

G. W. COPELAND & J. E. CRISP.
Dies for Cutting the Uppers of Boots and Shoes.

No. 212,131.

Patented Feb. 11, 1879.

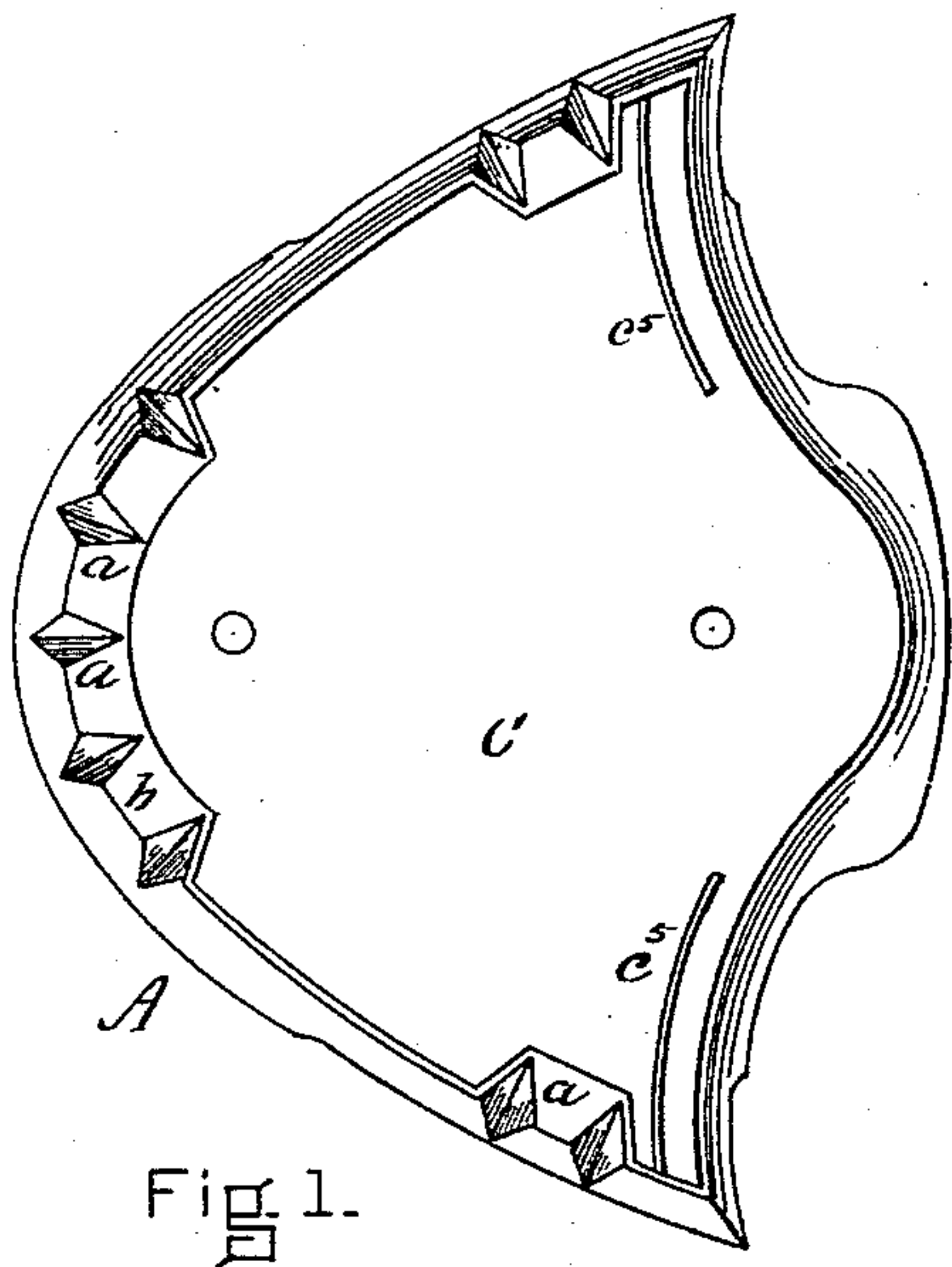


Fig. 1.

