

E. E. WINKLEY.
RELASTING MACHINE.

Patented June 16, 1896.

FIG. I.

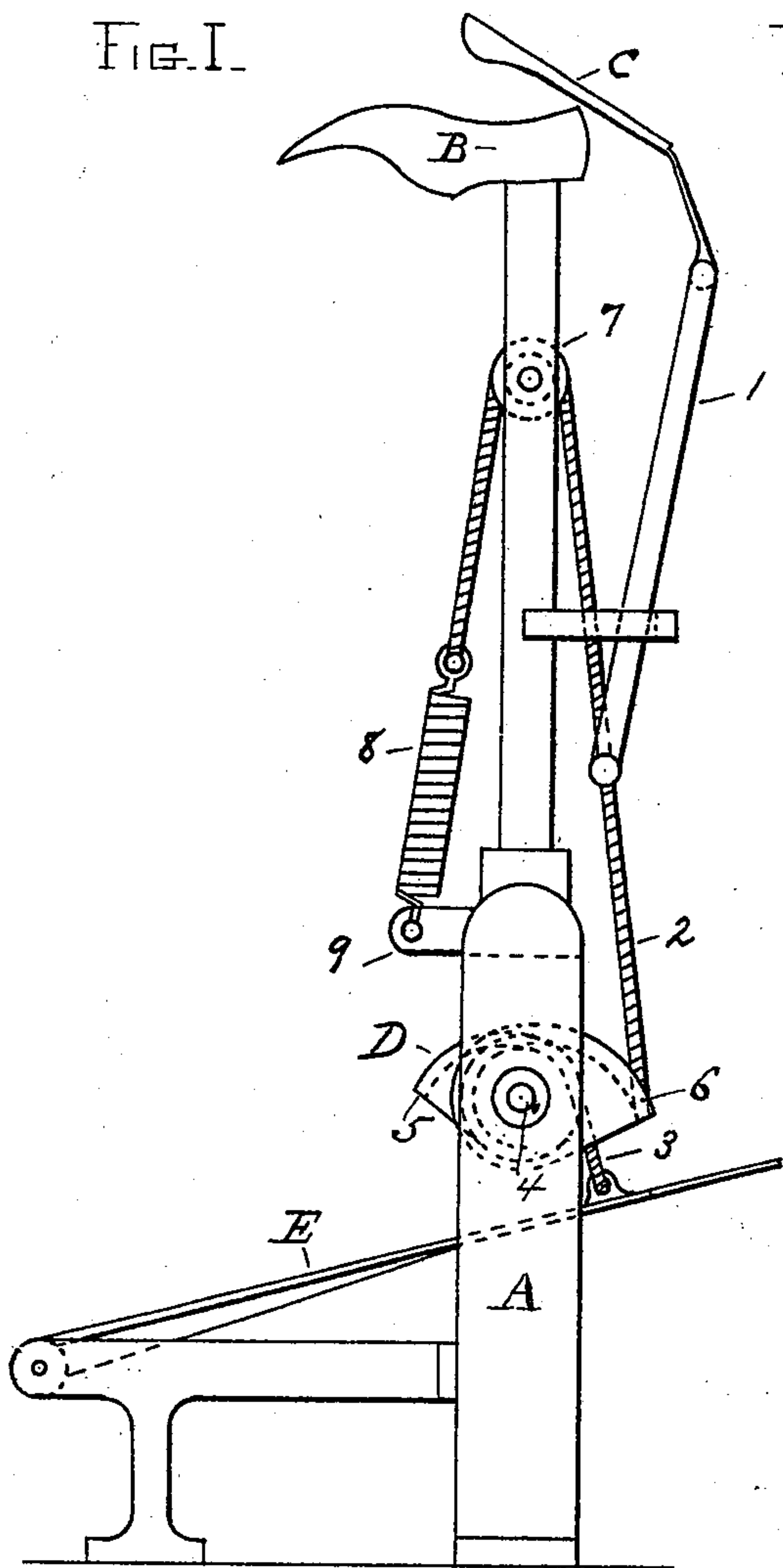


Fig. 2.

