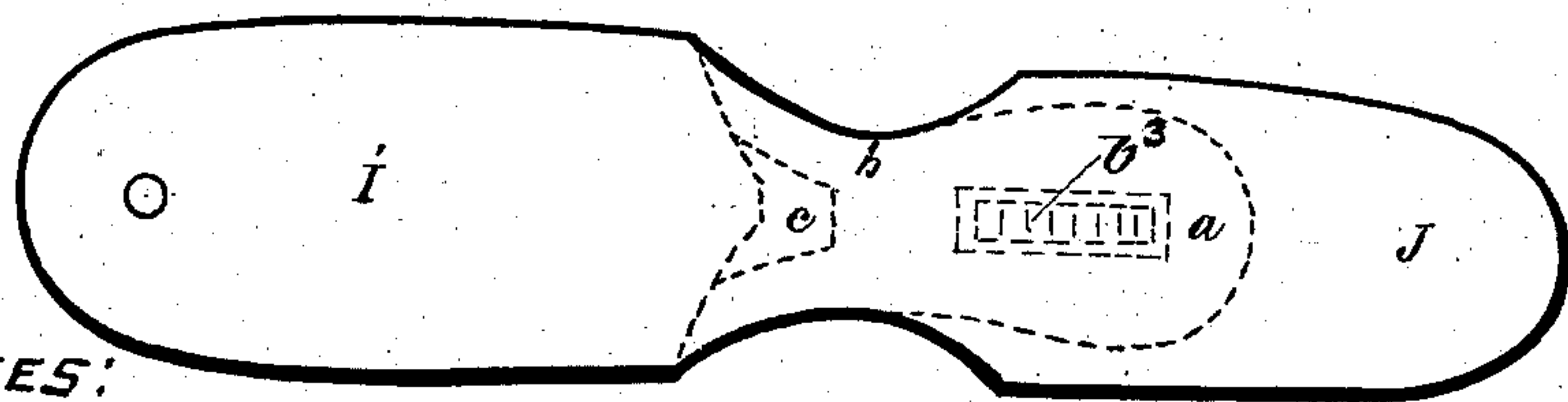
