

C. S. DUNBRACK & W. B. VEZEY.  
Machinery for Forming an Imitation Stitch Upon  
the Sole of a Boot or Shoe.

No. 158,633.

Patented Jan. 12, 1875.

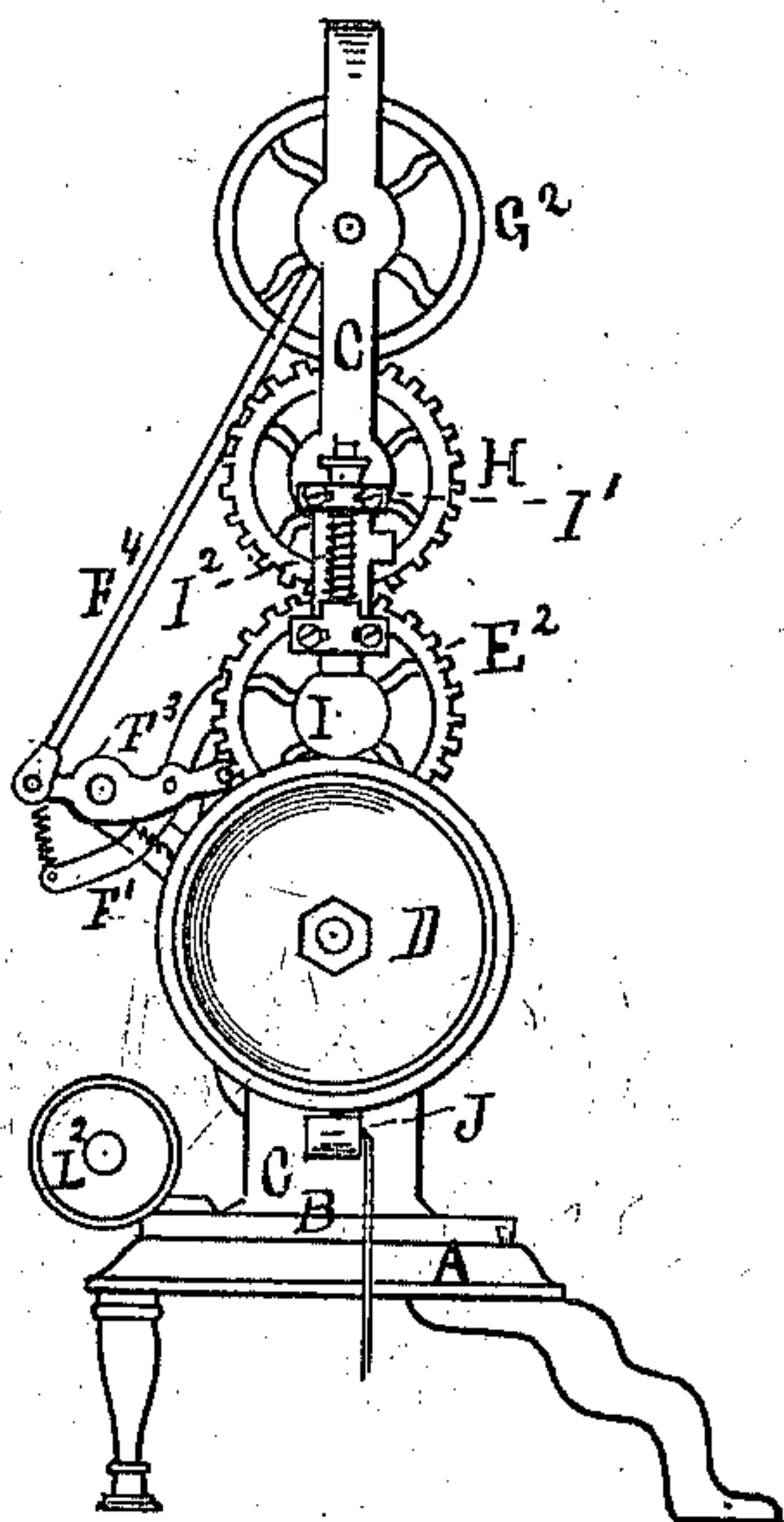


Fig. 1.

