

P. Jackson,

Cutting Shoe Uppers,

Nº 50,360.

Patented Oct. 10, 1865.

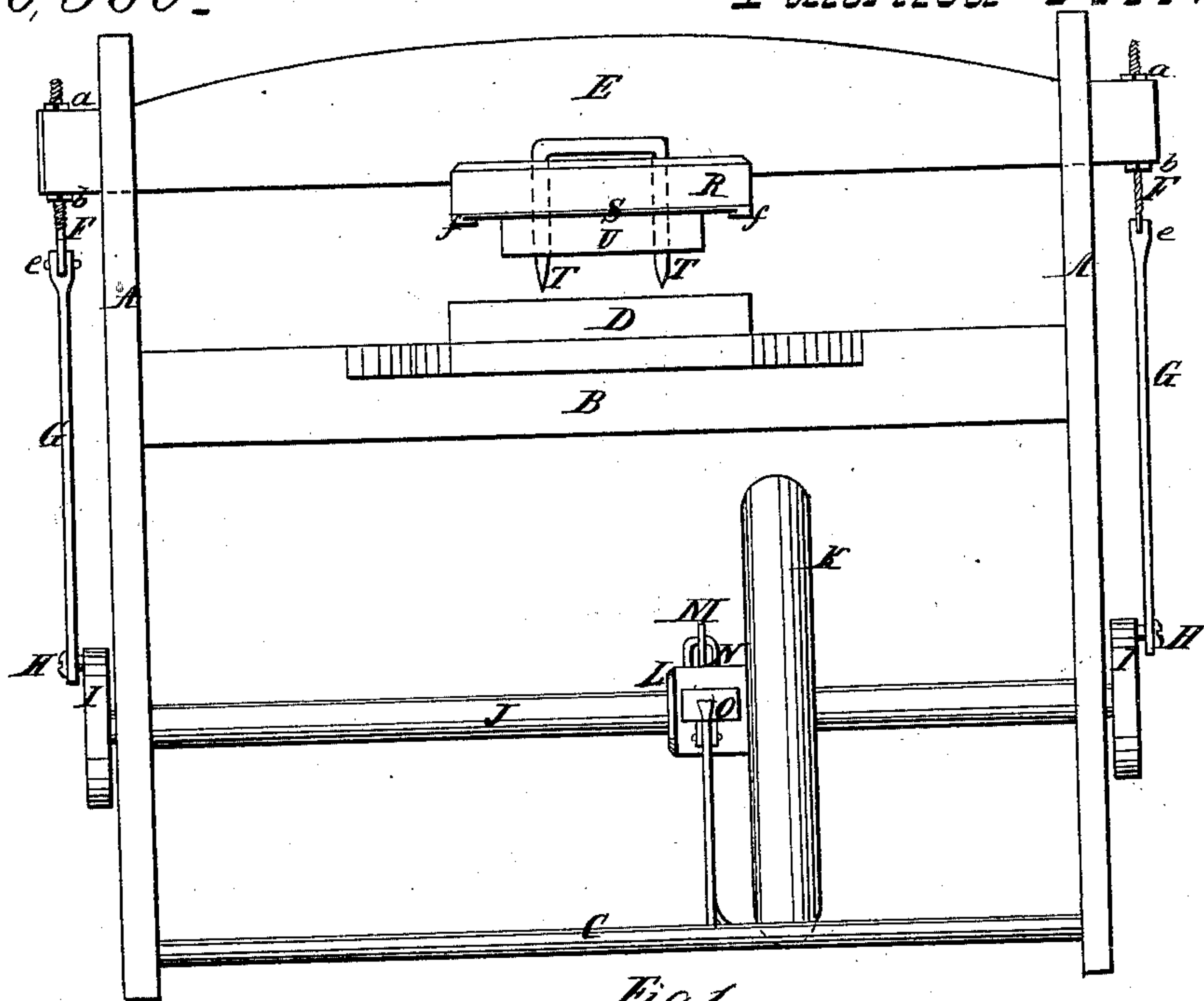


Fig. 1.