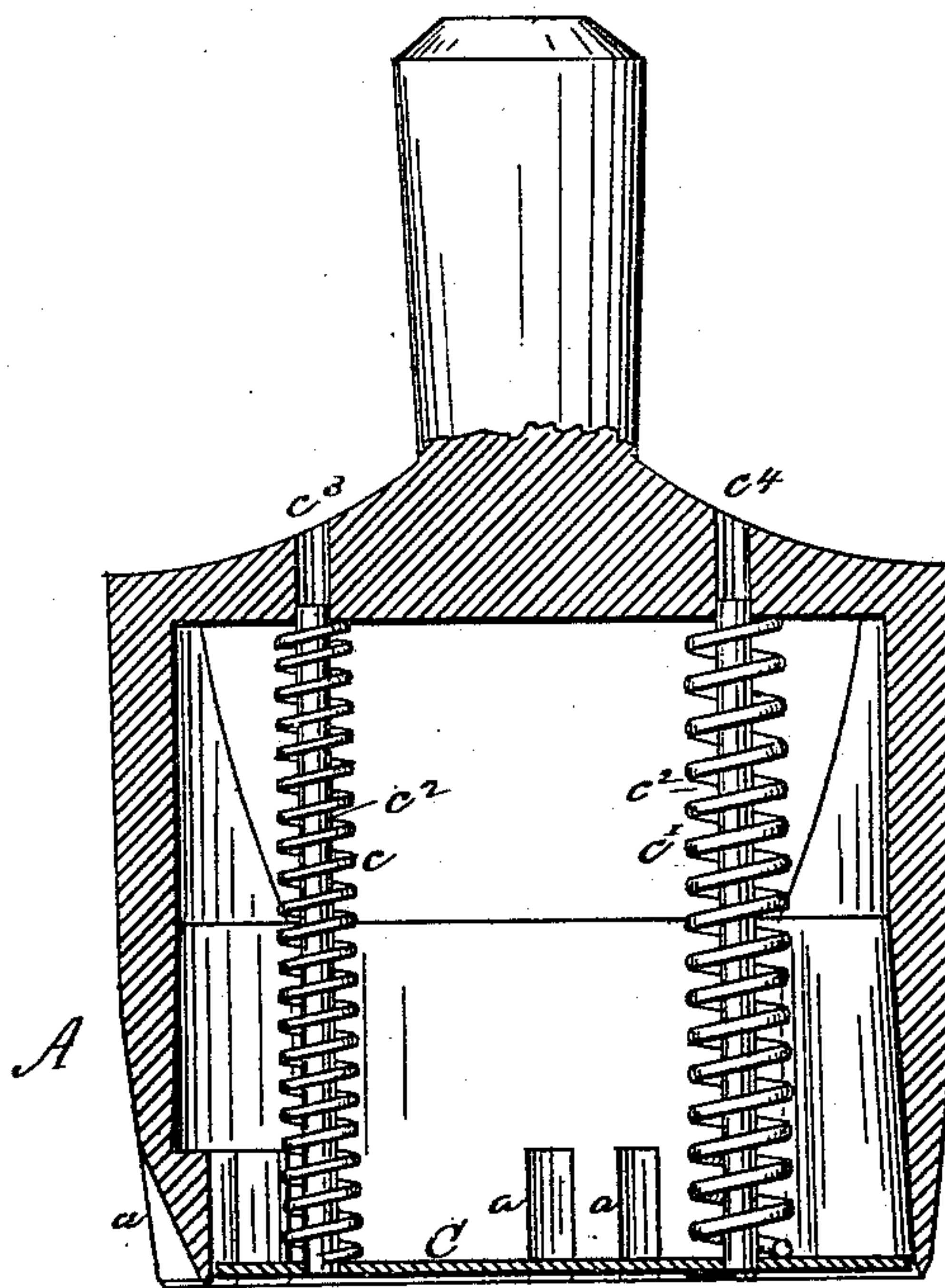


Fig. 2.

