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No. 753,431.

PATENTED MAR. 1, 1904.

E. L. PUPKE.  
SETTING MACHINE.  
APPLICATION FILED JUNE 8, 1903.

NO MODEL.

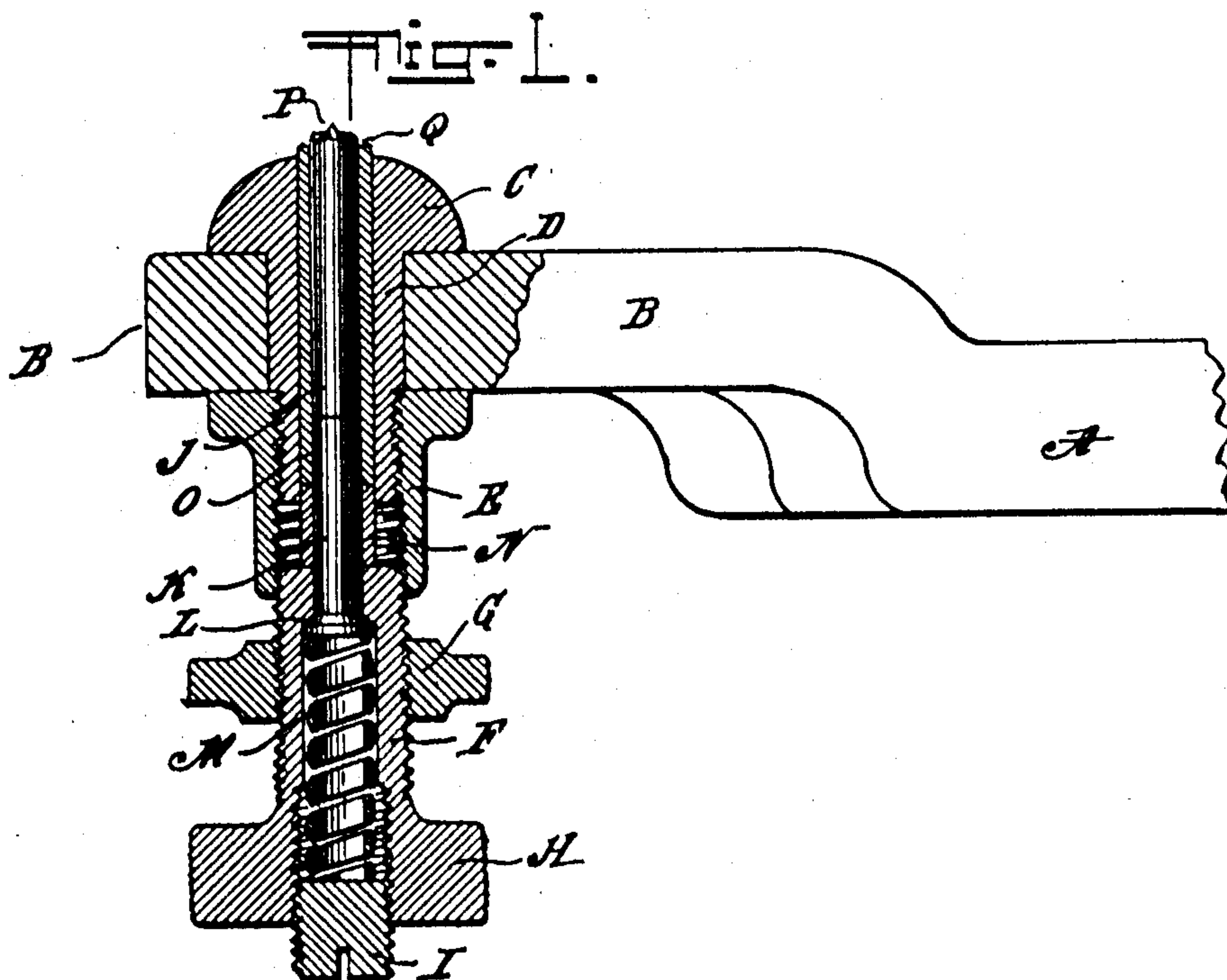


Fig. 2.

