

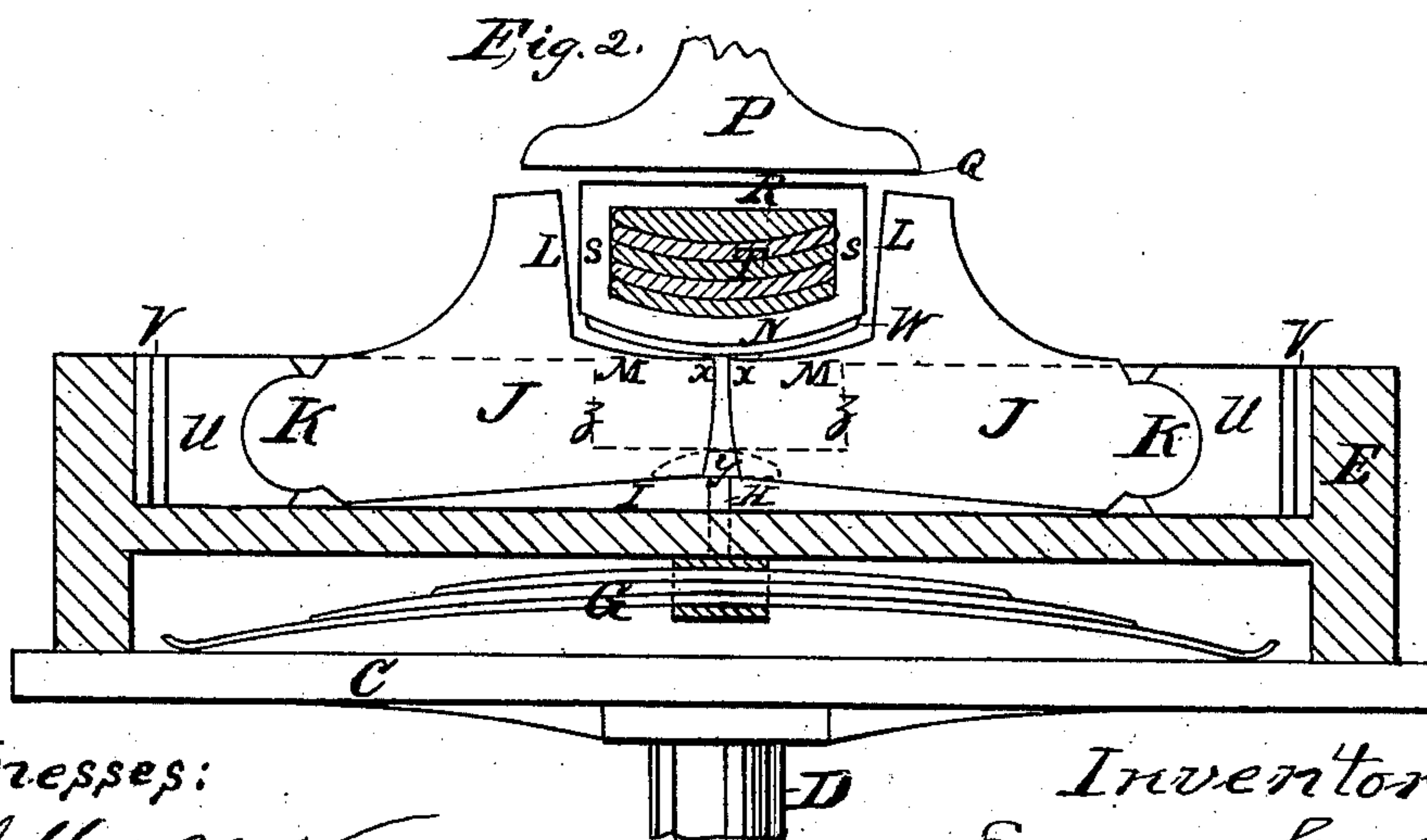
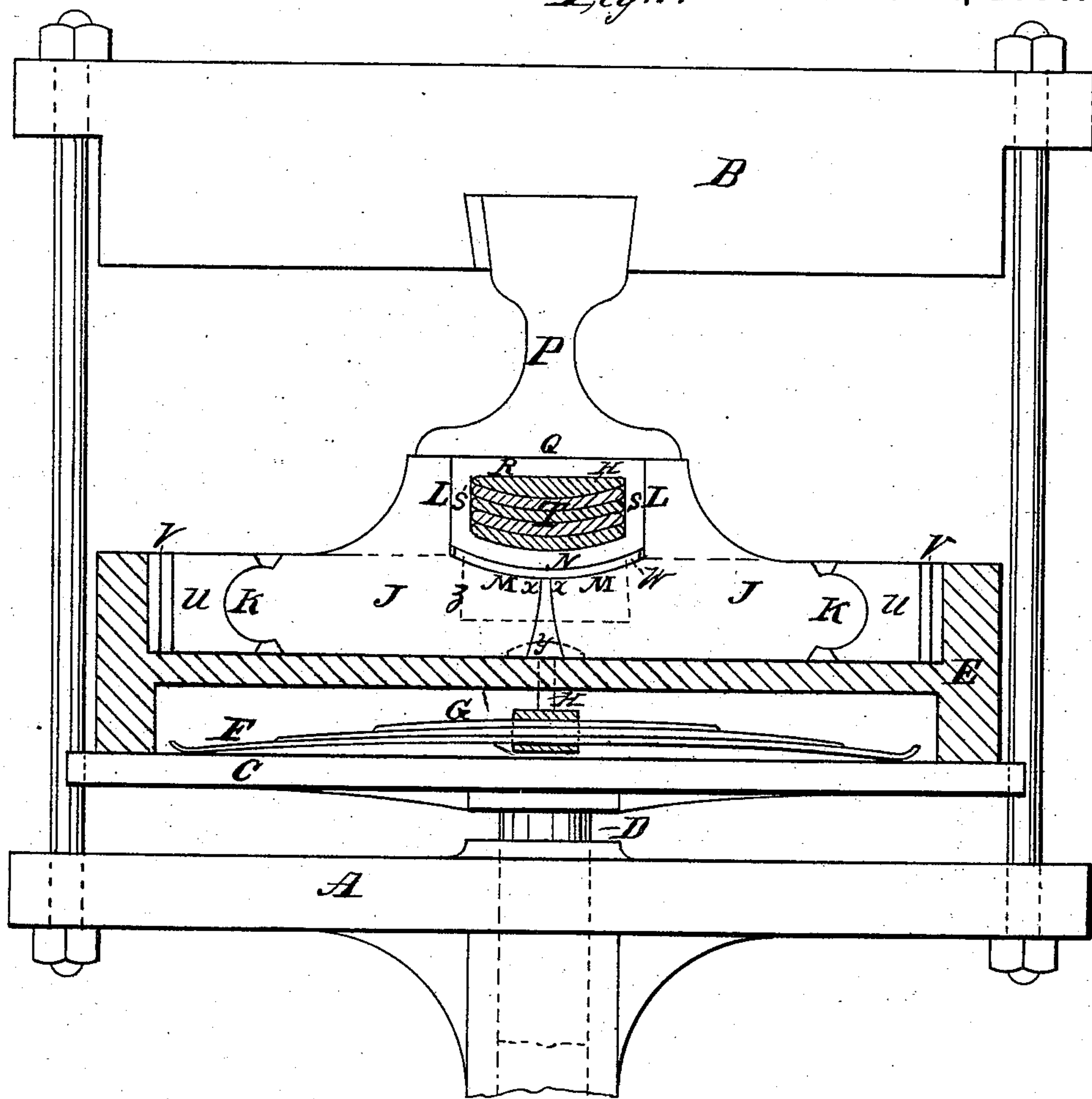
(No Model.)