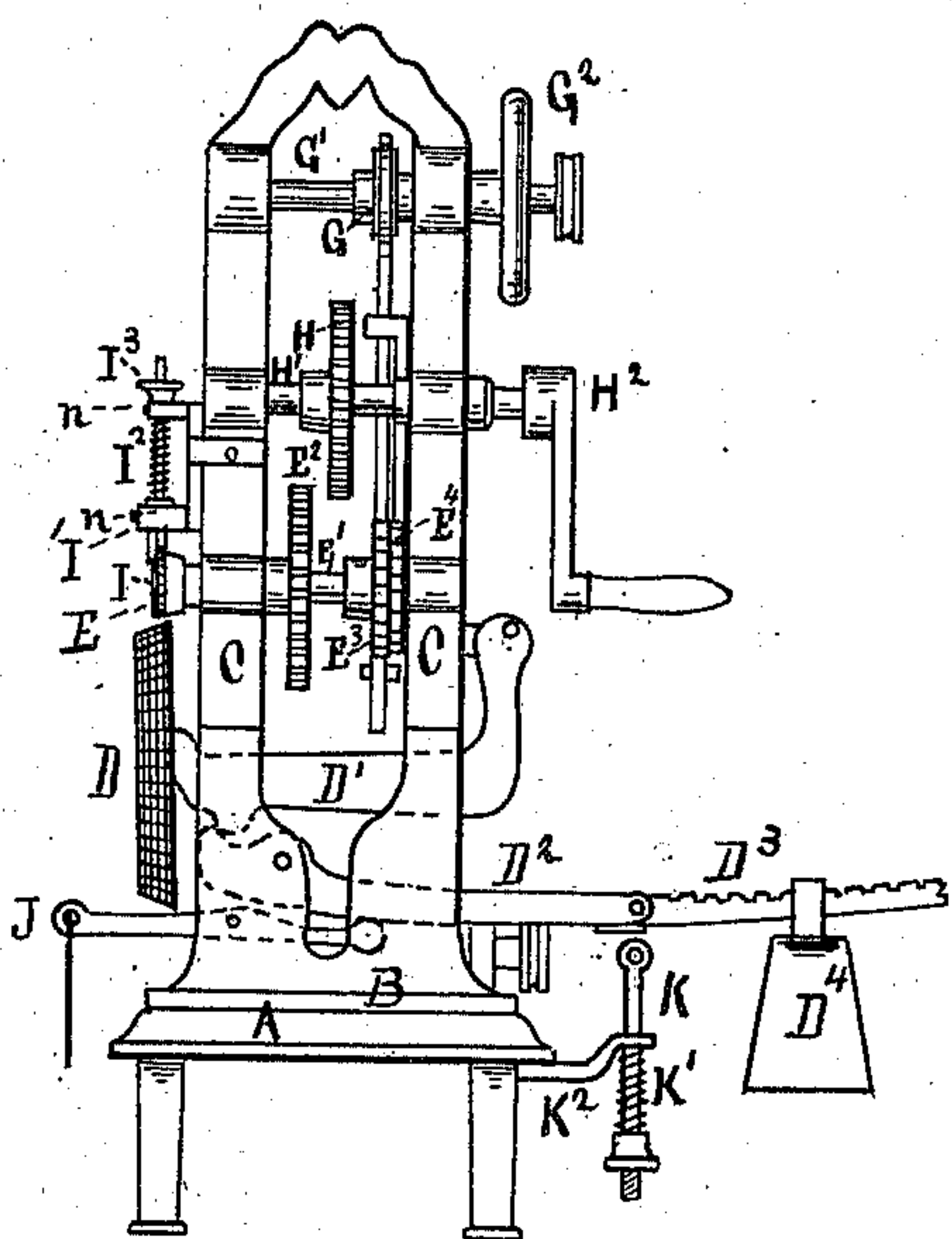


Fig. 2.

