

(No Model.)

W. F. SPINNEY.

MOLD FOR FORMING HEEL STIFFENERS.

No. 302,438.

Patented July 22, 1884.

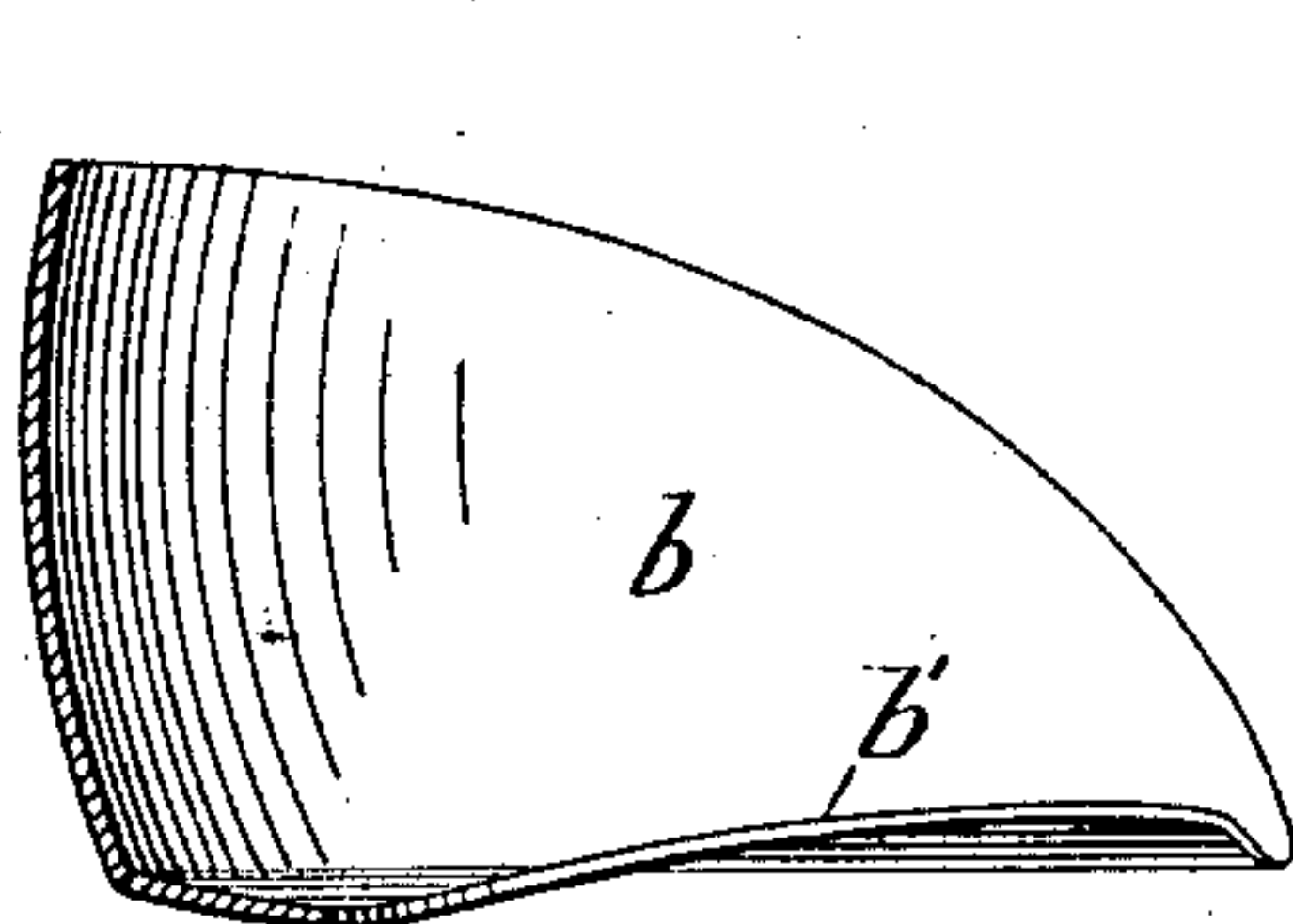


Fig. 6.