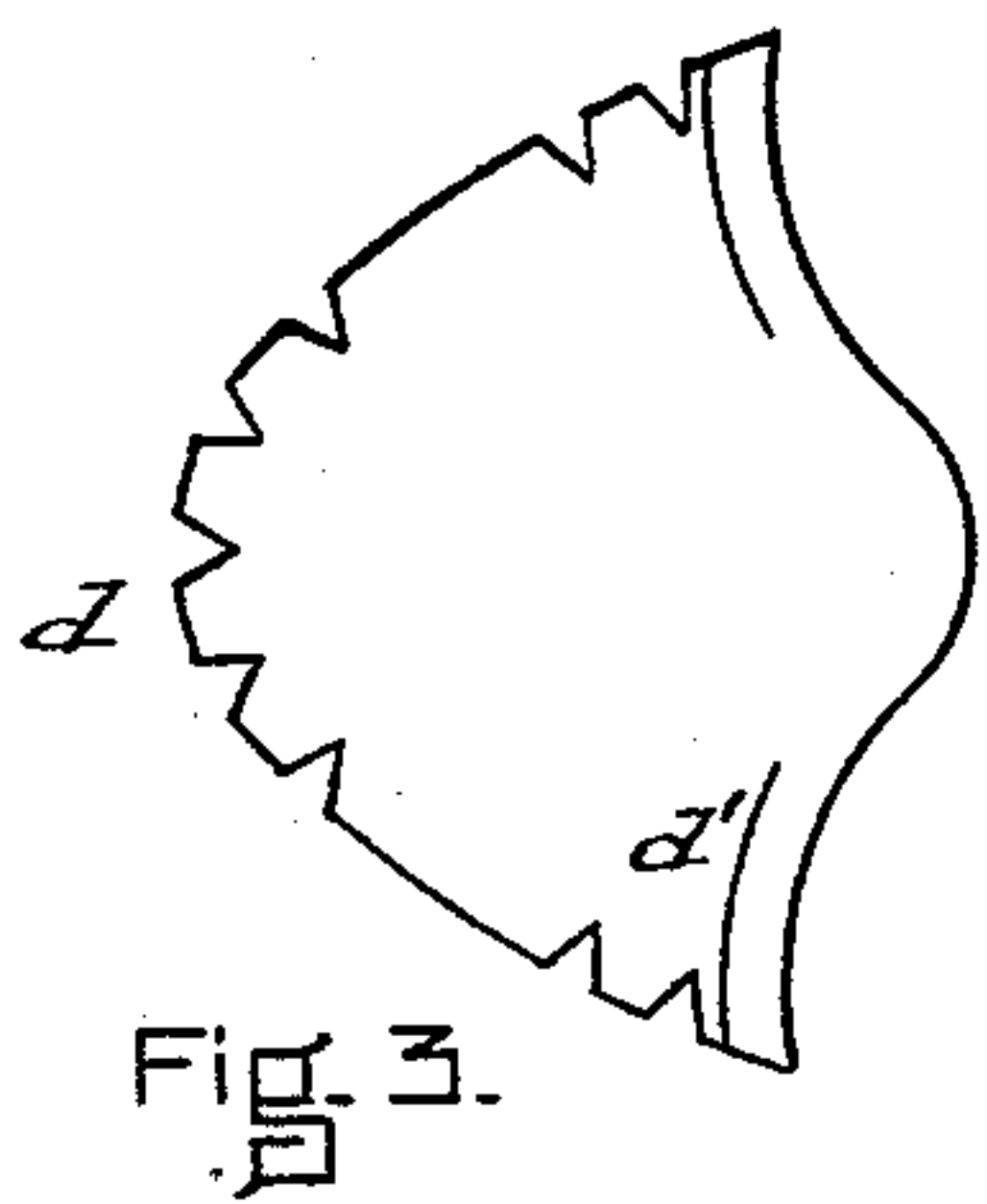


Fig. 3.