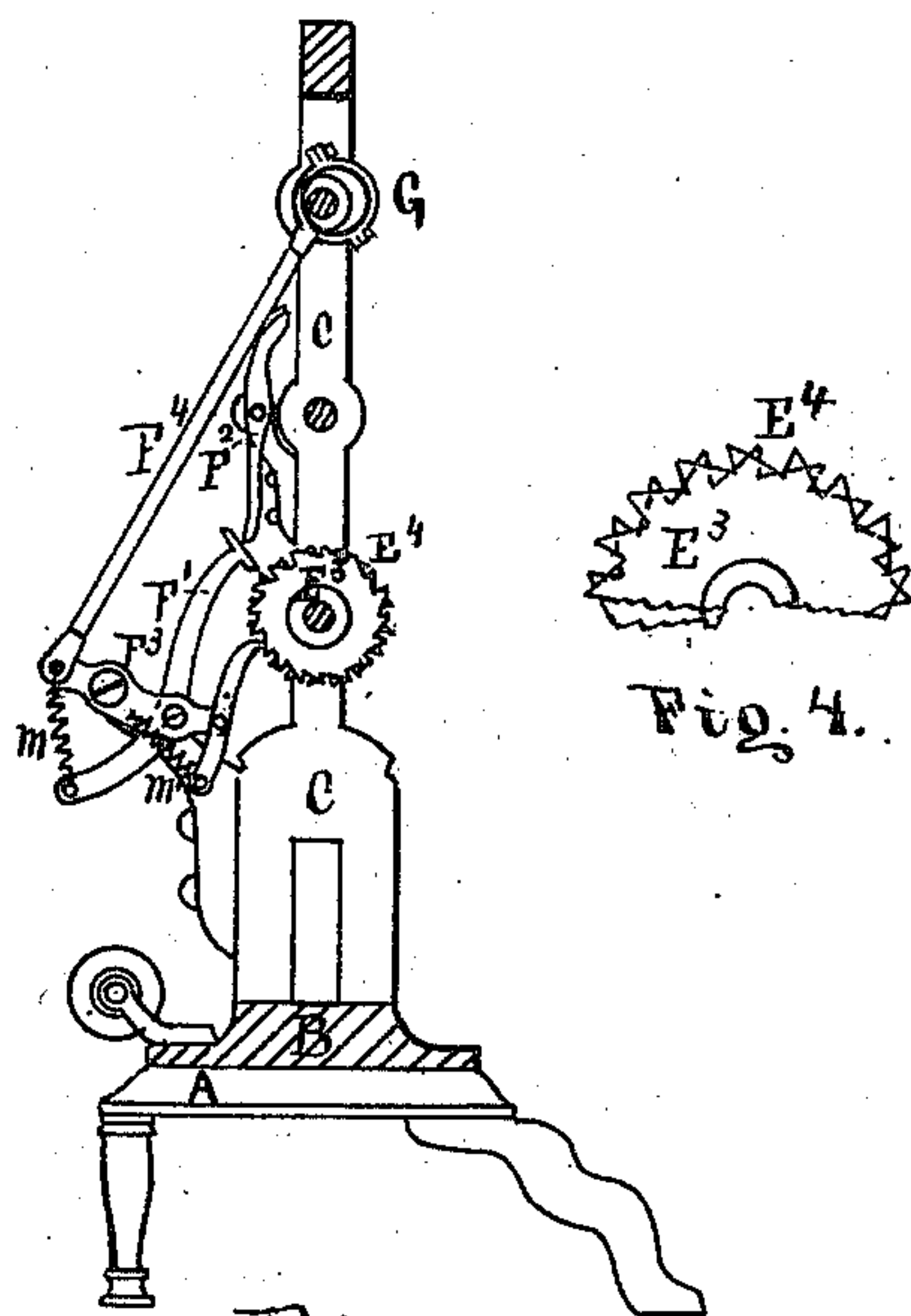


Fig. 3.