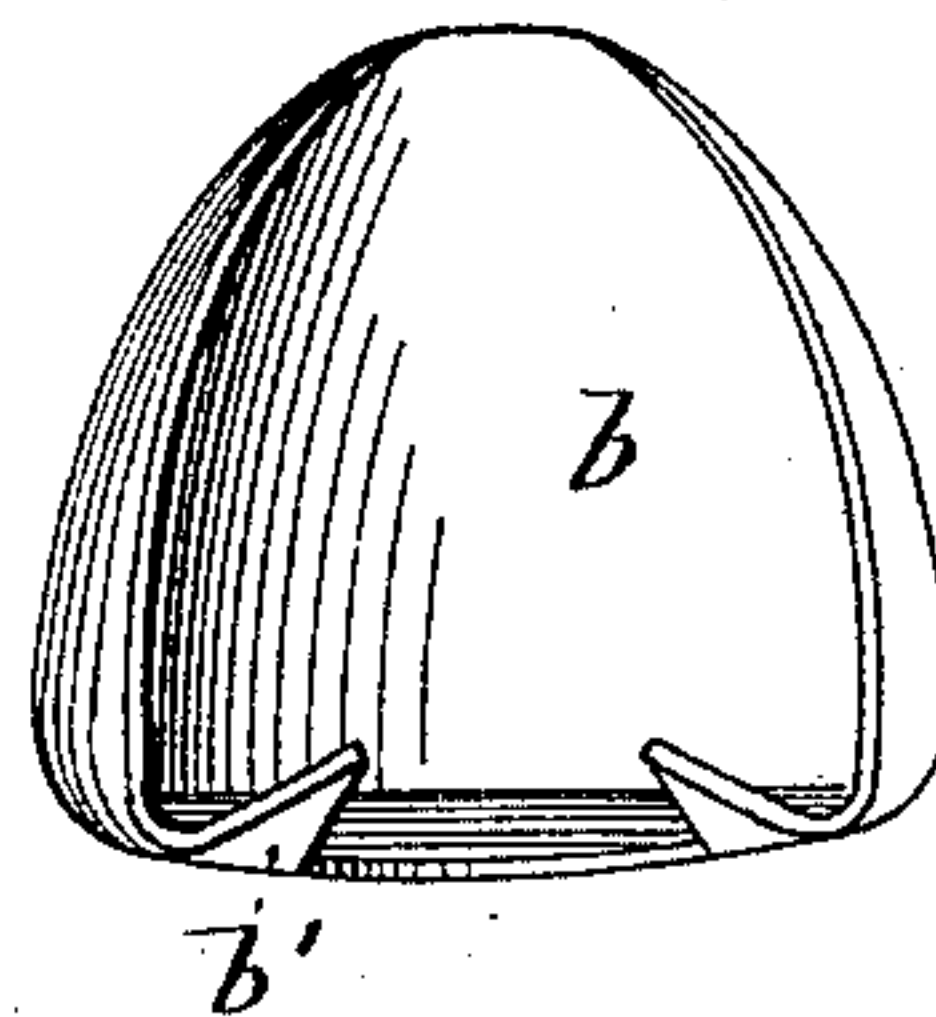
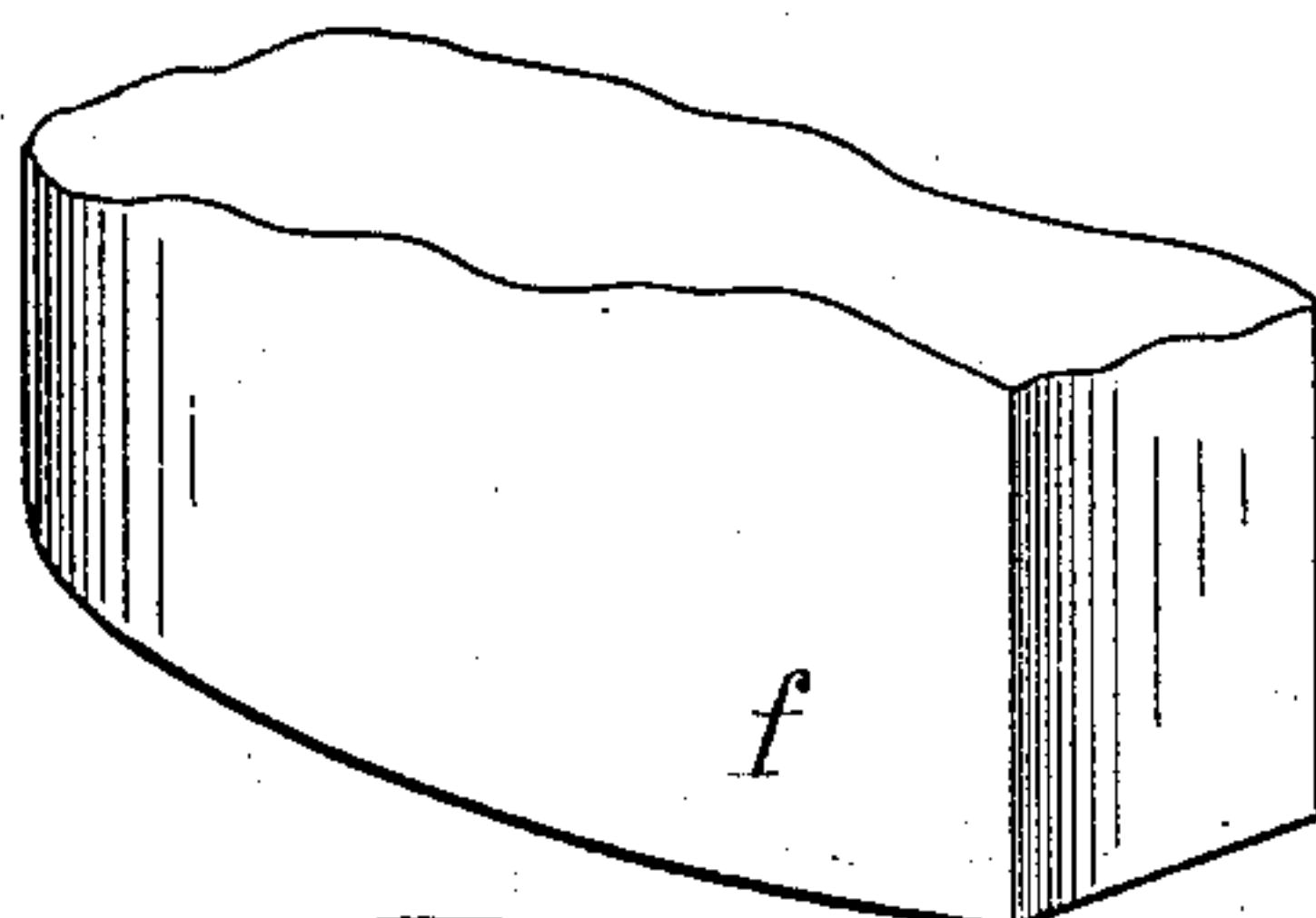