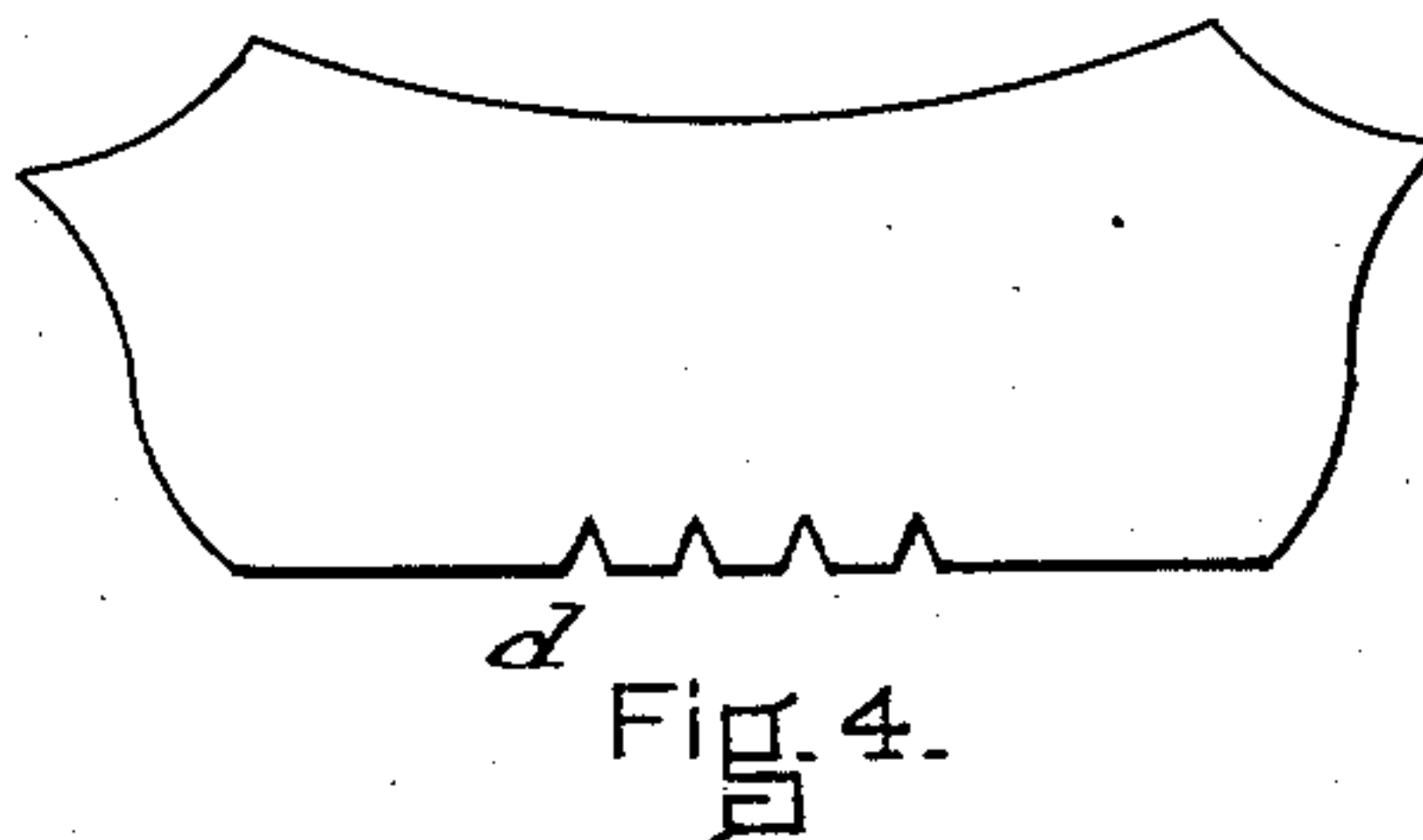


Fig. 4.

