

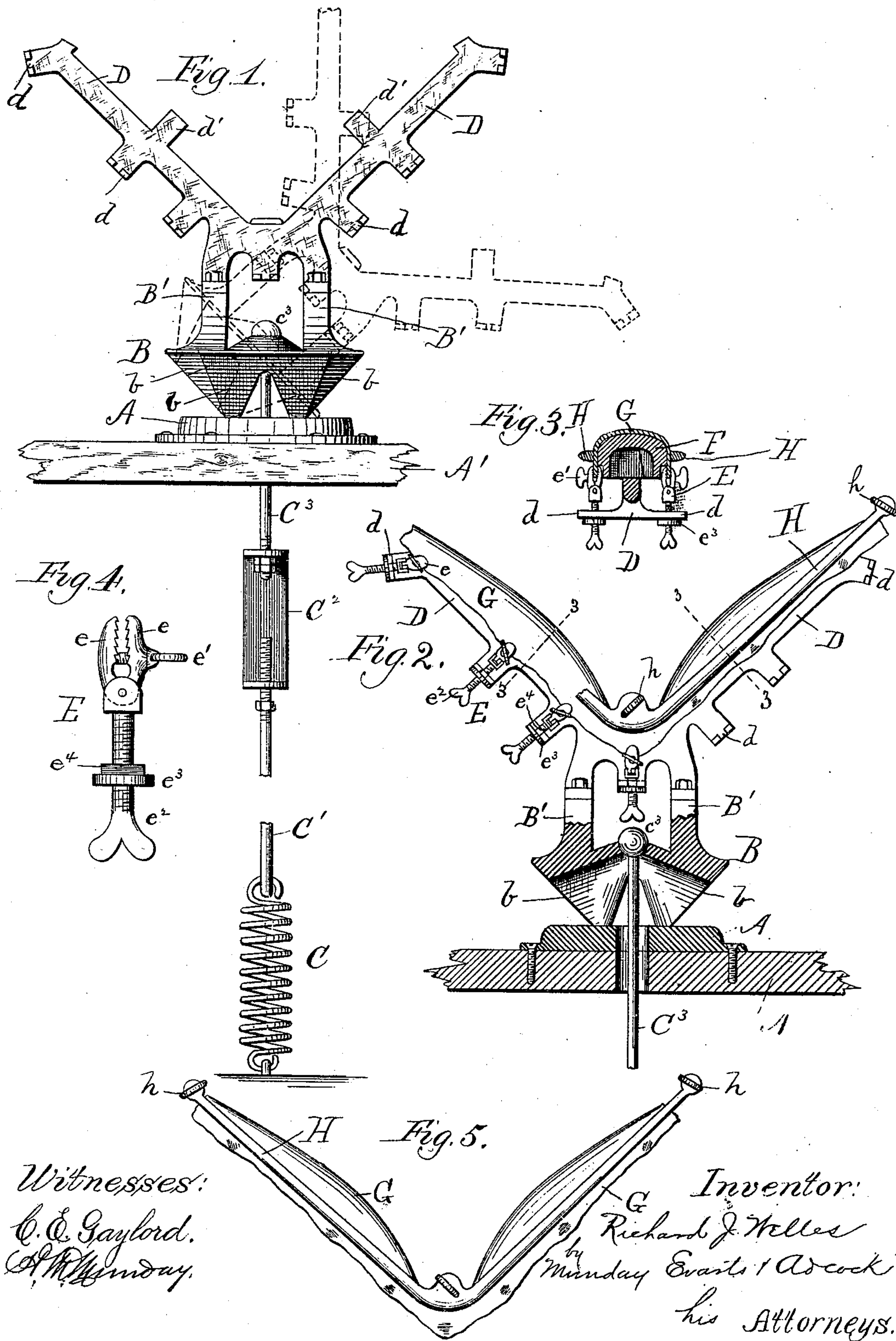
(No Model.)