Fig. 7.

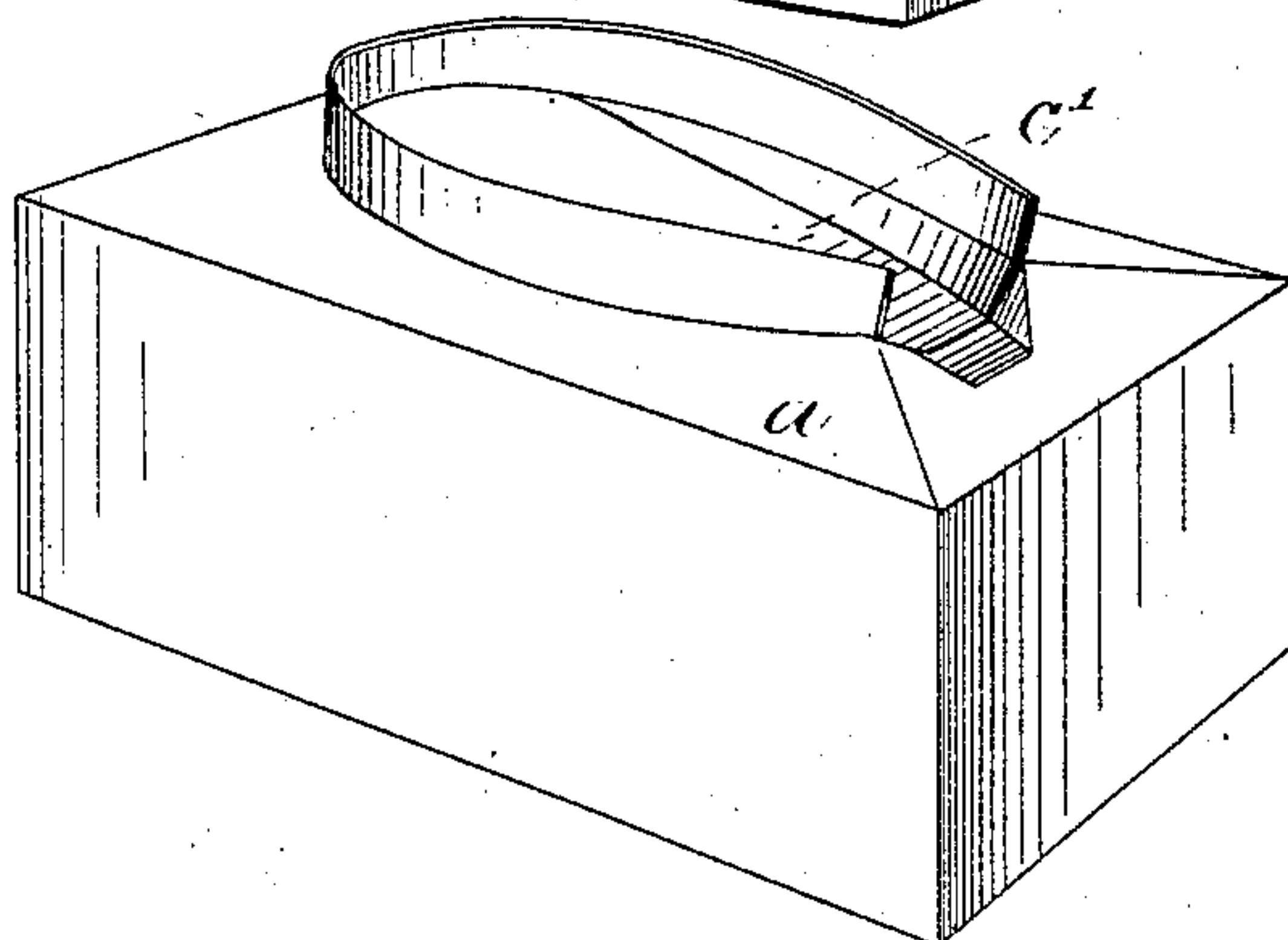


