

A. G. FITZ.
LAST.

(Application filed Mar. 29, 1899.)

(No Model.)

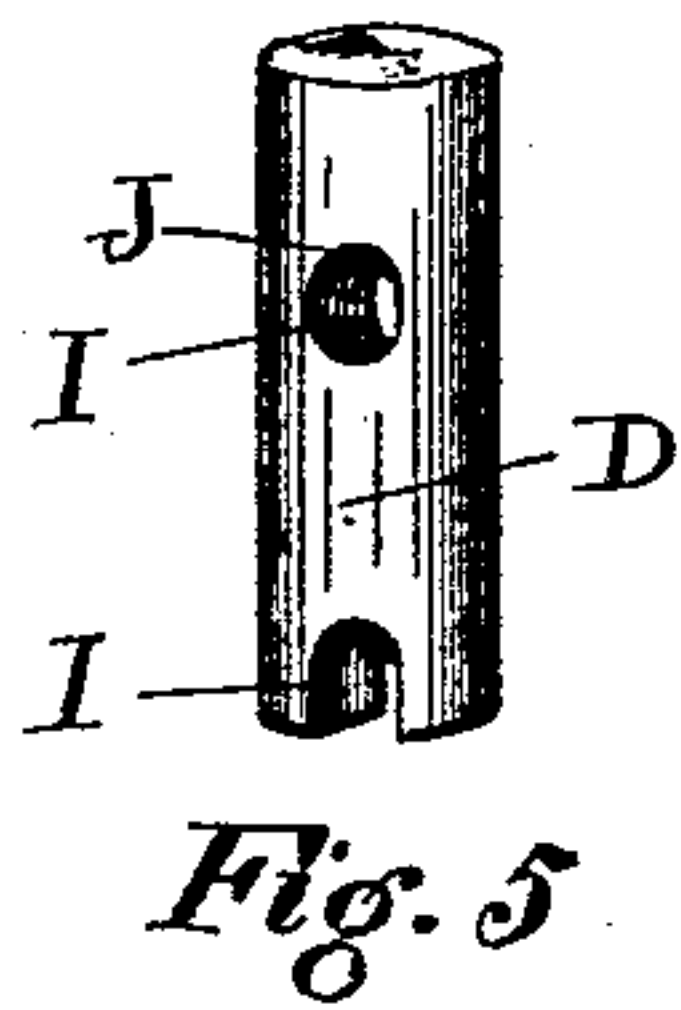
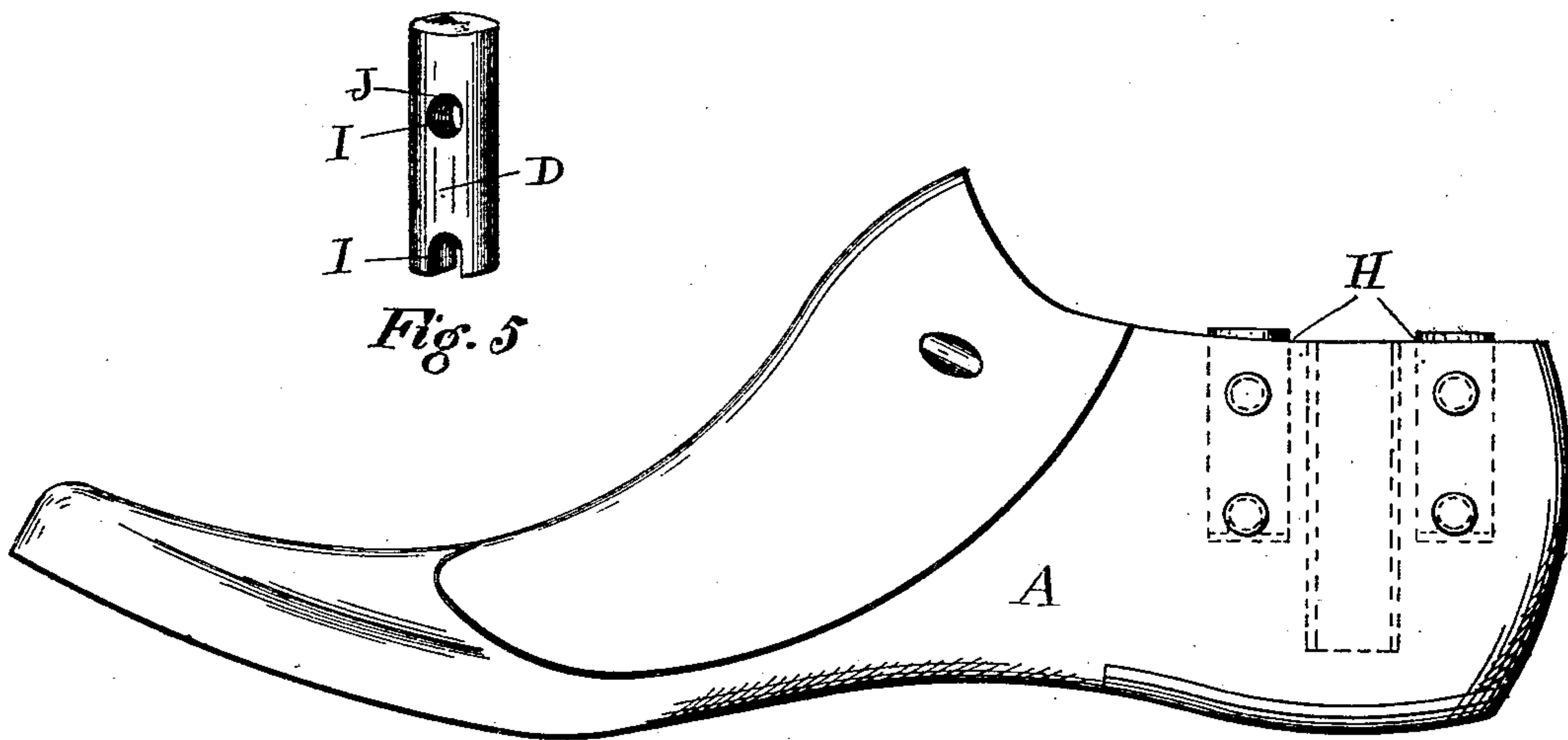