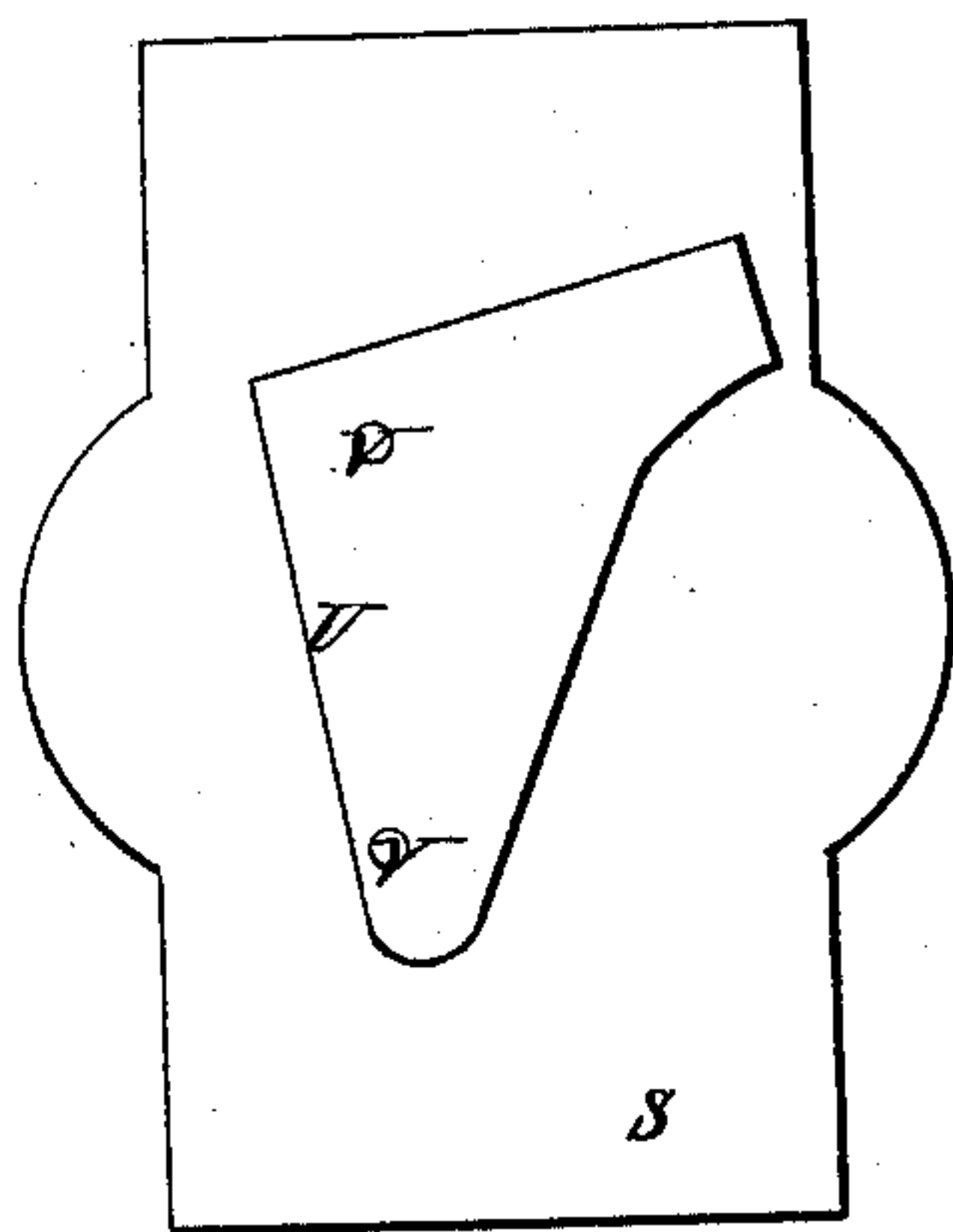


Fig. 3.