Fig. 1.

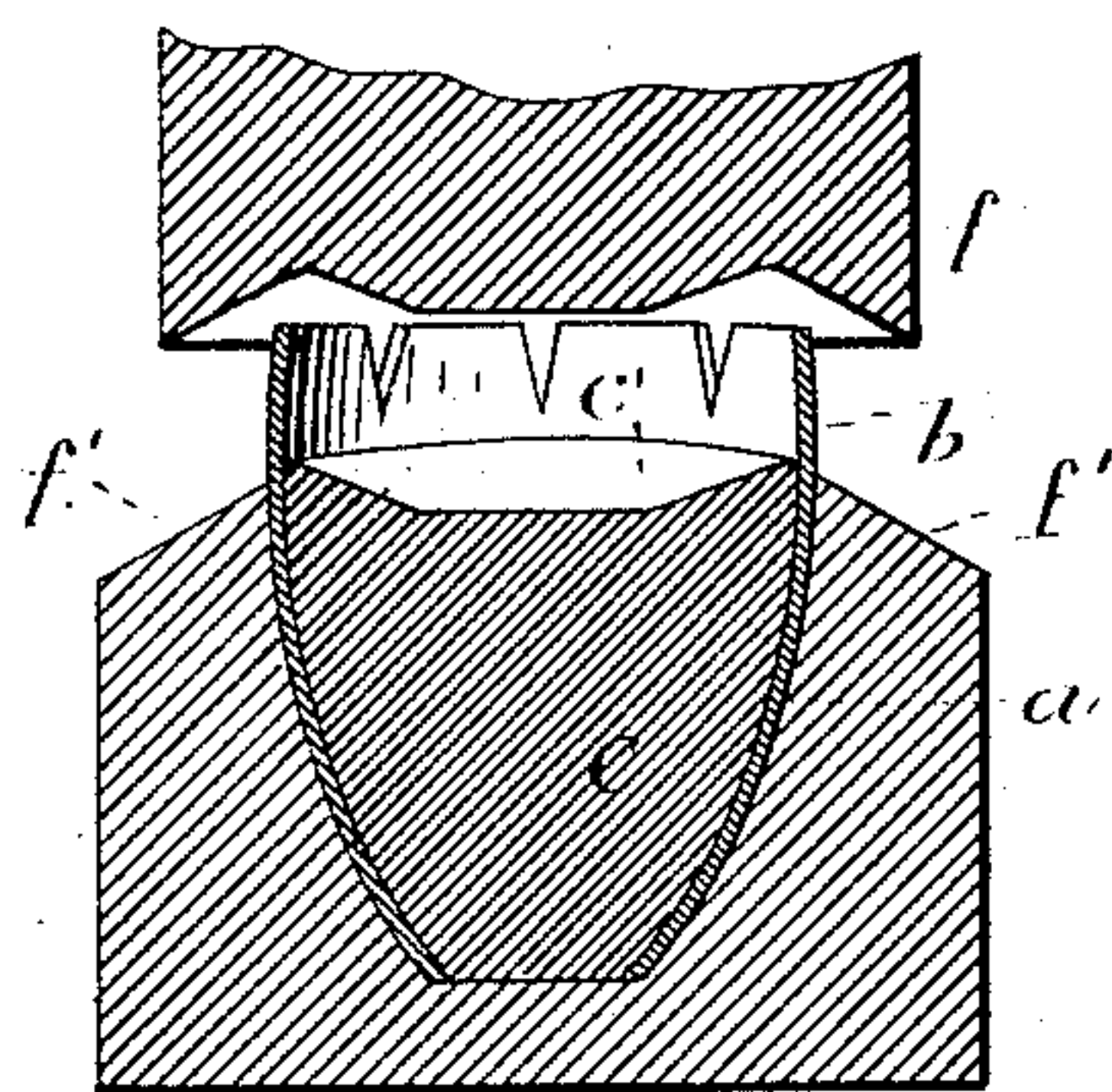


Fig. 2.