E. SPAULDING.

MACHINE FOR SETTING BANDS ON ELLIPTIC SPRINGS.

No. 334,397.

Patented Jan. 12, 1886.



Witnesses:

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# UNITED STATES PATENT OFFICE.

EDWARD SPAULDING, OF BROOKLYN, NEW YORK.

## MACHINE FOR SETTING BANDS ON ELLIPTIC SPRINGS.

SPECIFICATION forming part of Letters Patent No. 334,397, dated January 12, 1886.

Application filed February 18, 1882. Renewed May 8, 1884. Serial No. 130,814. (No model.)

*To all whom it may concern:*

Be it known that I, EDWARD SPAULDING, of Brooklyn, Kings county, and State of New York, have invented a new and useful Improvement in Machines for Setting Bands on Elliptic Springs, of which the following is a specification.

The invention consists of apparatus for setting and squeezing bands on elliptic springs by means of dies that close on and squeeze opposite sides of the bands by swinging toward a plane in which said dies are pivoted, and a ram or press-head co-operating therewith, the said squeezing-dies being constructed with two-part faces, the parts of which are arranged nearly at right angles to each other, and so that the band is squeezed sidewise between the side faces of the dies, and it is squeezed the other way—that is, top and bottom—by the other faces of said dies and the ram by which said dies are closed, thus enabling the bands to be squeezed and set at once and alike on all the four sides. The said apparatus is also so contrived as not to require the construction of a special press, and so as to be readily applied to and removed from presses of ordinary construction, whereby presses employed for other purposes may be employed for setting bands, and the expense of a special press may be saved in many cases where other presses are available, which is a matter of considerable importance, because very powerful and expensive presses are required to do the work.