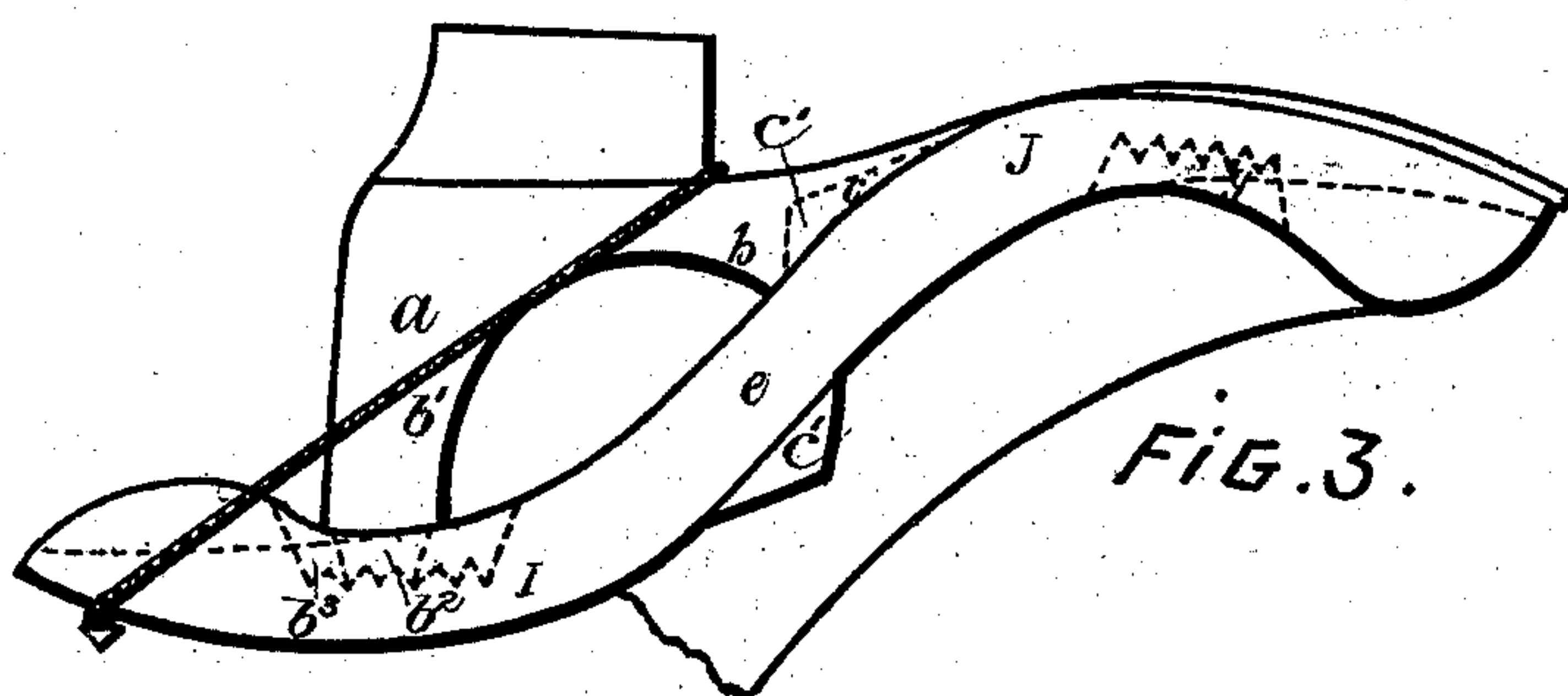
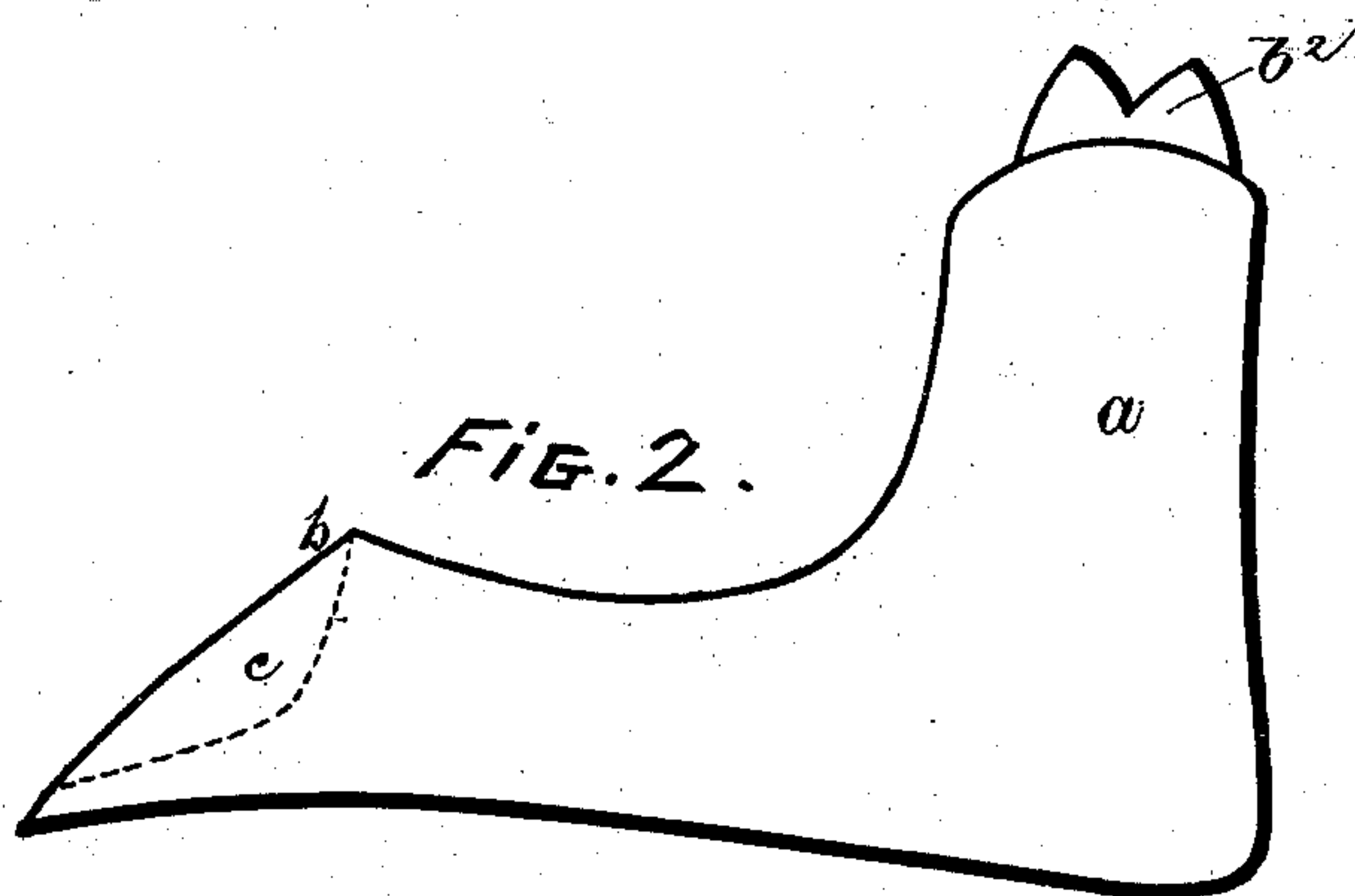