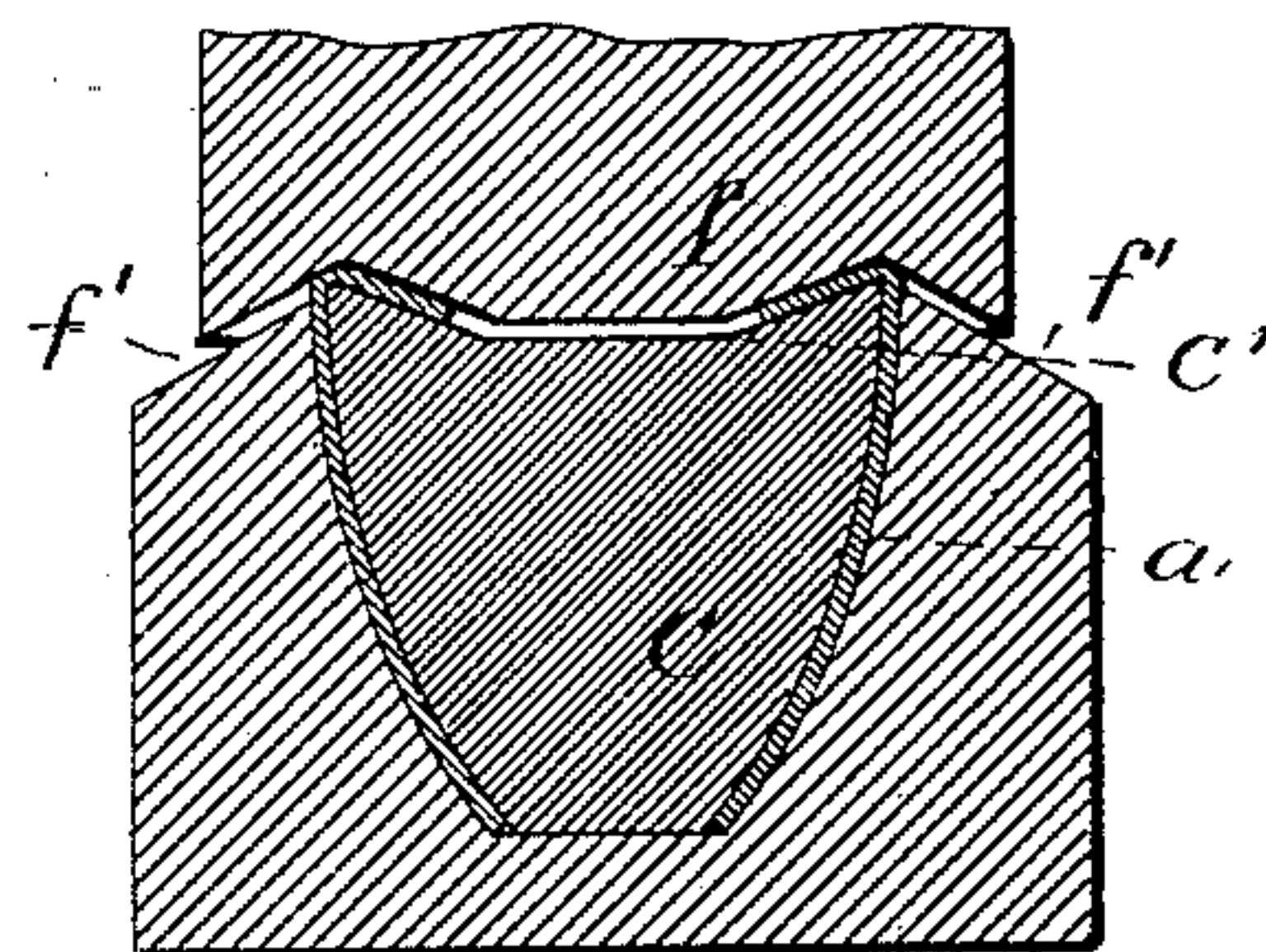


Fig. 3.