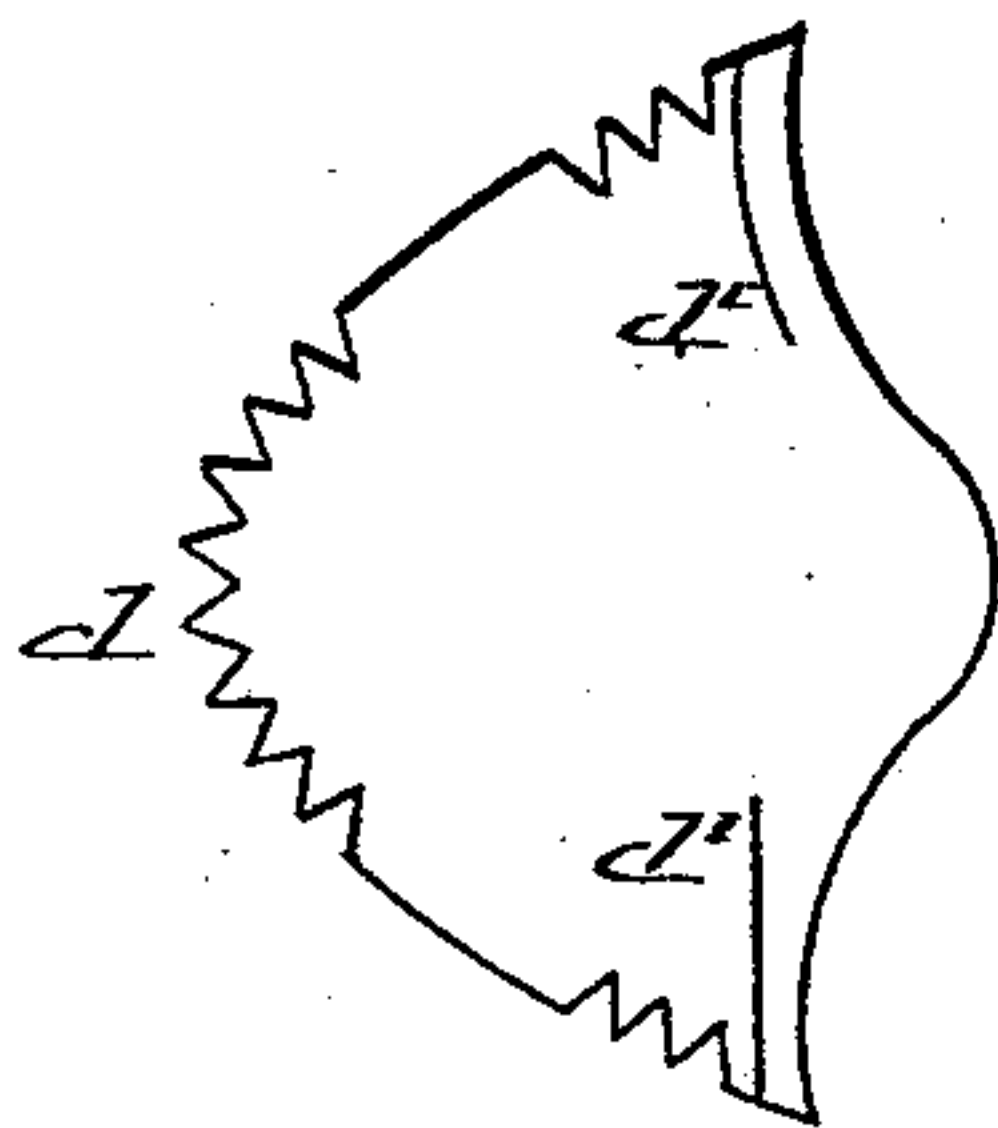


Fig. 5.

WITNESSES.

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UNITED STATES PATENT OFFICE.

GEORGE W. COPELAND, OF MALDEN, AND JOSEPH E. CRISP, OF BOSTON,
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IMPROVEMENT IN DIES FOR CUTTING THE UPPERS OF BOOTS AND SHOES.

Specification forming part of Letters Patent No. **212,131**, dated February 11, 1879; application filed
October 18, 1878.

To all whom it may concern:

Be it known that we, GEORGE W. COPELAND, of Malden, in the county of Middlesex, and JOSEPH E. CRISP, of Boston, in the county of Suffolk, both in the Commonwealth of Massachusetts, have invented an Improvement in Dies for Cutting the Uppers of Boots and Shoes, of which the following is a specification:

The invention has for its object an improved die for cutting out the vamp or quarter of a boot or shoe, and for marking upon the said vamp or quarter a lap-gage.

In the drawings, Figure 1 is a plan of a die. Fig. 2 is a vertical section thereof. Figs. 3, 4, and 5 are plans of vamps and quarters, further illustrating the invention.

Heretofore the vamp, quarters, counters, and other pieces which are used in making a boot or shoe have been cut from the stock by the use of dies; but the same have always been provided with plain lower edges, and no effort has been made to serrate the said edge of the vamp or quarter, to assist the process of lasting the upper, or to mark the vamp or quarter with a guide, for the purpose of securing precision in laying the seams which unite these parts.