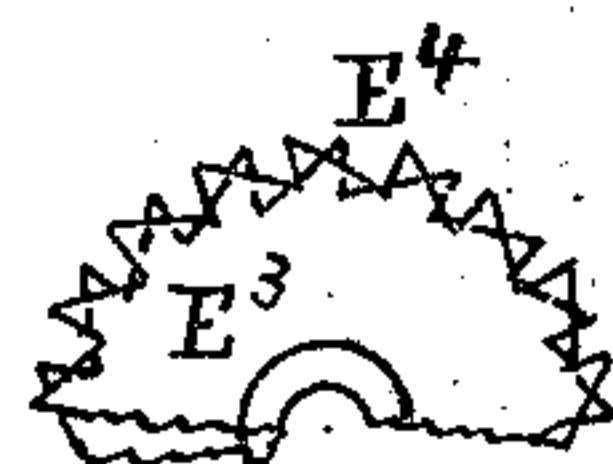


Fig. 4.

Witnesses  
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# UNITED STATES PATENT OFFICE.

CHARLES S. DUNBRACK, OF SWAMPSCOTT, AND WILLIAM B. VEZEY, OF MILFORD, MASSACHUSETTS, ASSIGNORS TO THOMAS COREY, TRUSTEE.

## IMPROVEMENT IN MACHINERY FOR FORMING AN IMITATION-STITCH UPON THE SOLES OF A BOOT OR SHOE.

Specification forming part of Letters Patent No. **158,633**, dated January 12, 1875; application filed July 3, 1874.

*To all whom it may concern:*

Be it known that we, CHARLES S. DUNBRACK, of Swampscott, county of Essex, and WILLIAM B. VEZEY, of Milford, county of Worcester, in the State of Massachusetts, have invented an Improved Machine for Imitation Fair Stitch upon Leather and like material, of which the following is a specification:

The invention is a machine for impressing an imitation fair stitch chiefly upon the outer and exposed upper surface of the soles of boots and shoes. It consists of an imitation-stitch-impressing device, revolving upon a shaft connected with motive power. Immediately beneath said imitation-stitch device is a revolving feed-wheel supporting the bottom of the sole as its upper surface passes under the imitation-stitch device. Upon one extremity of the shaft revolving the imitation-stitch device—said device being at the other extremity of said shaft—are two ratchet-wheels of the same size. The teeth of the said ratchet-wheels slope, or have their longest sides in opposite directions, and one tooth crosses another at the middle of its side, or nearly so. Pawls play into the teeth of the ratchet-wheels, said pawls being connected with an arm or lever on one side of its fulcrum, and on the other end of the arm or lever being joined by a connecting-rod to an eccentric-wheel operated by a shaft driven by motive-power applied to the same. The effect of the machine thus operating is to move forward the imitation-stitch device and the feed-wheel one notch and backward one-half notch, so that the impressing imitation-stitch is impressed a second time, thus making the impression firmer and more polished, even, and hard. It consists also of a double set of machinery. The pawls and connecting-rod may be removed, and the machine may be operated with the forward motion, as in other machines for the same purpose. The improvement consists mainly in its forward and backward motion to impress the imitation fair stitch more evenly and firmly, and in combining two machines in one.

The object of the invention is to do better

work than heretofore accomplished by machines for the same purpose.