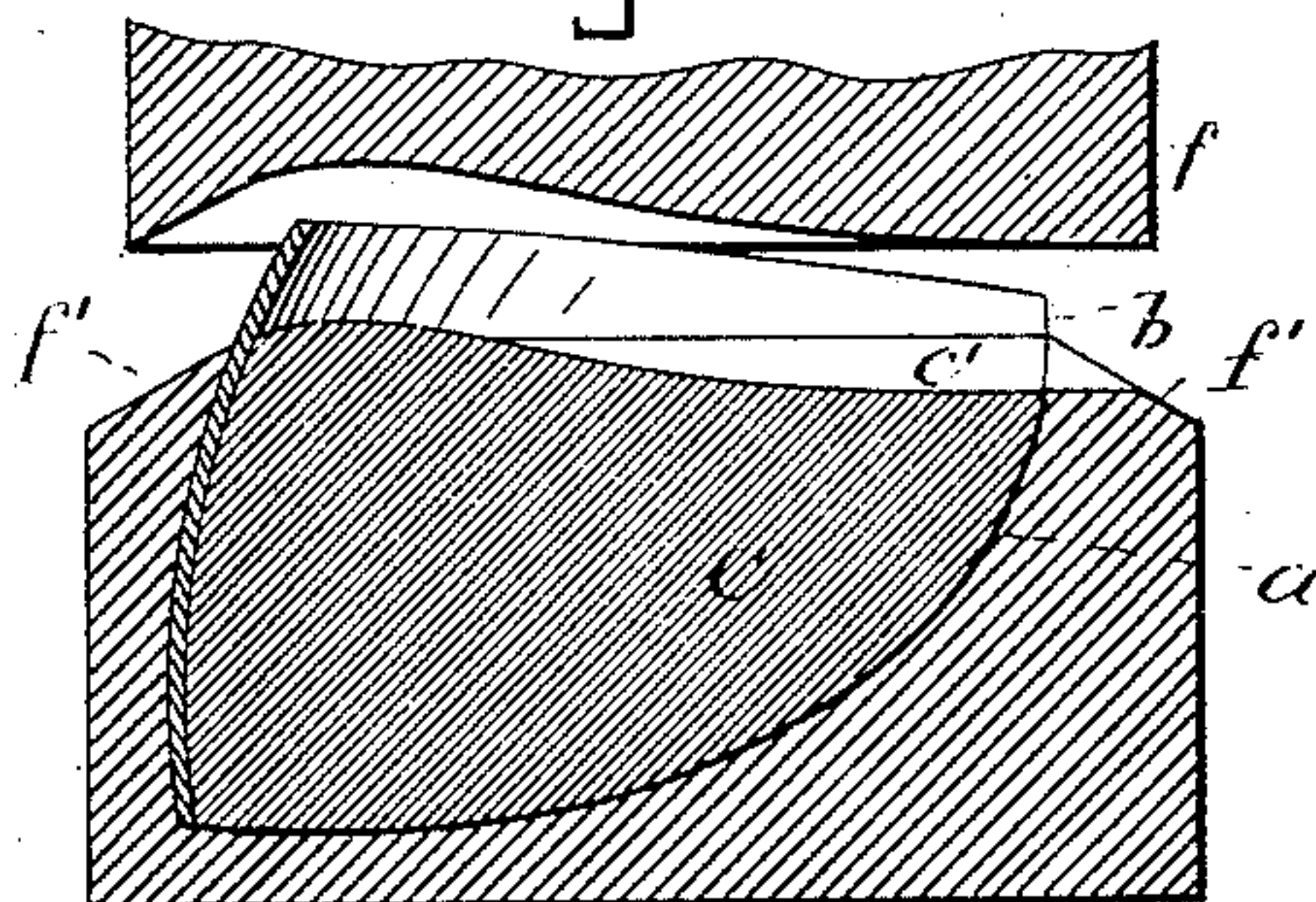


Fig. 4.