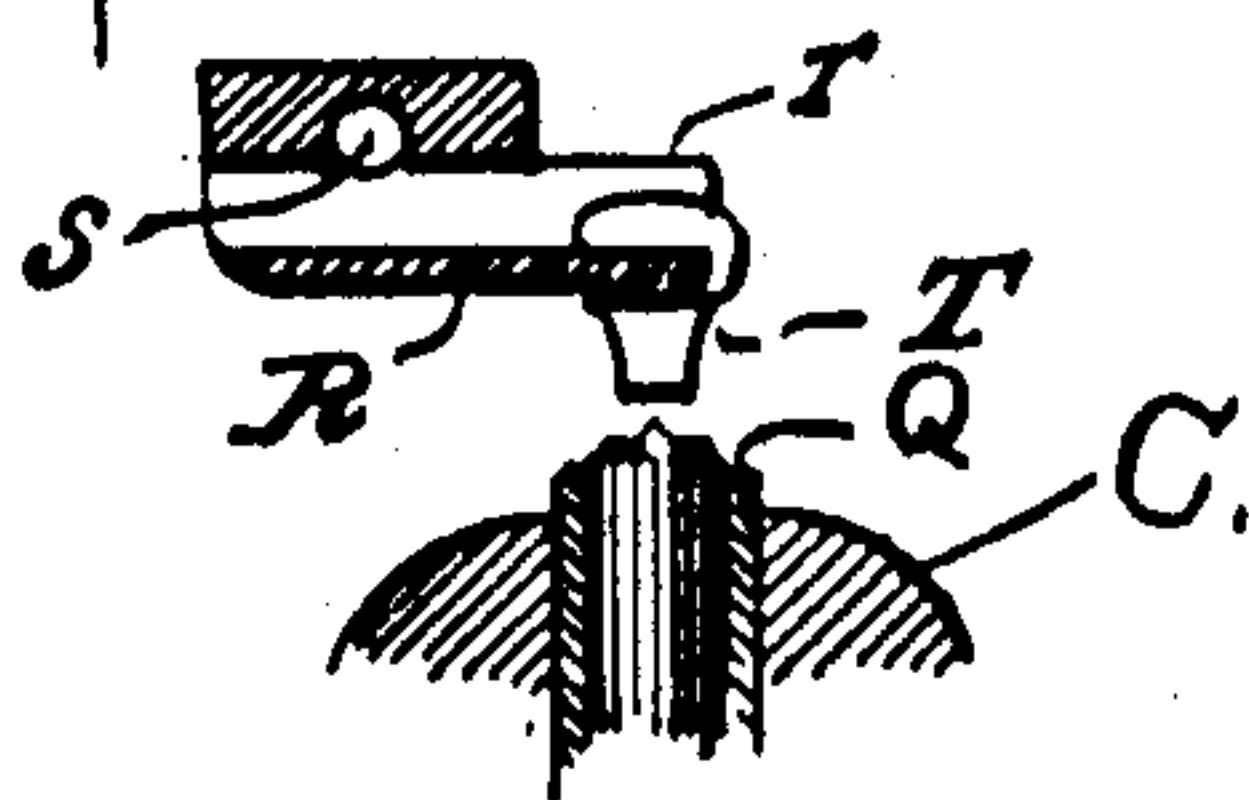


Fig. 3.