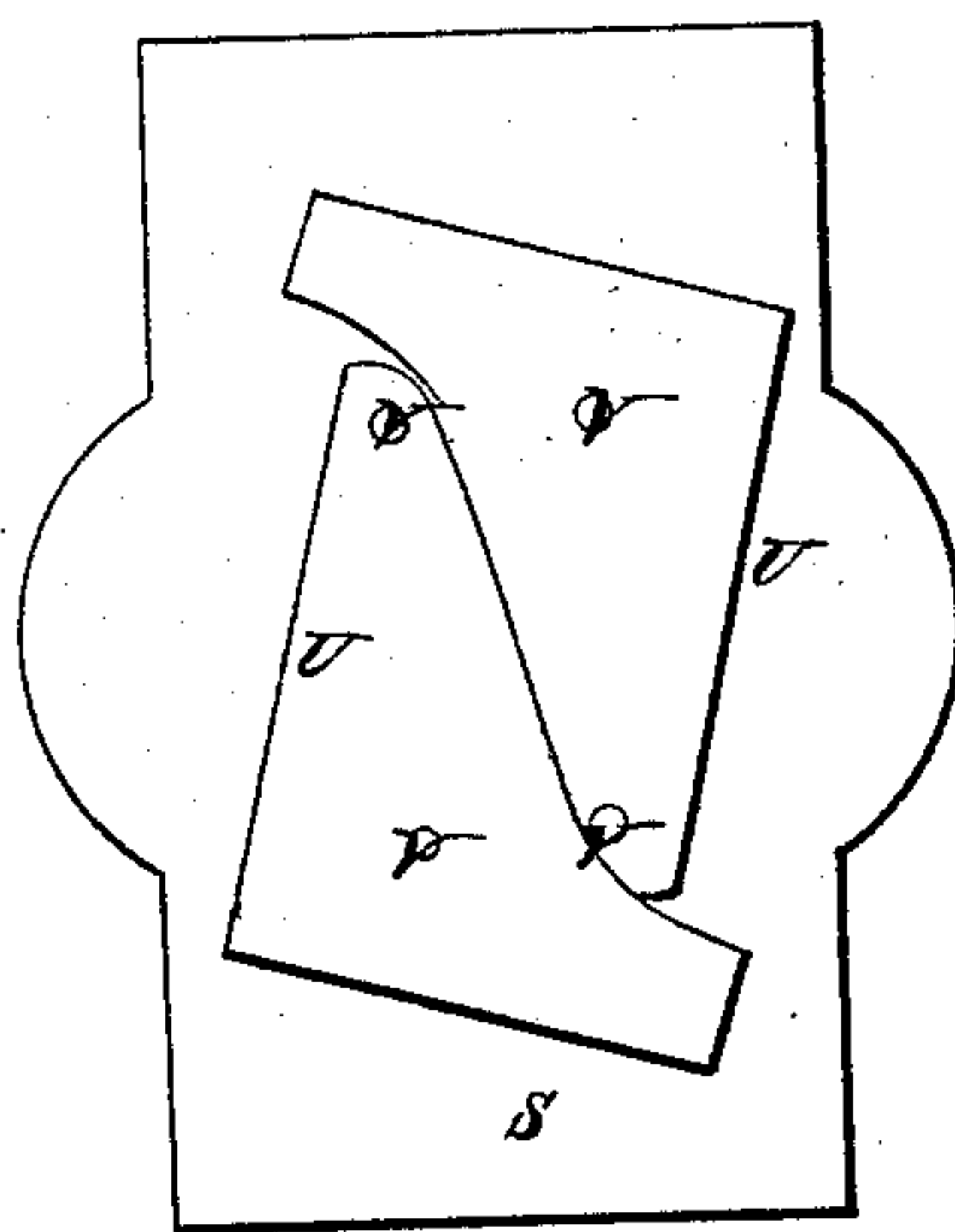


Fig. 4.