R. J. WELLES.

MACHINE FOR CRIMPING HARNESS PADS.

No. 270,712.

Patented Jan. 16, 1883.



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# UNITED STATES PATENT OFFICE.

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## MACHINE FOR CRIMPING HARNESS-PADS.

SPECIFICATION forming part of Letters Patent No. 270,712, dated January 16, 1883.

Application filed September 25, 1882. (No model.)

*To all whom it may concern:*

Be it known that I, RICHARD J. WELLES, a citizen of the United States, residing in Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Machines for Crimping Harness-Pads, of which the following is a specification.

This invention relates to machines for crimping or shaping the covers of harness-pads, and its object has been to improve the work done by such machines as to uniformity and general excellence, and especially to cause the pad to assume a form agreeing in outline with the horse's back, so that when finished and put in use the pad will not injure the animal's back, and will also be more durable than the pads as now made. The machine is also adapted to quicken and render less laborious the crimping part of the manufacture, and is very useful in cases where the cover for both parts of the pad is made of a single piece of leather.

The invention consists in the novel construction and combination of devices hereinafter fully set forth and described.

In the accompanying drawings, which form a part of this specification, Figure 1 is a front elevation of my improved machine with the mold or form removed. Fig. 2 is a partial elevation of the same with the form in place, showing also some of the parts in section. Fig. 3 is a cross-section upon the line 3 3 of Fig. 2. Fig. 4 shows one of the stretching-clamps detached and enlarged. Fig. 5 shows a blank secured upon the form after it has been stretched thereon and in condition for removal from the machine.

Similar letters of reference indicate like parts in the several figures of the drawings.

In the drawings, A represents a bed-plate secured upon a bench, A'.

B is a peculiarly-formed piece of metal, flexibly held down upon A by the spring C, secured to the floor, and the intermediate rod, C', the adjusting-link C<sup>2</sup>, and the rod C<sup>3</sup>, the latter being surmounted by a ball, c<sup>3</sup>, resting in a correspondingly-shaped socket located in the center of the piece B. The peculiarities of this piece B, which I call the "many-bottomed base," in addition to its flexible ball-and-socket attachment, are that it is provided with four inwardly-inclined sides or bottoms, b, upon each of which in turn it may be made to rest. In-

teriorly it is hollowed out, so that when tipped over upon the inclined sides there will be no interference with the rod C<sup>3</sup>. This base-piece is therefore, by reason of its construction and manner of attachment, capable of use in five positions—viz., the upright position shown in the drawings and four different inclined positions, one of which is indicated by broken lines, Fig. 1; and it may be changed from any of these positions to any one of the remaining four positions in an instant by the operator. The spring yields to the force exerted upon the piece B sufficiently to allow these changes, but is of proper strength to hold the piece down firmly upon the bed-plate, whichever of the five positions it occupies.

It should be noticed that in each position the spring force is exerted at the center of the side upon which the piece may be resting—that is to say, the ball-and-socket joint is located in each of the several positions directly over the center of the supporting-face, so that the piece is rendered steady and stable during the crimping operations. This is due to the peculiar conformation of the piece B, and will be understood from the drawings.

At the top of the piece B are two upright arms, B', upon which is secured a frame composed of two oppositely-inclined arms, D D, each of which is provided at its extremity and at intervals with laterally-extending slotted projections d, in the slots of which are inserted the stretching screw clamps E, to be described below. The projections d extend each way from the arms D, and similar ones are employed at the center or junction of the arms D.

The form or last F, which is of the size and shape it is desired to impart to the pad, except that perhaps the angle between the halves thereof is slightly more obtuse than that which the pad should possess, is first placed upon the frame D D, the projections d' d' entering the hollow under side of the last and holding it secure. The blank or cover G is then laid on the form, and the clamps E brought into use. The edges of the material are seized by the clamping-jaws e of these clamps, tightened by the screw e'. The screw e<sup>2</sup>, which forms the body of the clamps, is then slipped into the slot of one of the projections d, with the shoulder e<sup>3</sup> below said projection, and as soon as the opposing pairs of these stretching devices have



been thus applied the stretching may begin by turning the screws  $e^2$ . The square nut  $e^4$ , just above the shoulder  $e^3$ , fits the slot of the projection  $d$ , so that said shoulder is prevented  
5 from rotating with the screw.