We design to make the machine portable—that is, so that it can be taken into any shop and placed upon a bench or floor, and the power applied to its machinery for instant work. And that others skilled in the art may better understand the operation of the machine, we explain that imitation fair stitch impressing device E and the feed-wheel D are not new in mechanism or in their operation, except that the feed-wheel D revolves on the end of the lever D<sup>1</sup> as its axis, (see Fig. 2,) and said lever D<sup>1</sup> is joined by a hinge at its other extremity to the frame C, as shown in said Fig. 2, said lever or arm D<sup>1</sup>, by means of another lever or arm, D<sup>2</sup>, having a third arm, D<sup>3</sup>, and weight D<sup>4</sup>, and a rod, K, and spring K'. The lever J is operated by a treadle to lower the feed-wheel to put the leather under the stitch device. Said treadle is not shown in said Fig. 2. The imitation fair stitch device E is adjusted to the end of a shaft, E<sup>1</sup>. Upon the other end of said shaft E<sup>1</sup>, within the posts C C, will be observed (see Figs. 2 and 3) ratchet-wheels E<sup>3</sup> and E<sup>4</sup>, joined together, having the same number of teeth, but the longest side and slope of the teeth run in opposite directions and cross each other, as shown. Into these teeth pawls F and F<sup>1</sup> play. The pawl F, operating also as a lever, is attached to and has a fulcrum-pin or screw at one end of a lever or arm, F<sup>3</sup>, and plays into the ratchet E<sup>3</sup>. The other end of said pawl F is operated by a spring, M', which is also attached to the arm F<sup>3</sup>. (See Fig. 3.) Said pawl F, playing into the ratchet E<sup>3</sup>, regulates the forward motion of the machine, forming the imitation-stitch. The pawl F<sup>1</sup>, operating also as a lever, plays into the ratchet E<sup>4</sup>. It is attached to and has its fulcrum between the fulcrum of the pawl F and the fulcrum of the lever F<sup>3</sup> at the end playing into the ratchet. Said pawl F<sup>1</sup> has a cross-piece, (see Fig. 3,) and one end of said cross-piece plays into the ratchet, and the other end is operated upon by one end of the lever F<sup>2</sup>, and said lever F<sup>2</sup> at its other end, having a short arm, is operated



by the connecting-rod  $F^4$ , said connecting-rod  $F^4$  being attached to, at one extremity, the eccentric  $G$ , and at its other extremity to the short arm of the lever  $F^3$ . The said pawl  $F^1$  also is attached by its other extremity, by means of a spring,  $M$ , to an arm of the upright post  $C$ . (See Figs. 1 and 3.) On moving forward the device  $E$  and the feed-wheel  $D$  one notch or motion, the lever  $F^2$  catches the cross-piece upon the end of the pawl  $F^1$ , and holds said pawl  $F^1$  and draws backward the device  $E$ , so that while the advance is a whole motion or notch the backward motion is one-half, and the indentation in the leather is passed over twice by the imitation-stitch device, leaving a firmer and more perfect impression. Instead of this eccentric and ratchet movement, two eccentrics, one on shaft  $E^1$  with cam movement, instead of ratchets  $E^3$  and  $E^4$ , and on shaft  $G'$  as now. In Figs. 1 and 3 will be observed the gear-wheel  $H$ , shaft  $H^1$ , and crank  $H^2$ , not used in the movement just described. By unshackling the eccentric  $G$  and the pawls  $F$   $F^1$ , lever  $F^2$ , and rod  $F^4$ , and shifting the gear  $H$  so as to mesh into the gear  $E^2$ , we have a hand or power machine operating the forward movement of the imitation-stitch device and the feed-wheel  $D$ , accomplishing the same result, though less perfectly. In Figs. 1 and 2 will be observed the yielding guard  $I$ , with its spindle extending upward through arms, with spring  $I$

around spindle, and two adjusting-nuts,  $I^2$  and  $I^3$ . The two arms  $n$   $n$ , holding spindle, are movable laterally on the guard-holder  $I^1$ , being slotted and held to the guard-holder by screws.

We claim—

1. In an imitation fair stitch machine, the combination of the marking device  $F$  and the feed-wheel  $D$ , revolving upon a movable lever,  $D^1$ , substantially as shown, and for the purpose described.

2. The combination of the ratchets  $E^3$  and  $E^4$ , the pawls  $F$  and  $F^1$ , the levers  $F^2$  and  $F^3$ , springs  $m$  and  $m'$ , rod  $F^4$ , and the eccentric  $G$ , to produce forward and backward and continuous movement, substantially as shown, and for the purpose described.

3. The combination of the levers  $D^1$   $D^2$   $D^3$ , and weight  $D^4$ , for the purpose shown and described.

4. The combination of the levers  $D^1$ ,  $D^2$ , and  $J$ , for the purpose shown and described.

5. The combination of the adjustable guard  $I$ , the guard-holder  $I^1$ , having movable arms  $n$   $n$ , the spring  $I^2$ , and nuts  $I^3$  and  $I^4$ , for the purpose shown and described.

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Witnesses:

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