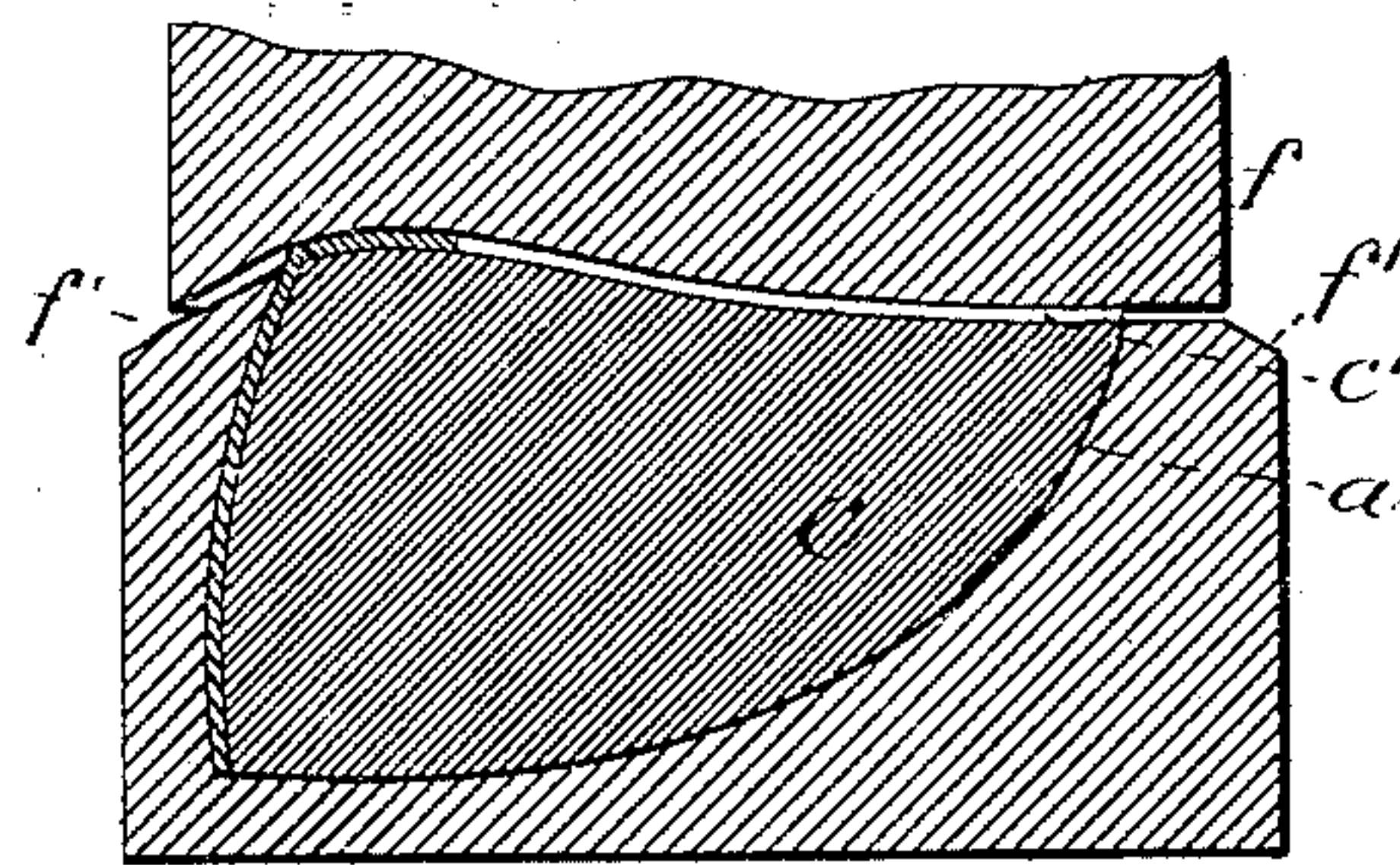


Fig. 5.

WITNESSES

H. Brown  
A. White

INVENTOR

W. F. Spinney  
by night & Brown  
Atty.



# UNITED STATES PATENT OFFICE.

WILLIAM F. SPINNEY, OF READING, MASSACHUSETTS.

## MOLD FOR FORMING HEEL-STIFFENERS.

SPECIFICATION forming part of Letters Patent No. 302,438, dated July 22, 1884.

Application filed April 4, 1884. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM F. SPINNEY, of Reading, in the county of Middlesex and State of Massachusetts, have invented certain Improvements in Means for Forming Heel-Stiffeners, of which the following is a specification.

This invention has for its object to provide improved molds adapted to permanently mold or form heel stiffeners or counters by pressure; and it consists in the improvements hereinafter described whereby the desired result is attained.

The invention further consists in the improved heel-stiffener hereinafter specified.

Of the accompanying drawings, forming a part of this specification, Figure 1 represents a perspective view of my improved molds, showing the blank and the parts of the mold in the position they occupy after the body of the counter has been formed and before the flange is turned. Fig. 2 represents a transverse section, and Fig. 4 a longitudinal section, showing the parts in the same position as in Fig. 1. Figs. 3 and 5 represent, respectively, a transverse and a longitudinal section of the parts after the flange has been turned. Figs. 6 and 7 represent, respectively, a longitudinal section and an end view of the completed blank.

The same letters of reference indicate the same parts in all the figures.

In the drawings, *a* represents a female mold or cavity, the sides of which have the obverse form of the external surface of a counter, *b*, as indicated in the several sectional views, the external surface of the counter being convex in any vertical section, while its sides slope inwardly from its lower edge or flange, *b'*, to its upper edge, as shown in Figs 2, 3, and 7; hence the walls of the cavity are correspondingly formed.