Fig. 1

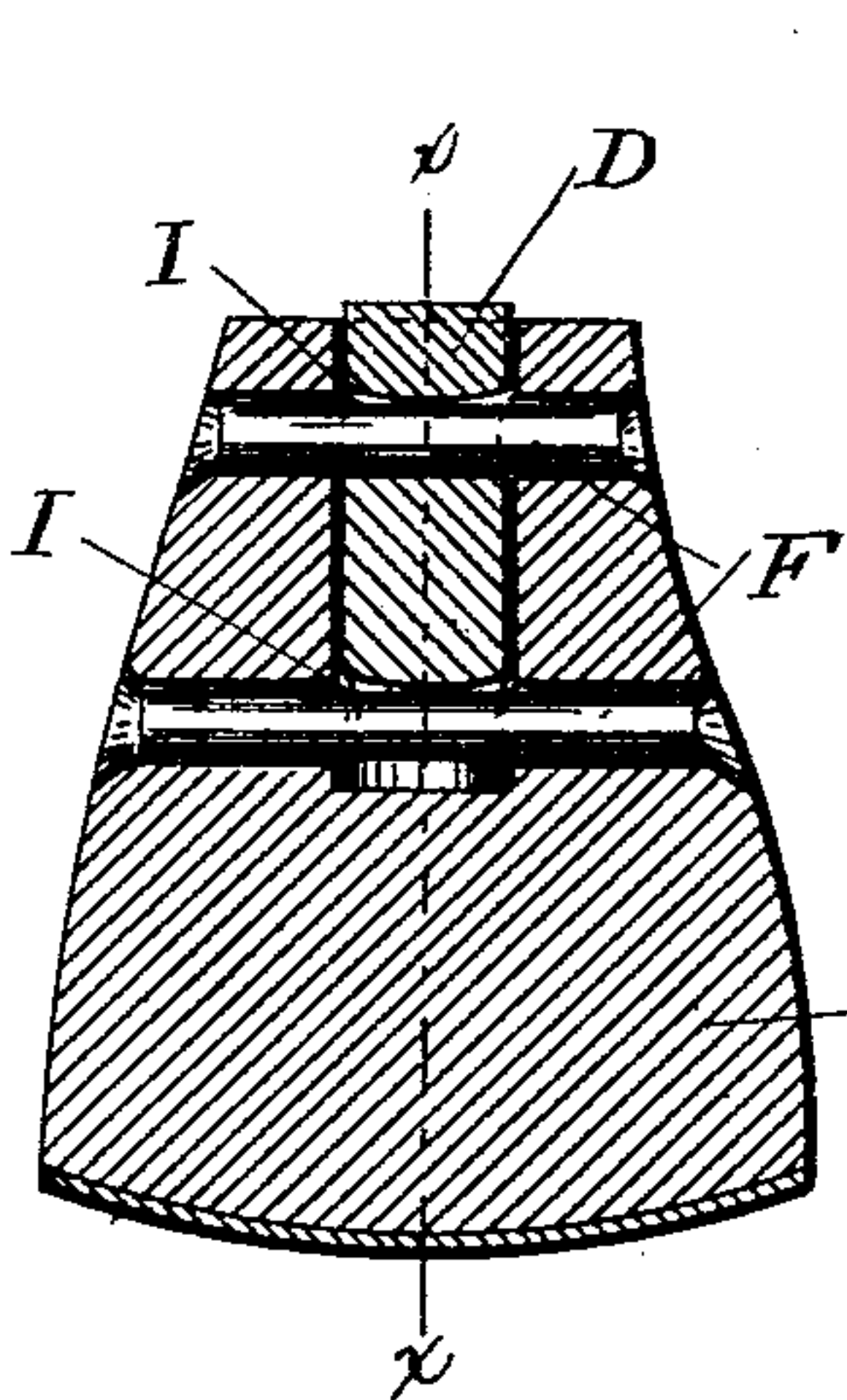


Fig. 2

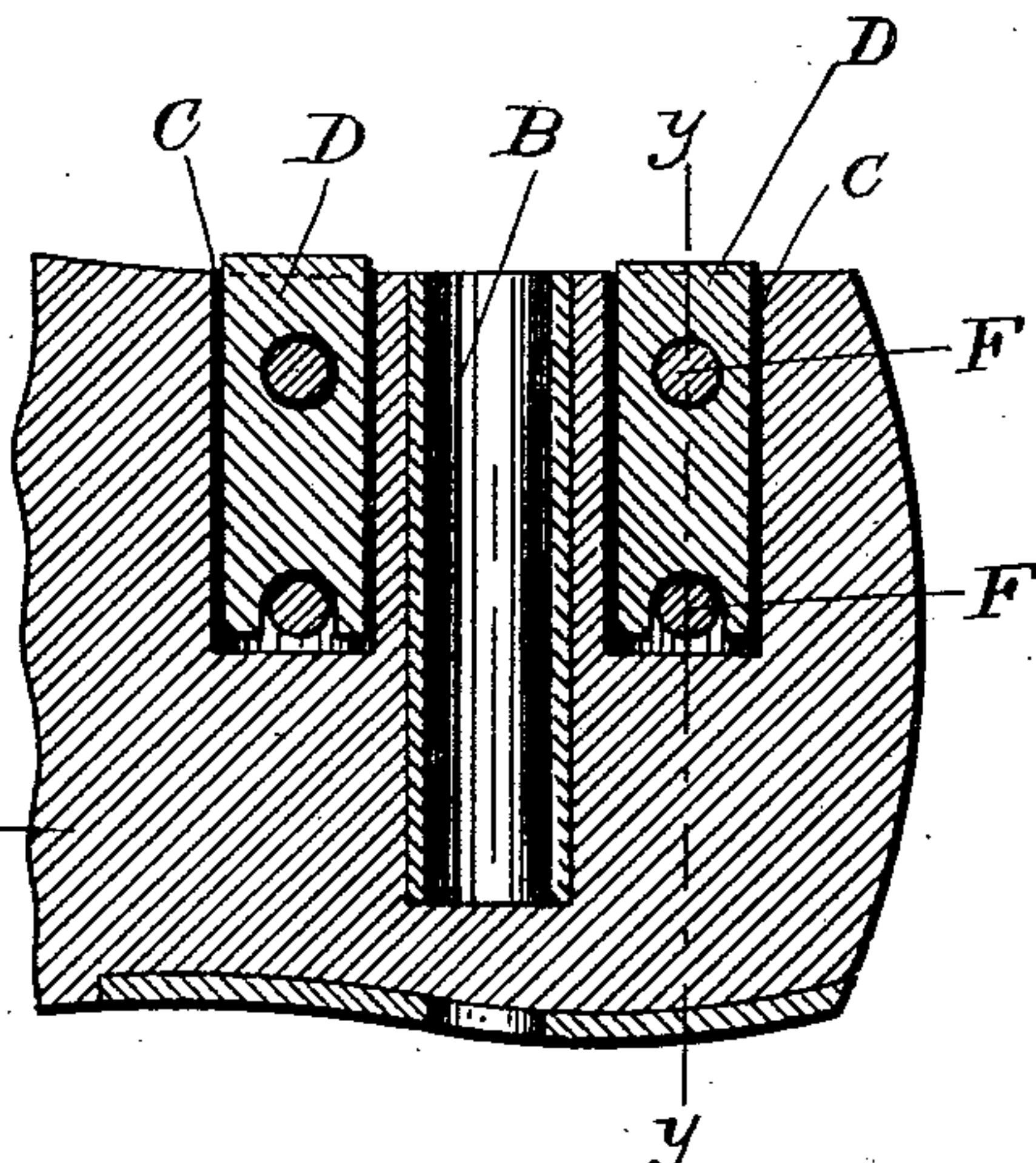


Fig. 3

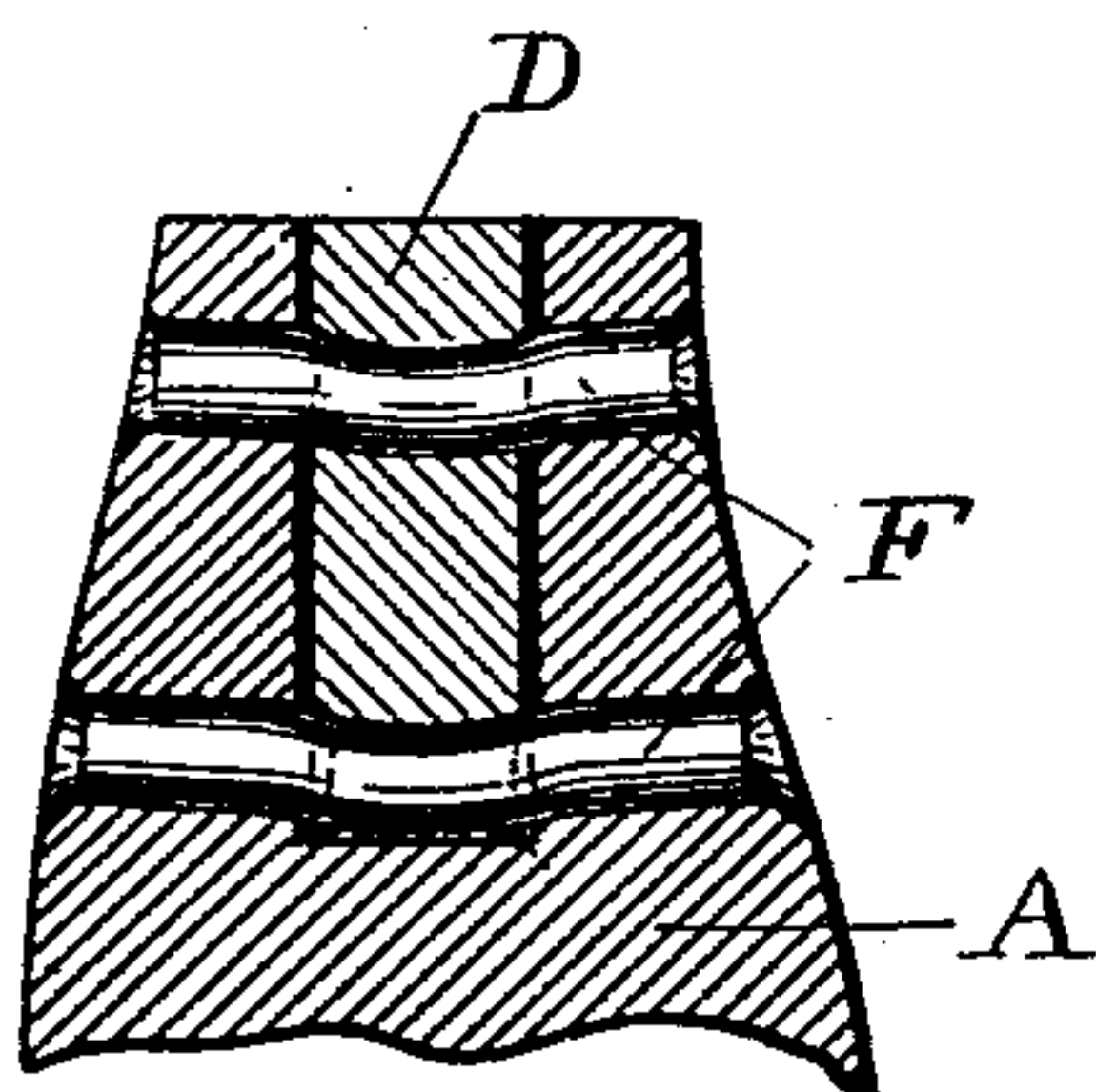


Fig. 4

Witnesses:
H. L. Cheney,
Marion Richards.

Inventor.
Arnos G. Fitz,
per Verrill & Clifford,
Attorneys

UNITED STATES PATENT OFFICE.

AMOS G. FITZ, OF AUBURN, MAINE.

LAST.

SPECIFICATION forming part of Letters Patent No. 684,420, dated October 15, 1901.

Application filed March 29, 1899. Serial No. 710,874. (No model.)

To all whom it may concern:

Be it known that I, AMOS G. FITZ, a citizen of the United States, residing at Auburn, in the county of Androscoggin and State of Maine, have invented certain new and useful Improvements in Lasts; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in lasts, and more particularly lasts adapted to withstand the great pressure and strain to which they are subjected in some of the processes incident to the manufacture of boots and shoes. This pressure is usually exerted in perpendicular lines extending from the crown to the bottom of the heel. Hitherto the pressure has been exerted directly upon the surface of the crown or on the bottom of a thimble inserted in the spindle-socket. When the pressure is exerted directly on the surface of the crown, it tends to crush and split the last, and when the pressure is exerted on the bottom of the thimble a very heavy thimble is required to withstand the pressure, and frequently the forcing of the thimble into the hole tends to split the last.