Figure 1, in the accompanying drawings, is a side elevation of a portion of a hydraulic press of ordinary construction with my improved squeezing and setting apparatus applied to it, and shown partly in section and partly in elevation, the parts being in the position as when the setting of a band on a spring has been completed, the spring also being shown in cross-section. Fig. 2 is a similar view of the apparatus in the positions as when the spring is to be removed after the setting of the band, and preparatory to the application of another spring for setting the band thereof.

A represents the bed-plate, B the head, C the follower, and D the ram, of an ordinary hydraulic press. E is a removable base-plate of substantial construction, adapted to be

placed on and removed from the follower C readily. This base-plate has a groove or chamber, F, along the under side, in which is placed a spring, G, resting on follower C, and having a stud-pin, H, extending up through a hole in the metal and projecting into a chamber, I, in the upper side of the base-plate and parallel with chamber F, in which chamber two squeezing-jaws, J, are arranged end to end, with faces L on the confronting ends, and fixed on the pivots K at the opposite or outer ends, so as to open by the raising of the confronting ends and close by the depressing of the same—that is to say, by turning on said pivots. Said jaws have also other faces, M, below faces L, and nearly horizontal, but sufficiently concave to correspond with the form of the convex side N of the band when the jaws are closed on the band; but they will be flat if the band is flat, or otherwise conform in shape to it.

Over the face ends of the jaws there is a head-block extension, P, depending from the head of press B, the under side of which, Q, is flat, to serve for a stop device to arrest and close the face ends of the jaws when raised against it by the ram D. It also forms the part of the squeezing device that acts on the flat side R of the band, while faces L squeeze sides S and faces M squeeze the concave side N, all of which act simultaneously and with uniform effect, squeezing and setting the band firmly on the spring T to any required degree of pressure, which may be regulated as to the sides S by adjusting the pivot-blocks U by means of packing V or other approved means, and as to the sides R and N by means of thicker or thinner plates W, placed on the faces M, which also serve to prevent the side N of the band from being squeezed in and pinched between the corners X of the jaws.

It will be noticed that by the location of the faces L and M above the face of the axis of the pivots K they close on the bands with great power while moving toward said plane, the power of the press being increased in the proportion that the movement of the ram is greater than that of the faces L toward each other. The bands are heated before being slipped onto the plates, so as to be squeezed while hot, but the plates of the spring are cold.

The purpose of the spring G is to raise and



open the jaws when the ram D descends by means of the stud-pin H, which has a head, Y, bearing against them. The spring is depressed when the jaws are closed, so that it opens them when the follower descends. The jaws might of course be closed directly against the head B of the press; but as the press is designed, as before stated, for other uses, it has greater distance between the head and follower than is demanded for the use to which it is here applied; hence the extension P is employed, and for some purposes the base-plate E is allowed to remain on the follower, as if it were a part of it, and therefore it has a dovetail notch across the face of it, as indicated by the dotted lines Z, for the attachment of dies or other devices, in the same manner as extension P is attached to head B, but said groove is not necessary to the setting of bands.

It will be noticed that by the arrangement of the jaws J and their pivot-blocks U in the groove of the base-plate E they are so detachably connected as to be applied and removed readily, which enables the apparatus to be prepared for work without material expenditure of time and labor, and to be as readily disposed of for other work. I do not, however, limit myself to this particular arrangement of the said detachable connection; nor do I limit myself to the employment of a base-plate, E, that is detachable from the follower C of a press, for such follower may be readily contrived to receive the spring G and jaws J, and still serve the purposes of a follower for an ordinary press. Other means may be employed for raising and opening the jaws—for example, cords and weights, or cords or chains connecting them with the head of the press—

or if the press were arranged to work horizontally, so that the jaws would not fall back, they might be opened by hand, and I do not therefore limit myself to any opening device.

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

1. A pair of dies arranged to close by turning on pivots, and a ram combined therewith, substantially as described, the said dies having side faces, L, acting upon and squeezing the band sidewise between them, also having faces M, acting with the ram and squeezing the top and bottom of the band, substantially as described.

2. The combination of jaws J and base-plate E with the head and follower of a press, substantially as described.

3. The combination, with the head and follower of a press, of jaws J, having faces L and M, and being detachably pivoted to their supporting-plate by means of blocks U, and said blocks and jaws being adjustable by packing V, substantially as described.

4. The combination of jaws J, having faces L M, and being pivoted, as described, with base-plate E, having grooves I and F, and arranged and adapted for application to a press, substantially as described.

5. The combination of plate W with jaws J, having faces L and M, and being pivoted, as described, and arranged in a press or other means for closing them, substantially as described.

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Witnesses:

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