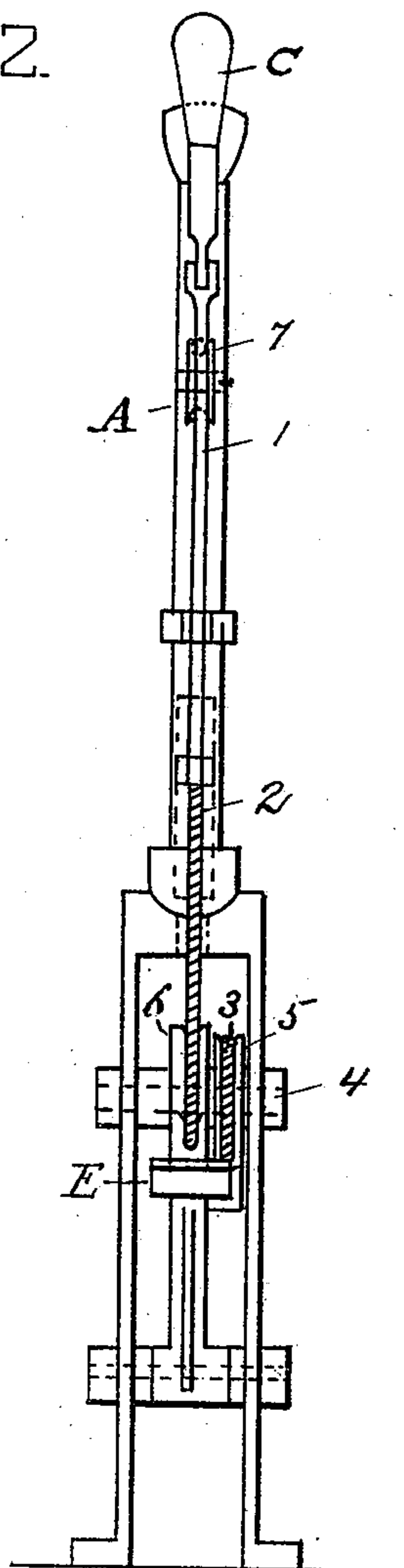


Fig. 3.