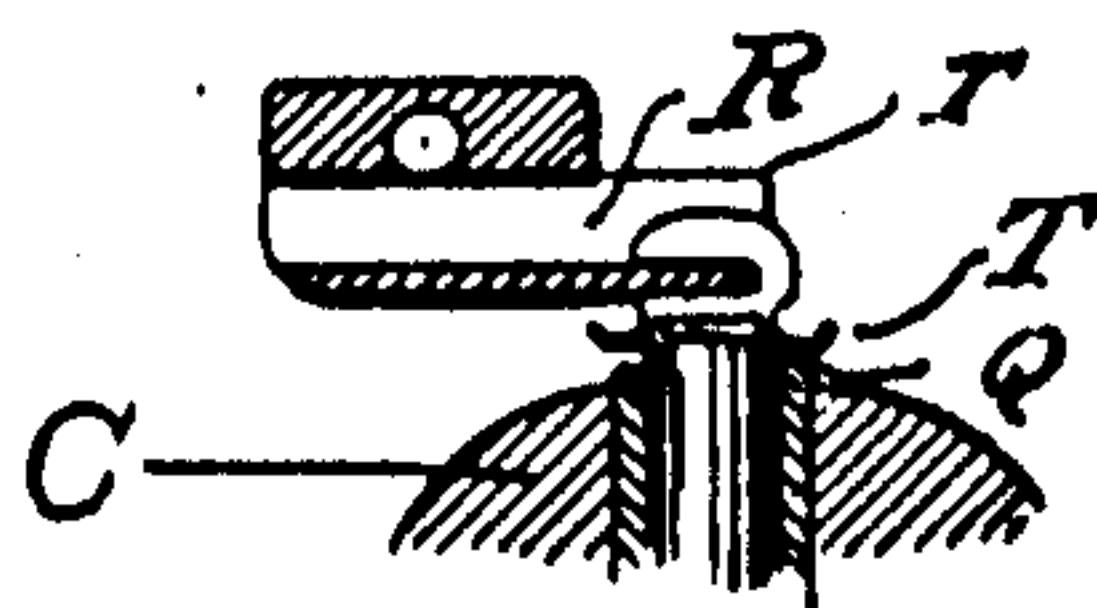
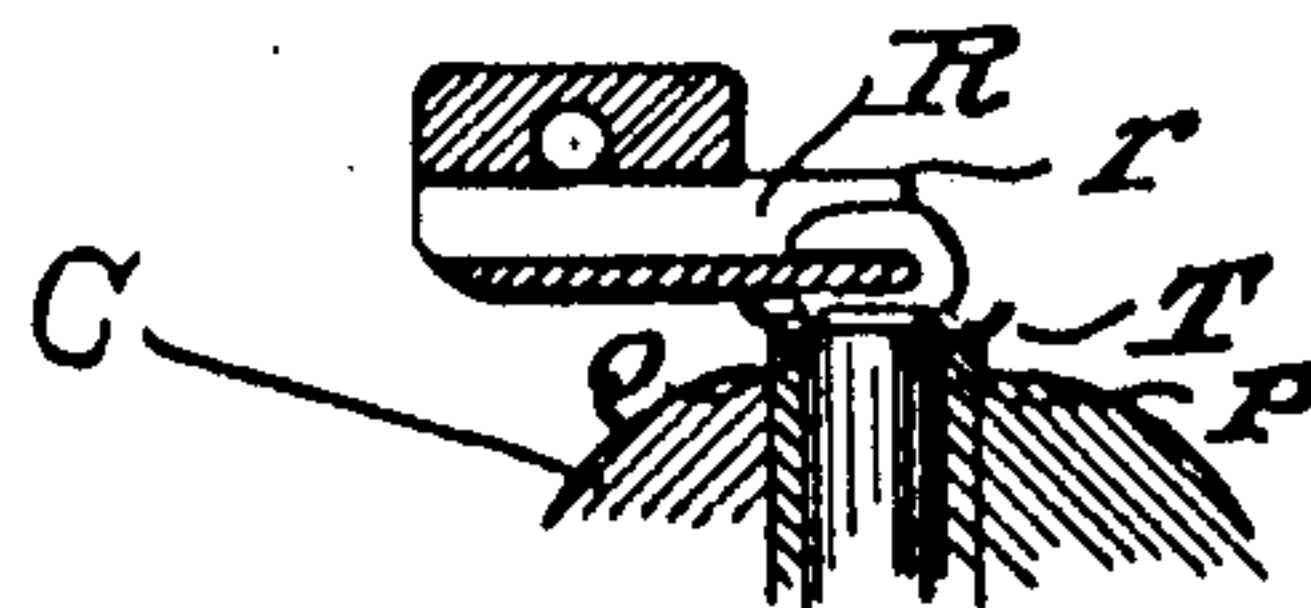


Fig. 4.