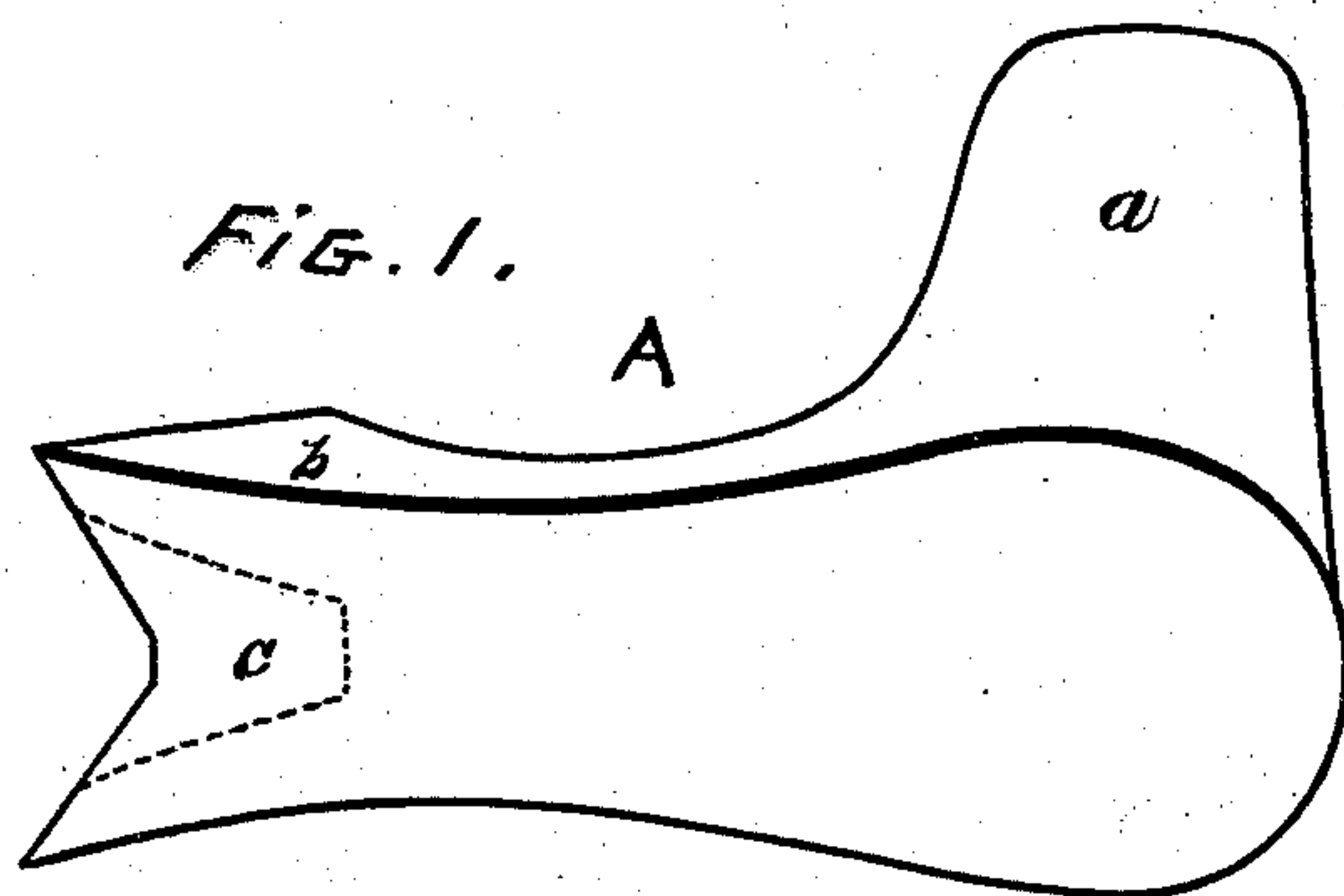