*c* represents a male mold, adapted to enter the female mold and conform to the contour thereof, but of sufficiently smaller size to admit the thickness of the counter-blank, as shown in Figs. 2, 3, 4, and 5. A blank of the proper outline is first curved lengthwise by hand or by other suitable means and inserted in the female mold. The male mold is then forced into the female mold, the body of the

blank being thus pressed into the desired shape between the two molds. The blank is of such width that its bottom edge, which afterward forms the flange *b'*, projects above the meeting surfaces of the molds *a* *c*, as shown in Figs. 1, 2, and 4. In forming the flange *b'* I bend the projecting edge of the blank so that at the heel portion it forms about a right angle or a somewhat obtuse angle with the back of the counter, as shown in Figs. 5 and 6, while its ends and forward portions form acute angles with the sides of the counter, as shown in Figs. 3 and 7, the ends or forward portions of the flange projecting upwardly into the space within the body of the counter. The object of this form is to enable the flange to retain its form and prevent it from straightening out into an approximation of its condition before bending, and also to enable the flange, by retaining its own form, to prevent the body of the counter from varying materially from either its lengthwise or its vertical curvature. The flange *b'* is bent to the described form by a mold, *f*, adapted to be pressed downwardly upon the projecting edge of the counter, and to turn the same inwardly with the varying angles above described, and a mold, *c'*, formed on the upper surface of the mold *c*, and adapted to co-operate with the mold *f* in giving the described form to the flange. The mold *f* is beveled or inclined downwardly and outwardly, as shown at *f'*, along its entire portion, which meets the edge of the blank before bending it, so that the pressure of the mold against the edge of the blank causes said edge to turn inwardly at all points.

I do not limit myself to molds adapted to impart only the described peculiarities of form of the body and flange of the counter, as the vertical curvature of the body of the counter and the form of the flange may be variously modified without departing from the spirit of my invention. The flange may form substantially the same angle with the body of the counter at all parts, instead of presenting the different angles above described. The edge of the blank may be notched at one or more points to facilitate the turning of the flange.

I prefer to give the rear portion of the female mold the backward inclination from the top of said mold shown in Figs. 4 and 6, so



that when the blank is inserted in the mold its ends will be given a downward inclination by the backward inclination of the back of the mold, and will not be liable to be raised by accident above their bearing on the bottom of the mold. The female mold is formed at its bottom and front portion to exactly fit the downward and forward curvature of the upper edge of the completed counter; hence the female mold presents a shoulder or bearing for the ends of the counter, which prevents displacement of said ends in the direction of the length of the counter, and thus secures the coincidence of said ends, so that one end cannot project beyond the other.

The improved heel-stiffener is of the form most clearly seen in Fig. 7. By reference to said figure it will be noted that the flange of the counter at the heel portion forms about a right (or slightly obtuse) angle with the back of the counter, while its ends and forward portions form acute angles with the sides of the counter, the ends or forward portions, *b'*, of the flange projecting upwardly into the space within the body of the counter. This enables the flange to retain its form and prevents it from bending abnormally.

I claim—

1. As a means for forming heel counters or stiffeners, two pairs of pressure-molds, one pair consisting of a female mold having a recess or depression adapted to receive a counter-blank in an inverted position, and a male mold designed to operate in connection therewith to enter said recess or depression and form and shape the body of the counter, and to hold the bottom edge of the said counter to permit a second mold to operate thereon to form a flange thereof, substantially as set forth.

2. The combination of the female mold *a*, adapted to receive a counter-blank, a male mold, *c*, adapted to operate in connection with said mold *a* to form the body of a counter and to permit a portion of the same to remain unoperated upon, for the purpose described, a

mold, *f*, adapted to operate in connection with the mold *c* to bend the unoperated portion and form a flange, substantially as set forth.

3. The combination of the female mold *a*, adapted to receive the counter-blank, a male mold, *c*, adapted to operate in connection with said mold *a* to form the body of a counter and leave a portion of the counter unoperated upon, a mold, *c'*, having a face of varying depression, and a mold, *f*, for forcing said unoperated portion down upon said varying face to form a flange of different angles at different points along its length, as set forth.

4. The combination of the female mold *a*, having a mold portion of a backward inclination, as described, and adapted to receive a counter-blank in an inverted position, a male mold, *c*, adapted to operate in connection with said mold *a* to shape and form the body portion of a counter, the ends of said blank being given a downward inclination by the said backward inclination of the molds, and the blank being thereby prevented from being raised from its bearings from the bottom of the molds, as set forth.

5. The female mold *a*, having a depression or mold-surface formed obversely to the curvature of the upper edge of a counter, whereby when a counter-blank is placed in an inverted position in said depression or mold-surface the displacement of said counter in the direction of its length is prevented.

6. An improved article of manufacture, consisting of a counter having the flange turned inwardly and upwardly at and near its end, as set forth.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 29th day of March, 1884.

WILLIAM F. SPINNEY.

Witnesses:

C. F. BROWN,  
A. L. WHITE.