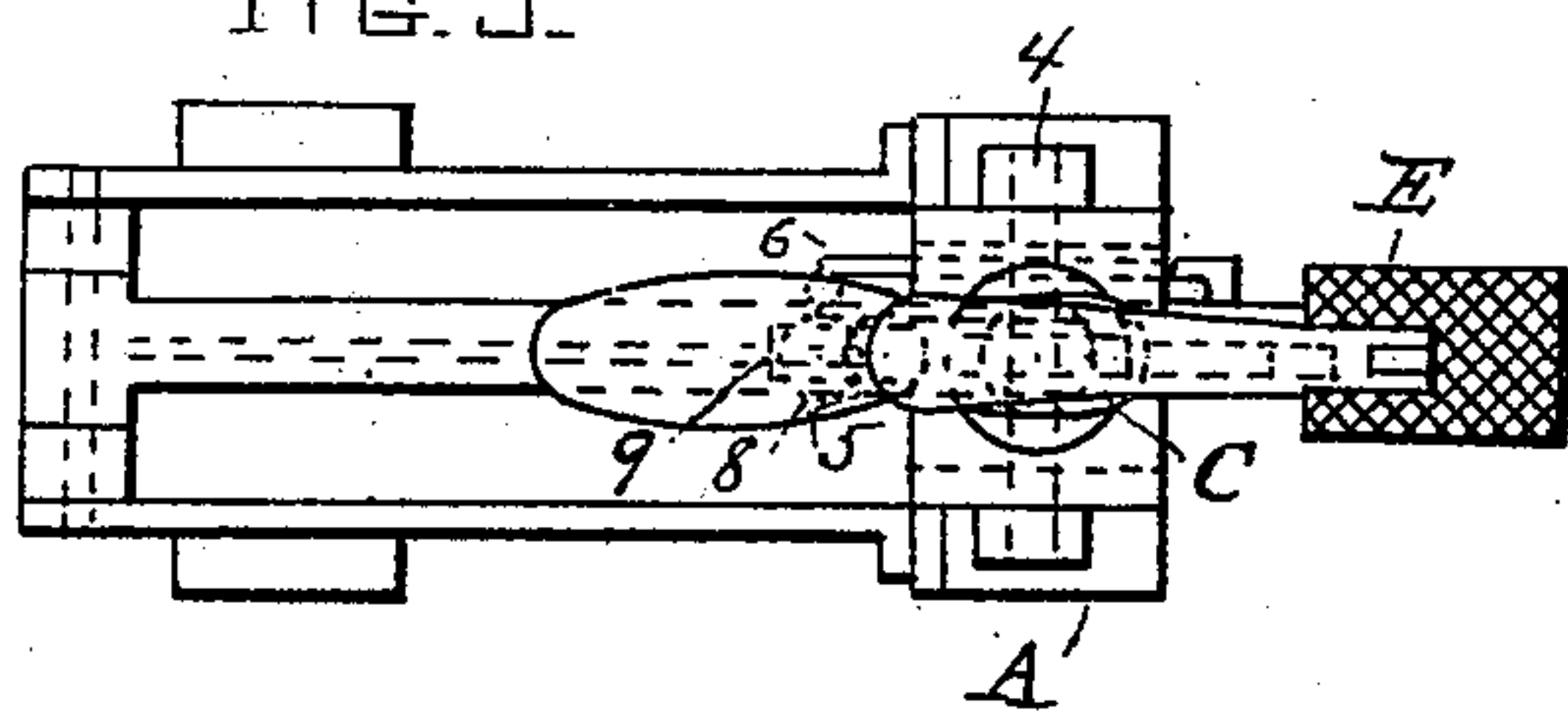


Fig. 4.

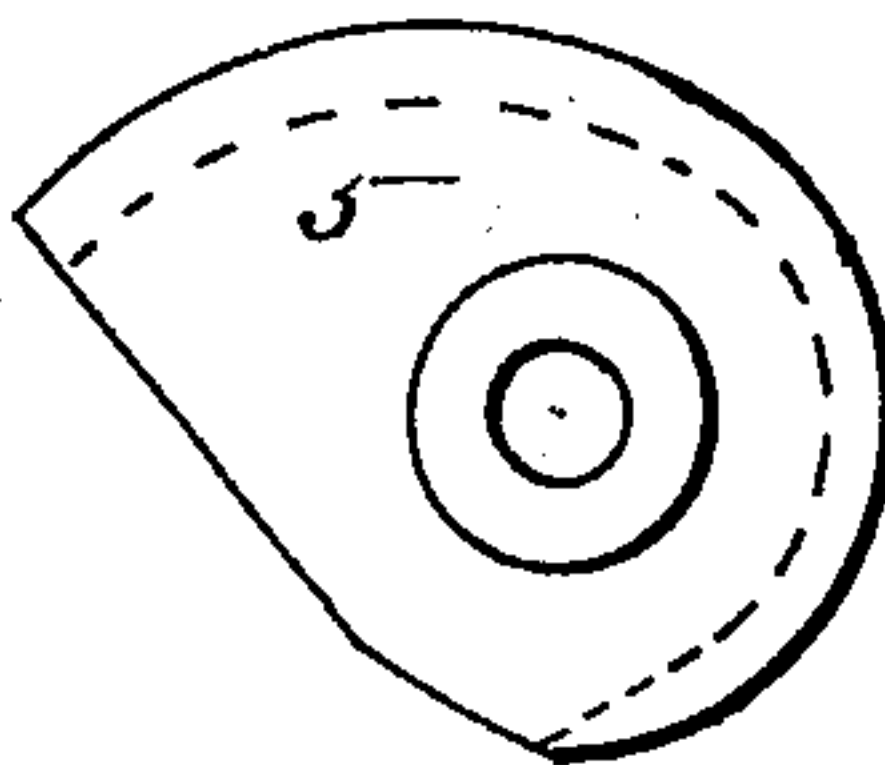
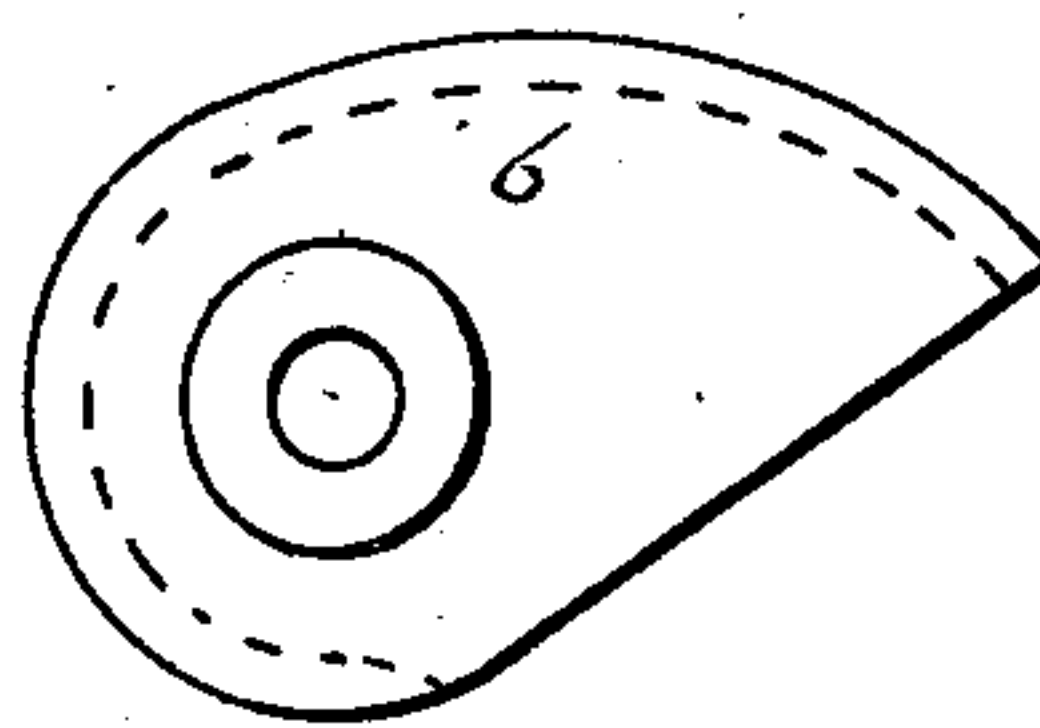


