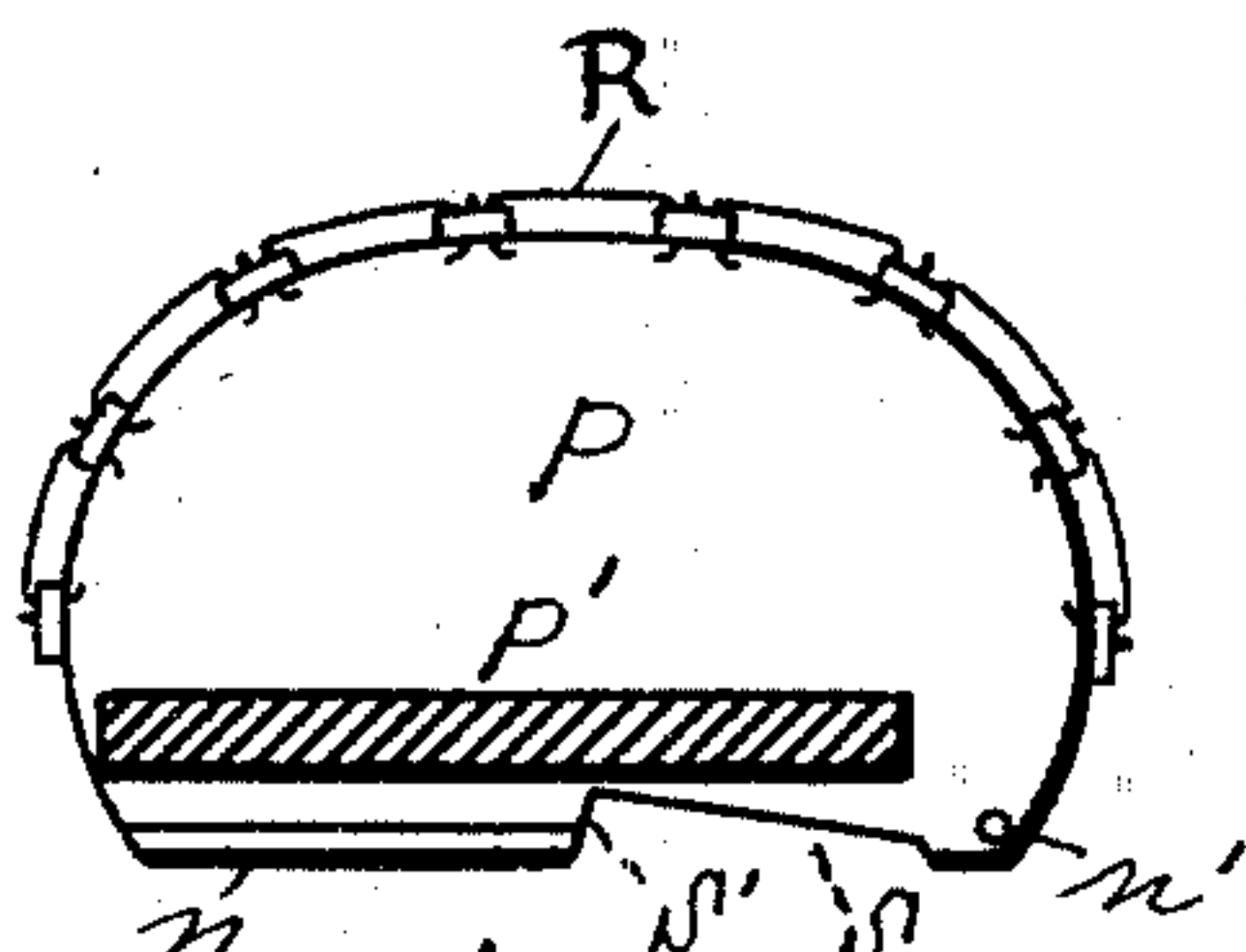


Fig-5-

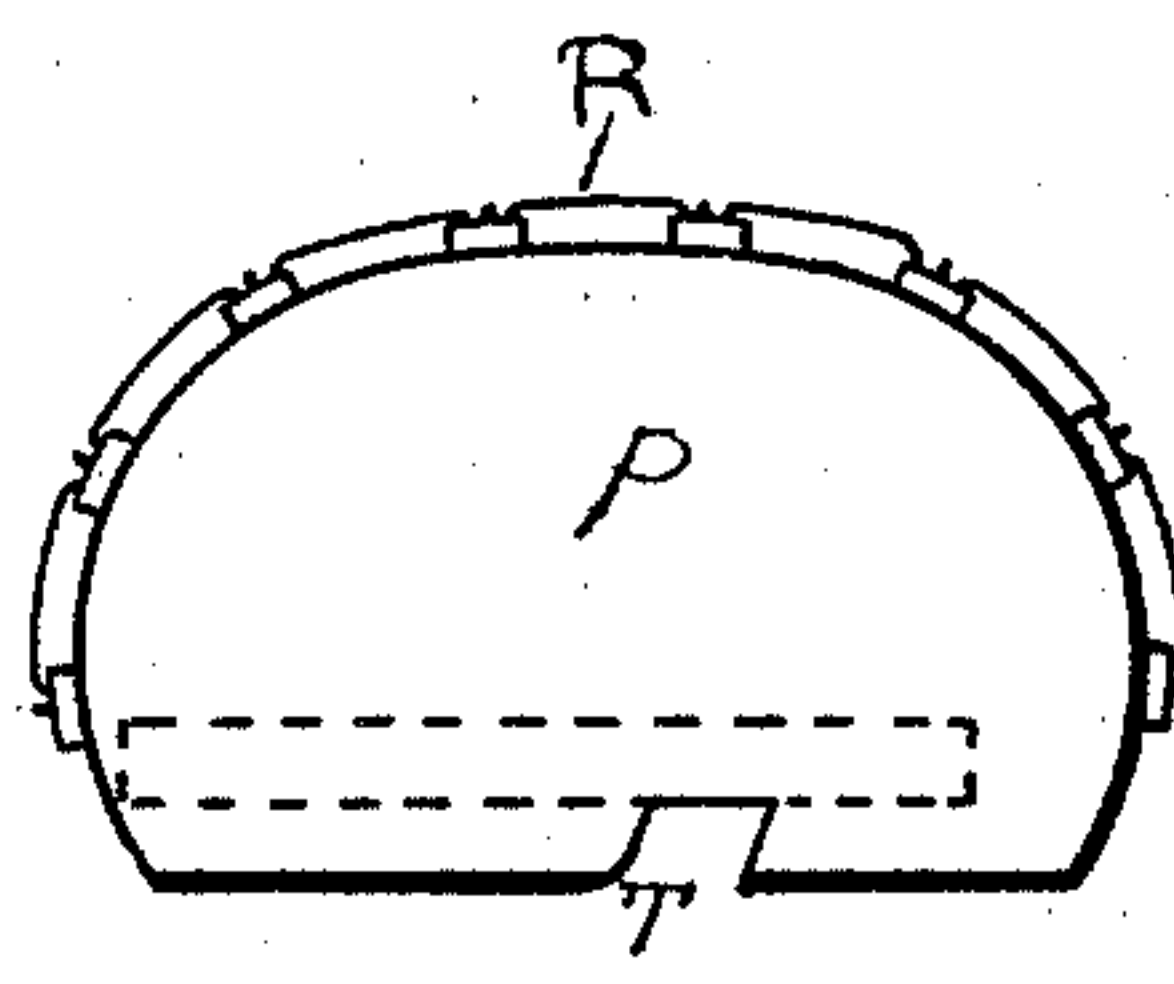


Fig-6-

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# UNITED STATES PATENT OFFICE.

ALBERT H. MOORE, OF BOSTON, MASSACHUSETTS.

## SOFA-BED.

SPECIFICATION forming part of Letters Patent No. 498,016, dated May 23, 1893.

Application filed October 20, 1892. Serial No. 449,505. (No model.)

*To all whom it may concern:*

Be it known that I, ALBERT H. MOORE, a citizen of the United States, residing in Boston, in the county of Suffolk, in the State of Massachusetts, have invented new and useful Improvements in Sofa-Beds, of which the following is a specification.

This invention consists in the novel construction and arrangement of parts hereinafter described whereby a sofa-bed is produced which is more perfect in its construction and better adapted for the two purposes for which it is employed,—viz., the use as a bed and the use as a sofa—than any now in the market.

In the accompanying drawings, in which similar letters of reference indicate like parts, Figure 1 is a plan view of my improved sofa-bed in position for use as a bed, and with a large portion of the wire spring removed to better illustrate the invention. Fig. 2 is a central cross vertical section of the sofa-bed in the position shown in Fig. 1, the head-rest having been removed. Fig. 3 is a similar section with the device in the position for use as a sofa, the head-rest being in position. Fig. 4 is an enlarged longitudinal vertical section on line *x* Fig. 1, looking toward the front. Fig. 5 is a section on the same line, of the head-rest removed. Fig. 6 is an elevation of the other end of the head-rest.

In the drawings no upholstery is shown.

A and B represent respectively the lower and upper portions of the frame, *i. e.*, the portion which, whether the device is used as a sofa or as a bed, rests upon the floor. The portion B is hinged to and swings up from the portion A in order to provide an accessible receptacle for bed-clothing, &c., in the ordinary manner, and this feature not being new is not particularly illustrated in the drawings.

C is the outer side rail of the frame of the portion which, when raised, serves as the back of the sofa, *c* being the canvas stretched thereon. The end pieces C' of this frame are hinged at C'' to the rear corner posts A' or to brackets *a* rigidly secured to said posts, or to both brackets and posts as shown.