(Model.)

W. J. CROWLEY.
Last.

No. 228,178.

Patented June 1, 1880.



WITNESSES:

John W. Coughlin
H. J. Williams

FIG. 4.

INVENTOR.

William J. Crowley

UNITED STATES PATENT OFFICE.

WILLIAM J. CROWLEY, OF FALL RIVER, MASSACHUSETTS.

LAST.

SPECIFICATION forming part of Letters Patent No. 228,178, dated June 1, 1880.

Application filed March 24, 1880. (Model.)

To all whom it may concern:

Be it known that I, WILLIAM J. CROWLEY, of Fall River, in the county of Bristol and State of Massachusetts, have invented certain new and useful Improvements in Lasts, of which the following is a specification.

This invention relates to double reversible repairing-lasts of the kind shown in Letters Patent No. 216,509, granted to me June 17, 1879.

The object of my present invention is to provide a removable piece or block to serve as an extension of either of the sole-supporting surfaces of the reversible last and constitute a support for the shank and heel of a boot or shoe, thereby enabling the last to be used in repairing all parts of the bottom of a boot, instead of the sole only, as heretofore.

To this end my invention consists in the improved attachment, which I will now proceed to describe and claim.

Of the accompanying drawings, forming a part of this specification, Figure 1 represents a perspective view of my improved attachment removed from the last. Fig. 2 represents a side view of the same. Fig. 3 represents a side view of a repairing-last with my improved attachment in position in a boot or shoe. Fig. 4 represents a top view of the last and attachment.

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

In the drawings, *e* represents the double reversible repairing-last, which is of the same general form as the last shown in my above-named Letters Patent, and may be provided with the toe-protuberance shown in said patent if desired, or said protuberance may be omitted.

a represents the block or attachment forming the subject of my present invention. This attachment is a block, preferably of metal, formed to bear upon either end of the last and constitute an extension of either of the sole-supporting surfaces, said extension being adapted to support the shank and heel of a boot or shoe, and therefore making the last practically continuous from toe to heel. This block is preferably composed of metal, and may be of any suitable construction whereby the desired end is attained—viz., the provision of a shank and heel supporting extension of either of the sole-supporting surfaces of the ordinary double reversible repairing-last.

I prefer the form shown as the best that I am at present aware of, the block being beveled at *b* to rest against the inclined surface of the last at the rear end of the sole-supporting surface, and extended downwardly at *b'* to form a leg to bear upon the upper surface of the end of the last not in use as a sole-support.

To prevent accidental displacement of the leg *b'*, I provide it with one or more points or dogs, *b²*, and provide the surface of the last on which the leg bears with a series of recesses, *b³*, adapted to receive the dogs *b²*, and prevent the same from being displaced laterally and longitudinally.

By the employment of a series of recesses extending longitudinally of the last I am enabled to adjust the block *a* so as to lengthen or shorten the supporting-surface formed by said block and the sole-supporting surface of the last, and thus adapt the last for different lengths of boots and shoes.

To prevent the shank-supporting portion of the block from being displaced laterally, I provide it with a recess, *c*, and provide the last with a projection, *c'*, to enter said recess.

It will be seen that the block or attachment described may be readily applied to either end of the last, and constitutes a very convenient and desirable addition, largely increasing the usefulness of the last.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. A removable block, *a*, adapted to serve as a shank and heel supporting extension for either part of a double reversible repairing-last, as set forth.

2. A double reversible repairing-last combined with a removable block, *a*, adapted to serve as a shank and heel supporting extension for either part of said last, as set forth.

3. The combination of a double reversible repairing-last, a removable block, *a*, and means, substantially as described, for preventing longitudinal and lateral displacement of said block, as set forth.

WILLIAM J. CROWLEY.

Witnesses:

WILLIAM COYNE,
JOHN M. COUGHLIN.