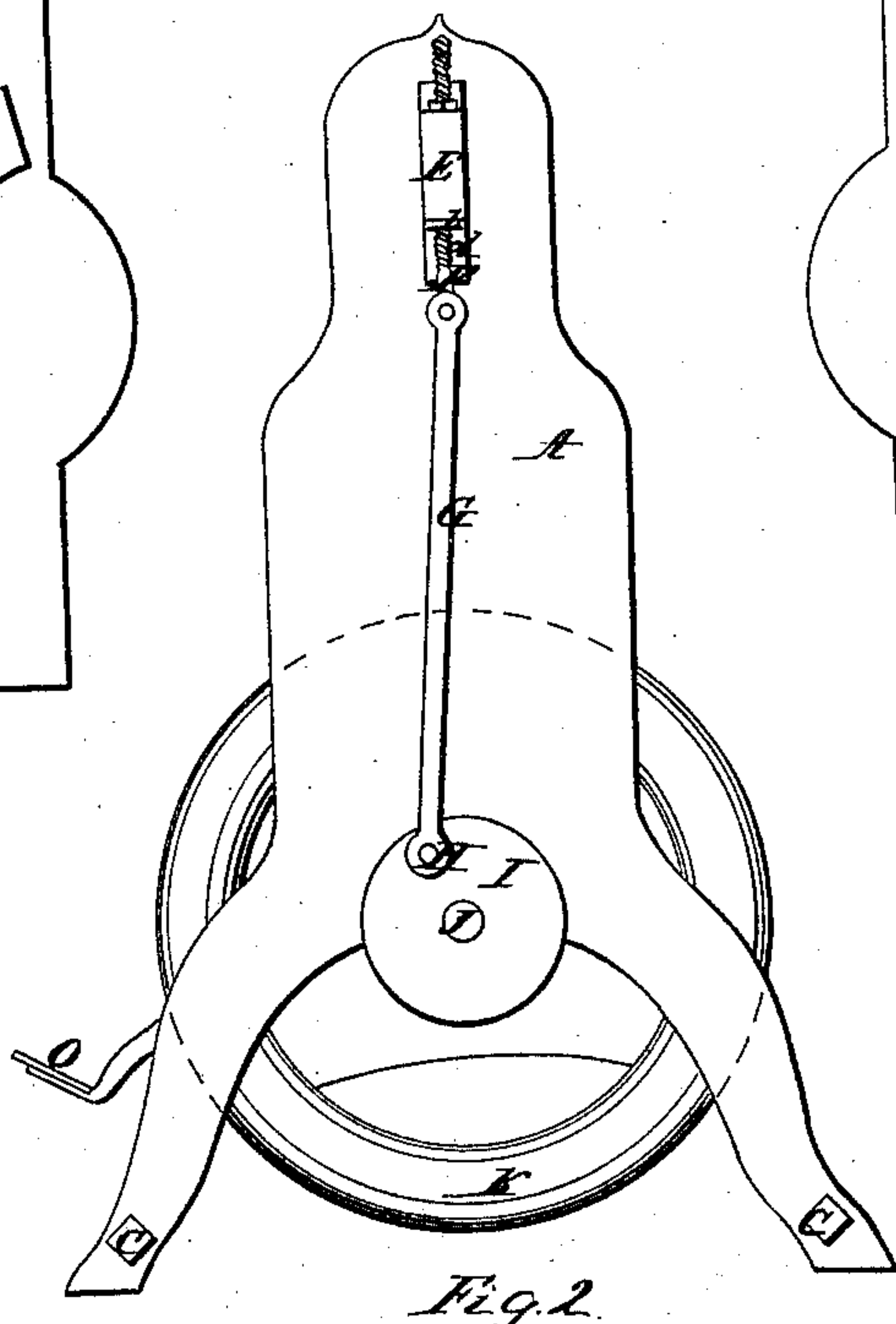


Fig. 2.