WITNESSES:

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INVENTOR

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# UNITED STATES PATENT OFFICE.

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## SETTING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 753,431, dated March 1, 1904.

Application filed June 8, 1903. Serial No. 160,468. (No model.)

*To all whom it may concern:*

Be it known that I, EBERHARD L. PUPKE, a citizen of the United States, residing and having a post-office address at East Orange, county of Essex, State of New Jersey, have invented certain new and useful Improvements in Setting-Machines, of which the following is a full and true description, reference being had to the accompanying drawings.

In the said drawings, which show the preferred embodiment of my improvements, similar letters refer to like parts in the several views.

The form of machine shown is one especially adapted for setting and clenching lacing-hooks into a shoe-upper or a glove-body or other material.

In machines for setting and clenching lacing-hooks a device is provided, usually called a "setting-toe," for holding the lacing-hook, and there is a second device, called an "anvil," which spreads and clenches the body of the lacing-hook. Various forms of machines embodying said parts have been devised. The form preferred by me and shown in the accompanying drawings and which is described and claimed in my United States Patent No. 692,843 employs a setting-toe connected with a movable press-gate and a fixed anvil, and the body of the lacing-hook is forced through the shoe-upper or other material and is then spread outwardly and clenched by being forced against the anvil, which is provided with a projecting tapered end. This tapered end splits the clenching-body and guides the lower edges thereof outwardly. The anvil is also provided with a body which completes the clenching. In practice, however, when it is desired to tightly clench the lacing-hook the projecting tapered end aforesaid exerts a great strain upwardly against the setting-toe, and the latter is frequently broken and must be replaced.

The object of my invention is therefore to provide a setting-machine with parts which shall take up and yield to said strains while securing a close and effective setting and clenching of the lacing-hook or other articles.

Referring to the accompanying drawings, Figure 1 is a vertical sectional view of a preferred embodiment of my invention, and Figs. 2, 3, and 4 show different stages of operation of the parts.

Only so much of a setting-machine is shown as is deemed necessary to illustrate the invention.

Referring to Fig. 1, A indicates the table of the machine, and B the anvil-supporting arm. C indicates the anvil-support, and D the downwardly-extending portion thereof, preferably shaped to conform to the opening in the arm B. E indicates a tightening-sleeve internally threaded to fit the lower threaded end of the part D. G indicates a nut threaded upon a tubular advancing and retracting plug F, the exterior threads of which fit the interior threads of the tightening-sleeve. For the purpose of advancing and retracting the part F it is provided with an integral handle H, having a milled edge. At its lower end the part F is internally provided with threads, and a plug I, adapted for ready adjustment therein by means of a screw-driver or other tool, is fitted into such lower end. J indicates a cylindrical spindle which may be made of heavy steel wire, and K is a shorter spindle or pin provided with an enlargement or head L at its lower end. If desired, J and K may be integral. M indicates a strong coiled spring fitted between the upper end of plug I and the bottom of L. The movement of the former adjusts the pressure exerted by the spring M against the spindle J. I prefer that the spring M shall be quite heavy and capable of a limited extension as such form of spring will permit when the plug I is retracted, the retraction of the upper end of the spindle with relation to upper end Q of the sleeve without employing complicated mechanisms. Said spindle is fitted in a sleeve O, constituting an anvil, which rests on a shorter sleeve N, and this is shown as surrounding the shorter spindle K and fitted between the lower end of O and the upper end of the advancing and retracting plug F. The upper end of the spindle is provided with the tapered point P and may be plain, or, as