It is necessary that the various portions constituting the upper, which are generally cut with exceeding care to the pattern previously prepared, should be united in such a way that the portions that lap in forming the seams should lap uniformly and regularly to or upon a predetermined line, and for this purpose various guides have been used upon the sewing-machines employed in laying the uniting-seam; but they have been found not to work well in practice, and it is generally the exception rather than the rule that the edge of one part is lapped regularly upon the other portion, as in the haste of the operator to turn off work a nice adjustment is not possible unless some very easy and simple method of determining the position of the same shall be provided. For this purpose we mark the edge of the vamp or other portion of the upper upon which another portion is to lap with a designating-line, which shall show to the op-

erator the position which the lapped edge must take in order to be true.

When the seams are irregular, caused by the uneven lapping of the parts, of course a portion of the advantage gained by cutting the uppers to a predetermined pattern is lost, and the upper cannot be fitted upon the last in the lasting process without exercising more care in adjusting the upper upon the last and in fitting it thereto.

In folding the edge of the upper upon the last, it is desirable that there shall not be extreme fullness at the toe, and, in some instances, at the heel, as the margin of the upper in the folding process will not, particularly where thick leather is employed, as in brogans, plait and fold with uniformity. We therefore prepare our upper before the lasting process by serrating the edge at given points of the parts composing the upper when the same are cut. At the same time we mark the gage-line upon the vamp or other portion of the upper.

The die A that we show is intended to cut out vamps; but of course we do not confine ourselves to that particular shape. It is provided with the V-shaped projections *a*, which may be separated from each other, as shown, by the portions *b*, as shown, or may be continuous, to cut continuous serrations, such as are shown in the vamp illustrated in Fig. 5.

Within the die is arranged the yielding diaphragm C, which is held in position, preferably, flush with the bottom of the die by the springs *c* *c*¹. The rods *c*², which pass through the springs, have a movement in the holes *c*³ *c*⁴, and act as a support for the springs and as guides in holding the diaphragm in position. The diaphragm is further provided with the projections *c*⁵, which stamp upon the upper the gage-line, above referred to, to determine the extent of lap.

It will readily be seen that the diaphragm yields while the die is operating, and that it throws out the cut piece upon the lifting of the die.

It has been customary heretofore to fill the die with cut pieces, and then to remove them. The vamp and quarters, or either of them,

having thus been cut and provided with the serrated edge *d* and the indentations or lap-guides *d'*, are then united in the regular way. The edge of the quarter lapping upon the vamp to the lap-guide, conforming to it its entire length, but not extending over the same, is then ready for the lasting process. The upper being thus, it may be said, almost perfectly shaped, is placed upon the last, requiring no adjustment from the hands of the operator in determining the center of the toe and heel, which are the portions first lapped upon the insole and secured into position by tacks. The last is then adjusted in the machine, and the upper dragged upon the same by lifting-pressure brought to bear upon the sides of the last until the upper is closely fitted to the last and the edge brought above the level of the insole to be folded. Closing-plates then complete the lasting by turning the vertical edge of the upper upon the insole, and in so doing lay over the edge upon the insole regularly and uniformly.

The serrations upon the edge of the upper at the toe and heel and at the shank, or upon either portion, or any other portion of the upper desirable, enable the upper to be folded by removing such portions of the edge of the upper

as are unnecessary for the purpose of securing the edge to the insole, and which, if permitted to remain, cause an extreme fullness, particularly at the toe, which cannot be easily plaited or folded upon itself by the closing of the lasting-plates.

Having thus fully described our invention, we claim and desire to secure by Letters Patent—

1. A die for cutting vamps or quarters, provided with a gage for indicating upon the vamp or quarter the degree of lap necessary in uniting the same in forming an upper.

2. In combination with a die having portions of its cutting-edge serrated, for the purposes set forth, a yielding diaphragm provided with the projections *c*⁵, substantially as and for the purposes described.

3. The within-described vamp or upper provided with a lap-gage, impressed therein when the same is cut, substantially as set forth.

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Witnesses:

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