Witnesses:

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PICKMORE JACKSON, OF SAUGUS, MASSACHUSETTS.

IMPROVED MACHINE FOR CUTTING BOOT AND SHOE UPPERS.

Specification forming part of Letters Patent No. 50,360, dated October 10, 1865.

To all whom it may concern:

Be it known that I, PICKMORE JACKSON, of Saugus, in the county of Essex and State of Massachusetts, have invented a new and useful Machine for Cutting Boot and Shoe Uppers, &c.; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a front elevation. Fig. 2 is an end elevation. Fig. 3 is a plan of a single die, and Fig. 4 is a plan of a double die.

Like parts are indicated by the same letters in all the drawings.

This machine is intended more particularly for cutting cloth uppers for boots and shoes. It may be used, however, to advantage for cutting other articles of cloth, leather, paper, &c., wherever the operation is performed by means of a die.

To appreciate the advantages of my machine when used for cutting cloth uppers for boots and shoes—as for instance, the uppers of gaiter-boots—I will briefly explain the mode of cutting now in general use.

The cloths used for gaiters seldom vary half an inch from three-fourths of a yard in width, and each piece is about thirty-two yards in length. The workman doubles the piece to eight thicknesses of the cloth, and, commencing with the pattern at one end, draws the cloth over the cutting-board before him as fast as he cuts with a knife, so adjusting the patterns as he proceeds as to lose as little cloth as may be. A skillful cutter by economizing stock will save his wages over an unskillful one. The cloth as thus doubled requires continued care to keep the folds relatively in place, so that the cut through them may always present a square edge. Eight thicknesses of the cloth are as much as can well be cut through at one operation with a knife, and four hundred pairs are a good day's work. Several attempts have been made to do this work by machinery more rapidly than by hand and with an equal saving of stock; but, owing to a number of inherent defects in the principle and operation of the various machines hitherto employed for this purpose, they have failed to come into general use, and, as stated above, nearly all of this description of cutting is now

performed by hand—*i. e.*, by means of a pattern and knife.

The nature of my improvement therefore consists, first, in the employment of pointed rods or indicators, extending downward nearly to the cutting-table, from or through the dies, and capable only of a vertical motion toward and from the same, the design of said indicators being to enter indentations or rest upon marks previously made upon the material to be cut, or upon a marked or punctured piece of paper laid upon the same, thereby operating as a guide for the said cutting-dies, enabling the workman to feed the stock along with the greatest accuracy and dispatch; second, in so constructing the die, or, rather, combining two dies in one, (the central blade answering for both,) that two pieces—as for instance, two quarters of a gaiter-boot—may be cut simultaneously without turning the die (as a single die must be turned) to cut heel and toe alternately.

To enable others skilled in the art to make and use my invention, I will now proceed to describe its construction and operation.

A A are the two upright pieces of wood or metal constituting the legs and sides of the frame, united by means of the rods C C and beam B. The latter also answering for the bed of the cutting-block D, which is made of wood or other suitable material in general use in sole-cutting machines.

E is a stiff beam, of wood or metal, which plays freely up and down in the vertical slots *d d* in the upper ends of the frame A A, being prevented from moving laterally by means of shoulders resting against the sides of the same.

F F are rods, provided with an external screw and nuts *a b*, and passing vertically through the extremities of the beam E, as shown in Figs. 1 and 2.

G G are connecting-rods, having their upper ends pivoted at *e* to the rods F F, and their lower ends at H H to the pulleys or cranks I I, which latter are fast to the ends of the driving-shaft J.

K is a heavy wheel, provided with a hub, L, and fast to the shaft J. This wheel K is provided on one side with a counter-weight opposite the crank-pins H H, which is intended to be heavy enough to more than counterbalance the weight of the connecting-rods G G and

the beam E with its appendages, and always have a tendency to raise the die U from the cutting-block D, as represented in Fig. 1.