shown, may have the usual splitting ribs employed when the hook-body is an eyelet which must be split in the process of setting and clenching. Preferably the sleeve O has its upper end formed to assist in clenching the prongs of the hook. For this purpose the inner rim of the sleeve is slightly beveled and curved, as shown in Q. After the position of the upper end of the spindle J and of the surrounding sleeve has been fixed by advancing or retracting the part F, as desired, and the tension exerted by spring M upon the spindle has been regulated by movement of the plug I, the locking-nut G is moved upward to lock the part F in position. The parts will then be in position shown in Fig. 1. As stated, the spring M is heavy and it is preferably capable of but little extension and compression. By reference to Fig. 1 it will be obvious that if the plug I is retracted the spring will follow and the spindle will follow the spring. The advance and retraction of the plug will therefore bodily move the spring and the spindle, whereby the latter may be more or less projected from the sleeve.

Referring now to Figs. 2, 3, and 4, when it is desired to set the lacing-hooks a hook is fitted upon the setting-toe in such manner as to have the jaw of the hook fit the bottom plate of the toe and with the eyelet or tubular part T of the hook extending downwardly. The setting-toe, which is formed of a metallic piece having the bottom R and upstanding walls  $r$ , is secured to a press-gate by means of a screw which passes through oppositely-disposed openings S in the walls  $r$ . Upon reciprocation of the press-gate the eyelet T is brought down against the shoe-upper or other article, and the point P of the spindle assists in centering the hook while the ribs split the eyelet-walls. The downward movement of the setting-toe continues until the upper end of the spindle comes in contact with the under part of the bottom plate R. At this time the hook has been split and its ends outwardly turned, as shown in Fig. 3. With the prior forms of setting-anvils great strains were necessarily put upon the setting-toe at this time if a close clench of the hook was desired, these strains being due to the fact that there was no yielding of the parts which make up the anvil. In my improvements, however, when the lower end of the setting-toe and the upper extremity of the spindle are in touch any further advance of the setting-toe causes the spindle to move downwardly in the sleeve O and against the pressure of the spring M, which is made quite strong in order to maintain pressure upon the partially-clenched hook. The yielding of the spindle continues until the upper end of the sleeve completes the clenching of the prongs

of the hook, the parts having been previously adjusted by the movement of the plug F, so that there shall be no undue strains upon the sleeve or upon the setting-toe at the conclusion of the downward movement of the latter.

While I have herein described and shown one device which embodies my improvements, it will of course be understood that I do not wish to be understood as limiting my invention to that special form. Modifications will readily suggest themselves to persons skilled in the art, and these will be within the scope of my claims.

What I claim is—

1. In a setting-machine, a setting and clenching anvil provided with a spring-seated spreading device mounted for movement within the anvil, an anvil-support, means for adjusting the spreading device and the anvil within the anvil-support, independently of the adjustment of the spring, and means for independently adjusting the tension of the spring, substantially as described.

2. In a setting-machine, a setting and clenching anvil, an anvil-support, means for locking the support in position, a spring-seated spreading device mounted for movement within the anvil, and means for adjusting the spreading device in the anvil-support independently of the adjustment of the spring, substantially as described.

3. In a setting-machine, a setting and clenching anvil, an anvil-support, and means for locking the support in position, the anvil being provided with a spring-seated spreading device, mounted for movement therein, substantially as described.

4. In a setting-machine, a setting and clenching anvil provided with a spring-seated spreading device projecting from the anvil, and having a tapered spreading end, the said anvil being provided with a beveled rim at the opening through which the spreading device projects, an anvil-support, and means for adjusting the spreading device and the anvil within the anvil-support independently of the adjustment of the spring, substantially as described.

5. In a setting-machine, a setting and clenching anvil-support provided with a sleeve, a spring-seated spreading device projecting from said sleeve, means for adjusting the sleeve and spreading device together within the anvil-support, and means for adjusting the spreading device in the sleeve, substantially as described.

In witness whereof I have hereunto signed my name this 3d day of June, 1903.

EBERHARD L. PUPKE.

In presence of—

WM. H. BERRIGAN,  
JAMES J. COSGROVE.