The object of my present invention is to overcome these objections and to provide a last in which a heavy thimble or even any thimble is unnecessary and in which the crushing force so disastrous in the case of a last in which all of the fibers extend substantially at right angles to the line of pressure is resisted by means of dowels located in front of or to the rear, one or both, of the spindle-hole and extending parallel with the line of pressure and transverse bars supporting said dowels, all which serve to distribute the pressure to various parts of the last.

In the drawings herewith accompanying and forming a part of this application, Figure 1 is a side elevation of a last embodying my improved construction. Fig. 2 is a transverse vertical section of Fig. 1, taken on a line passing through one of the dowels. Fig. 3 is a central vertical longitudinal section. Fig. 4 is a transverse vertical sectional view taken on the same line as Fig. 2, showing result of pressure; and Fig. 5 is a perspective view of the dowel.

Same letters of reference refer to like parts.

In said drawings, A represents a last provided with the usual spindle-hole B, extending downwardly in the face of the crown. In front of and in the rear of the spindle-hole, one or both, I make vertical holes C and insert therein dowels D, the dowels extending perpendicularly, as seen in Fig. 2. These dowels may rest directly upon the last on the bottom of the dowel-holes or they may be supported wholly or partially by bars F, extending transversely through the body of the last and through or under the dowels. The ends of the bars should be properly secured in the sides of the last. In the latter case the dowel stops a little short of the bottom of the hole in which it is inserted before pressure is first applied, in which case under the influence of great pressure the dowel is forced downwardly somewhat, carrying with it the supporting-bars until the bottom of the dowel finally contacts with the bottom of the dowel-hole, the bars being bent thereby into substantially the position indicated in Fig. 4, whereby bars and bottom of the dowel-hole cooperate to withstand the pressure.

The dowels may before use project slightly above the surface of the crown, as seen at H in Fig. 1. The tendency of the last to split laterally is resisted by the transverse bars passing through the body of the last and through or under the dowels.

There may be one or more transverse bars for each dowel, and the bearing-surface of the dowel on the bar, whether the bar passes through holes I or under the dowel, may be rounded vertically, as seen at J, to prevent the bar from being cut off, which would likely be the case if the edges were sharp. The advantages of this construction are that the crushing pressure is largely transferred from the main body of the last to the dowels, and the splitting force is overcome by means of transverse bars passing through or under the dowels and the distribution of the pressure across the last and at different points. This construction also obviates the necessity for a thimble, the pressure being exerted on the last proper in connection with the dowels and supporting-bars and not on the bottom of the spindle-hole or thimble placed therein, as is the usual custom.

Having thus described my invention and its use, I claim—

1. A last provided with a spindle-hole and vertical dowels inserted in the crown and spaced apart from said hole, said dowels terminating in the body of the last above the base-plate, whereby the pressure is transferred from the spindle-hole or base-plate to said dowels.
2. A last provided with a spindle-hole and vertical dowels inserted in the crown and spaced apart from the spindle-hole, said dowels terminating above the base-plate, and bars extending transversely in the path of each of said dowels.
3. A last having dowels extending perpendicularly into the last from the face of the crown, said dowels projecting normally slightly above the face of the crown and terminating normally above the bottom of the dowel-holes, and transverse supporting-bars located in the path of the dowels.

4. A last provided with dowels inserted in the heel vertically, rounded bearing-surfaces in the dowels to receive transverse supporting-bars, transverse supporting-bars extending in the path of the dowels, and means for securing the ends of the bars to the sides of the last.

5. A last provided with a vertical dowel inserted in the crown and having a plurality of holes extending transversely therethrough, a plurality of transverse supporting-bars passing through said holes in said dowel and means for securing the ends of said bars in the walls of the last.

In testimony whereof I affix my signature, in presence of two witnesses, this 18th day of March, 1899.

AMOS G. FITZ.

Witnesses:

EDNA L. DREW,
ELGIN C. VERRILL.