M is a staple projecting from the hub L, and N is a chain connecting said staple with the treadle O, the fast end of which vibrates on the back rod, C.

R is a block of wood or metal, fast to the under side of the beam E. The lower surface of this block is flat and parallel with the upper surface of the cutting-block D, being about twelve inches long by eight inches wide, (more or less.)

S is a thin plate of sheet metal, shaped as clearly shown in Figs. 3 and 4. To one side of this plate is fastened the cutting-die U, which is made in one continuous piece or whole and of the contour of the article which it is designed to cut out. In Fig. 3 a single die is employed, and in Fig. 4 what I call a "double die," or two dies combined or placed together heel to toe, having a central blade common to both, for the objects specified above in setting forth the nature of my invention. The plates S S are slid under the block R, between it and the lips or cleats *ff*, as represented in Fig. 1, and thereby held securely in place, being located so as to bring the center of the die as nearly as possible under the center of the beam E.

Through the block R and the plates S S are round holes V V, for the reception of the pointed rods or indicators T T, which are made of a piece of round wire, bent as shown in Fig. 1, and of such a size as to slide freely or drop of their own weight through said holes. The points of the indicators extend, when the beam E is raised, nearly down to the block D. These indicators T T, instead of being constructed as they are and passing down through the holes V V, might be compressible or springs and attached to the under side of the plate S. I prefer, however, the method of construction and application described above.

The operation of these indicators is as follows: The workman places a piece of pattern-paper on the cutting-block D and punctures it with the points of the indicators. Then by forcing the die upon the cutting-block a pattern is cut like the die, having the punctures in the same relative position to its edges as the indicator-points are to the edges of the die-blades when both are brought down to the block. A full set of punctured patterns are cut in this manner. Now, if these patterns are laid on any substance to be cut and corresponding punctures made in it, the material being drawn over the cutting-block till the punctures agree with the indicator-points, the die may be forced down and the material cut.

Some method of preparing the cloth or other substance to be cut in such a manner as to hold

the folds or thicknesses in their proper relative position while they are being drawn over the cutting-block is essential to the highest success of the machine. To this end a sheet of pattern-paper as wide as the material to be cut and of indefinite length is taken. A set of punctured patterns of any kind agreeing with the dies are arranged on this sheet in combinations that will give the desired sizes, and, by more or less extension on the sheet, take up a square. This piece I call the "permanent sheet-pattern," being punctured to correspond with the punctures of the single patterns placed upon it. A number of thicknesses of lighter paper of the same dimensions as this square are placed accurately under it and simply punctured to correspond with the permanent pattern. These last sheets I call the "cutting sheet-patterns."

The cloth or other material is then carefully folded in squares of like dimensions as the pattern-pieces, the cutting sheet-pattern is laid on it, and the whole fastened together with slim pliable nails driven through and clinched on the under side. The waste places where the nails may be driven are noted in the permanent pattern when it is prepared and transferred by punctures to the cutting sheet-pattern.

This method of preparing the material is simple and effectual. The permanent pattern will last as long as the dies, and sufficient cutting-patterns for a day's work may be prepared in a few minutes.

The combinations of patterns or the permanent sheet may be studied and effected so as to cut the cloth with the greatest possible saving. In this respect this method has great advantage over the hand-cutter, who often wastes cloth by unstudied combinations. Thus my improvement not only effects a great saving of material, but it also does the work with greater accuracy and many times faster than it can be done by a workman in the usual manner—*i. e.*, by means of a pattern and knife—the die on my machine being capable of cutting through forty thicknesses of cloth at once.

Having thus described the construction and operation of my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The indicators T T or their equivalents, in combination with the cutting-dies, substantially as set forth, and for the purpose described.
2. A double die for gaiter-boot fronts, having a single blade to cut the tops of two patterns, substantially as and for the purpose described.

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Witnesses:

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