D D are vertical bars, hinged outwardly at *d* to the rear posts E, and with their upper ends hinged inwardly at *d'* to the lower ends of upright bars D' whose upper ends are

hinged at *d*<sup>2</sup> to the rail C, as shown in the different figures. The bars D' are connected near their lower ends by the horizontal bar D<sup>2</sup>. These bars D D' serve to hold the back in the position shown in Fig. 3, the lower ends of the bars D being seated upon the posts E and the lower ends of the bars D' resting on the upper ends of the bars D, and the whole constituting practically, toggle joints.

When the back is to be lowered in order that the device may be used as a bed, the bar D<sup>2</sup> is grasped and pulled outward with the effect of dropping the bars D D' into the position shown in Figs. 1 and 2 in which the bars D' are vertical but are at right angles with the frame C which is horizontal,—and serve with the bars D as legs for supporting the back in its horizontal position in which it, in connection with the rest of the device, may be used as a bed.

Both the back and seat portions of the sofa-bed are provided with the style of spring known as the "national spring," and illustrated in Figs. 1, and 2. This style of spring is particularly advantageous as allowing both portions of the bed to be constructed with less depth than is usually the case.

It is found in practice that when the device is to be used as a sofa, it is desirable that the seat portion should be somewhat less yielding than when it is to be used as a bed. In this invention, the two portions F' and F' of the national wire spring, which are stretched respectively upon the back frame C C' and the frame B, are of even tautness when the device is in the position shown in Figs. 1 and 2 for use as a bed, so that under such circumstances there is no difference in the yielding ability of the two portions. But when the back is raised in order that the device may be used as a sofa, the portion F' of the spring, *i. e.*, the portion secured to the frame B, is rendered automatically more rigid and somewhat less yielding by means of the following mechanism, viz., the bent rod H whose opposite ends are loosely held at H' in the rear corner posts A', the wire chains I which extend from said rod to the upper or side rail C of the back, the wire chains J whose front ends are secured to the inner edge of the front rail of the frame B below the spring F', and whose rear ends are connected by spiral springs J'



with the rod H, and upright or strut wires K extending from the wire chains J to the wire spring F'.

The wire chains I and J need no detailed description, as they are similar in construction to the wires of which the springs F F' are composed.

In operation, when the device is in position to be used as a bed, the rod H is swung down by gravity into the position shown in Fig. 2 and the connecting chains I and J hang loosely; but when the back is raised into the position shown in Fig. 4, the chains I swing the rod H up as shown in said figure and draw the chains J taut by means of the springs J', so that the strut or tightening wires K support the wire spring F' centrally and render it stiffer and less yielding. The springs F at the back, however, are not affected but remain as yielding as they were when the back was down.

At the opposite ends of the front rail of the frame B, are situated two upright pieces L and N. The piece L extends up sufficiently, and is of the required shape to cover the outer end of the head-rest below described, while the piece N is shorter. The head-rests consist of the two end pieces P, the cross-piece P', and the "national wire spring" R.

At the lower end of the inner side of the outer end-piece P, see Figs. 4 and 5, is a horizontal tenon or rib *n*. This tenon extends from the outer edge to the edge S' of a triangular notch S which is cut in the lower edge of the outer end-piece P, and between this notch and the inner edge is a dowel-pin *n'*. The inner end-piece P has a notch T cut in its lower edge nearly rectangular in shape. (See Fig. 6.) The head-rest is slid horizontally into the position shown in Fig. 4, and when in such position the lower end of its outer end-piece P lies in the groove L', (Figs. 2 and 3) formed by the two pieces L N, and the rib *n* and dowel-pin *n'* lie in the horizontal groove N' in the piece N. The inner end P of the head-rest simply rests on the frame A. The opposite ends of the frames

A B are similarly constructed for the reception of head-rests, so that when the device is used as a sofa, there may be a head-rest at each end.

When the device is to be used as a bed, one of the head-rests is slid out of its position, laid upon the frame C C', and secured by means of hooks and eyes S or other suitable devices to the other head rest.

When it is desired to lengthen the sofa-bed, the head-rest may be slid back into the position shown in Fig. 4, in which it is tipped down rearward, not only lengthening the sofa-bed, but lowering the head-rest which lies with its triangular notch S S' on the rear edge of the end of the frame, and its nearly rectangular notch T caught on the piece A<sup>2</sup> of the frame A. Of course cords or other equivalents can be used if desired, in place of the chains I J.

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

1. In a sofa-bed, in combination, the frame A B provided with the wire spring F', the back frame C C' provided with the wire spring F, the bent or curved rod H having its ends loosely held in opposite ends of the frame A, a chain or chains leading from said rod to the side or top rail C of the back frame, a chain or chains leading from said rod to the front rail of the main frame beneath the wire spring F', and struts or uprights K connecting the wire spring F' with the said chains beneath, whereby the raising of the back tightens, and the lowering of it loosens the said chain and wire spring F', substantially as set forth.

2. In a sofa-bed, the combination of the head-rest P R P' provided with the tongue or rib *n*, dowel-pin *n'* and notches S T, and the frame B provided with the uprights L N and grooves L' N' and the frame A A<sup>2</sup>, substantially as set forth.

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