Fig. 5.



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ERASTUS E. WINKLEY, OF LYNN, MASSACHUSETTS.

RELASTING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 562,110, dated June 16, 1896.

Application filed May 9, 1894. Serial No. 510,579. (No model.)

To all whom it may concern:

Be it known that I, ERASTUS E. WINKLEY, a citizen of the United States, and a resident of Lynn, in the county of Essex and Commonwealth of Massachusetts, have invented a new and useful Improvement in Relasting-Machines, of which the following, taken in connection with the accompanying drawings, is a specification.

My invention relates generally to devices of the above class and more particularly to such devices provided with a last-supporting device, a shoe-horn, an operating-treadle, and suitable connections between the treadle and horn.

In the operation of relasting a shoe less power is required at the first part of the operation than at the last part, the greatest power being required to pull out the horn after the shoe has been forced onto the last, which operation occurs at or near the last portion of the stroke of the treadle.

My present invention consists of mechanism combined with the associated parts of a relasting-machine, whereby an increase of leverage is obtained at the point in the operation of the machine where the greatest power is required, the length of the stroke of the treadle remaining the same, or the length of the stroke of the treadle can be shortened without increasing the power required to operate the treadle at the point where the greatest power is required, or both of the above results may be secured together.

My invention is illustrated by the accompanying drawings, in which—

Figure 1 is a side view of relasting-machine embodying my invention. Fig. 2 is a front view of the same. Fig. 3 is a plan view. Figs. 4 and 5 are detached side views of rigidly-connected sheaves.

Similar letters and figures of reference refer to similar parts throughout the several views.

In the drawings, A represents a suitable support for the last-supporting device B and for the working parts of the machine. The last-supporting device B forms no essential part of my invention and may be of any suitable form. As shown in the drawings, it consists simply of a rod extending above the sup-

port A, which fits into the hole usually found in wooden lasts for a similar purpose.