At proper times during the crimping the leather is rubbed by the operator, and it is here that one of the chief benefits of my invention is obtained—viz., the facility with which  
10 the operator is enabled to get at every part of the material for this purpose. The last can be rotated upon the bed to any point, and it can be operated upon in the upright position, or in any of the inclined positions as well, and the  
15 rotation may take place whichever of the five bottoms the base is resting upon. The operator is thus permitted to use his strength to the best advantage and to perform his work quickly. The stretching may be adjusted to  
20 the requirements of the different parts of the last, and very uniform and perfect work be thus done. After the leather has been brought to the shape desired a clamping-frame consisting of bars  $H$ , at each side extending the length  
25 of the last, and transverse tightening-screws  $h$  at the extremities, is applied to the form, so that the stretching-screws may be released and the last be removed from the frame. Fig. 2 illustrates both the stretching and the clamp-  
30 ing by this frame after stretching.

The last and the blank secured upon it after stretching present the appearance given in Fig. 5, and may be lifted off and another last and blank be substituted therefor upon the frame  
35 without loss of time. The slots in the projections  $d$  permit all needed range of lateral adjustment to the stretching-screws, so that said screws may be used with work of varying widths. Indeed, the only part of my apparatus which needs change to accommodate different sizes and widths of work is the last or  
40 mold.

Of course it will be understood that I do not wish to be limited to a five-bottomed base for the supporting-frame, as any other convenient  
45 number of bottoms may be used.

By the use of this invention a pad-cover consisting of a single piece of leather may be shaped so perfectly that the bridge portion  
50 thereof will be as free from wrinkles as any other part, and so that no subsequent shaping of that portion will be required. This is largely, if not entirely, due to the fact that my last is a complete last for the whole pad, instead of  
55 being a last for half of the pad only, or a last for the whole pad with the limbs lying in

a straight line with one another. The arms of the supporting-frame serve also as levers whereby to change from one of the bottoms of the base-piece to another, and render easy that  
60 operation.

I claim—

1. In a machine for crimping harness-pads, the combination, with a supporting-frame and stretching devices, substantially as described,  
65 of a last conforming in shape and outline to the shape and outline desired for the completed pad, substantially as specified.

2. The combination, with devices, substantially as described, for stretching the blank  
70 imposed thereon, of a last for the entire pad, having its extremities inclined as in the completed pad, whereby the bridge of the pad may be completely and perfectly shaped at the same time with the crimping of the other parts, sub-  
75 stantially as specified.

3. The combination, with a supporting-frame and stretching devices secured thereto, of the removable last  $F$  and a clamping device for retaining the leather after stretching, substan-  
80 tially as specified.

4. The combination, with a last and the supporting-frame, of the stretching-clamps laterally adjustable in the frame to and from the longitudinal center of the last, substantially as  
85 specified.

5. The supporting-frame consisting of the arms  $D D$ , having the lateral slotted projections, and the stretching-screws inserted in said slotted projections, in combination with  
90 a pad-last, substantially as specified.

6. The supporting-frame mounted upon a revoluble and many-bottomed base, essentially such as described, in combination with such  
95 base, a bed for the base, and yielding devices for securing the base to the bed, substantially as specified.

7. In a machine for crimping harness-pads, the many-bottomed base, held down by a yielding attachment connected to the base by a ball-and-  
100 socket joint, substantially as specified.

8. The many-bottomed base or stand, held down by a yielding attachment, in combination with a supporting-frame mounted thereon, and having spreading arms  $D$ , serving as levers  
105 in making changes in position, substantially as specified.

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