The shoe-horn is shown at C, but forms no essential part of my invention, and other suitable forms of horn may be substituted therefor.

The form of horn shown in the drawings is similar to that shown and described in Letters Patent to Thompson March 7, 1893, No. 493,196, for relasting-machines, to which reference may be had for a full description thereof.

The horn C is secured to a connecting device 1, by means of which it is drawn over the last, as hereinafter set forth. The connecting device 1, as shown in the drawings, consists of a connecting-rod 1, as shown and described in said Letters Patent to Thompson; but the same may be made flexible and a cord or chain substituted therefor without affecting the nature of my invention.

Mounted upon suitable bearings supported by the support A or other suitable means of support are the rigidly-connected sheaves 5 and 6. To the sheave 5 is secured a flexible connection 3, arranged to be wound about the same and connecting it with the horn-operating treadle E, which is conveniently mounted below the sheaves 5 and 6, the arrangement being such that a downward motion of the treadle E unwinds the connection 3 and rotates the sheaves 5 and 6. To the sheave 6 is secured a flexible connection 2, arranged to be wound about the same and connecting the sheave 6 with the rod 1, connected with the horn C, the arrangement being such that when the sheaves 5 and 6 are rotated, as above set forth, the connection 2 is wound upon the sheave 6 and the rod 1 and attached horn C drawn down.

The sheaves 5 and 6 may conveniently be made integral and mounted upon a shaft 4, supported in suitable bearings in support A, which may be conveniently forked near the base to receive the sheaves 5 and 6; but such arrangement is not essential and any convenient means of connecting and mounting sheaves may be substituted therefor.

The sheave 5 may be called the "treadle-connection" sheave, and the sheave 6 the "horn-connection" sheave.

The sheaves 5 and 6 are so arranged with

reference to each other that the most eccentric portion of the horn-connection sheave acts upon said connection during the first part of the stroke of the treadle, while the least eccentric portion of the treadle-connection sheave acts upon the treadle connection, and at the last portion of the stroke of the treadle the most eccentric portion of the treadle-sheave acts upon the treadle connection and the least eccentric portion of the horn-connection sheave acts upon the horn connection, and if the most eccentric portion of the treadle-sheave is farther from the center of rotation than the least eccentric portion of horn-connection sheave power applied to treadle has benefit of leverage thereby created.

It will be evident to one skilled in the art, that by varying the form and arrangement of the sheaves 5 and 6 either a short stroke of the treadle may be secured or leverage gained at points where the most power is required, and as compared with a machine having direct connection between the horn and the treadle both results can be secured.

If desired simply to shorten the stroke of the treadle, the treadle-sheave 5 may be made circular in form and with radius equal to distance from center of rotation to periphery of horn-connection sheave at point of least eccentricity.

A convenient method of yieldingly supporting the treadle and restoring the parts to their original position after a downward stroke of the treadle is as follows: The horn connection 2 is extended over a sheave 7, mounted in suitable bearings in the support A and connected with a suitable spring 8, secured to the suitable support 9. Another convenient method would be a similar arrangement of the horn-

support, dispensing, however, with the spring 8 and support 9 and substituting a suitable weight therefor.

For a description of the operation of associate parts of the machine in the operation of relasting a shoe reference may be had to said Thompson patent.

I do not consider myself limited to the form and arrangement of mechanism hereinbefore described, as I believe myself to be the first to embody in this class of machines mechanism for producing varying leverages between the horn and treadle.

I claim—

1. In a relasting-machine the combination with the shoe-horn and its operating-treadle, of a pair of rigidly-connected sheaves, differently formed with respect to the amount of their eccentricity, interposed between the treadle and the horn, and suitable connections flexible in parts adjacent to the sheaves connecting the same respectively with the treadle and horn, all substantially as described.

2. In a relasting-machine, the combination with a last-supporting post, of a shoe-horn, a treadle at or near the foot of the post, differential levers interposed between the treadle and horn, and suitable connections between the levers and the treadle and horn, substantially as described.

3. The combination with associated parts of a relasting-machine, of a pair of differentiating rocking levers actuated by the treadle and actuating the horn, substantially as described.

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Witnesses:

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