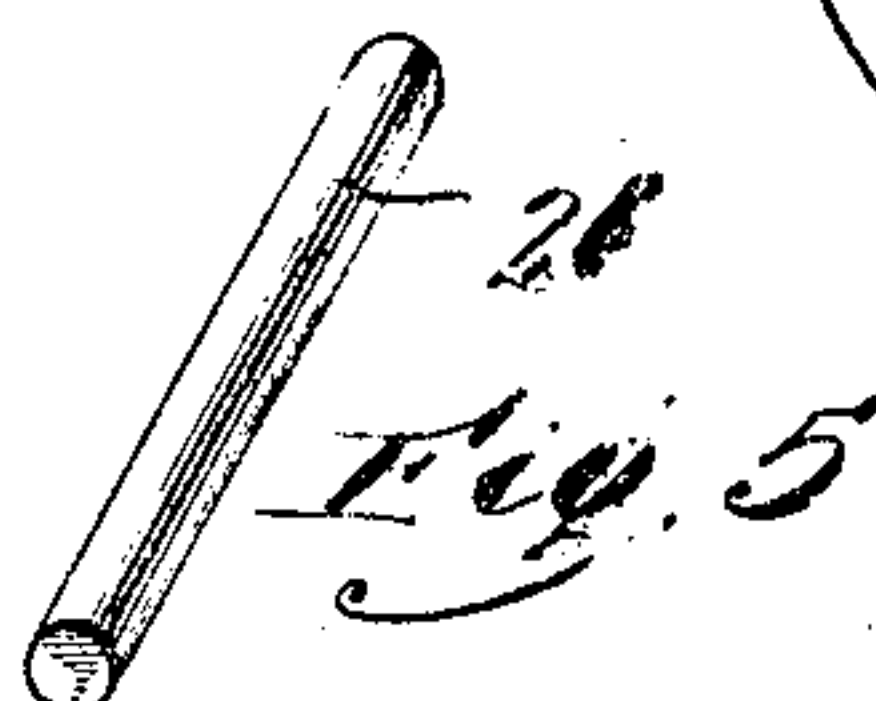
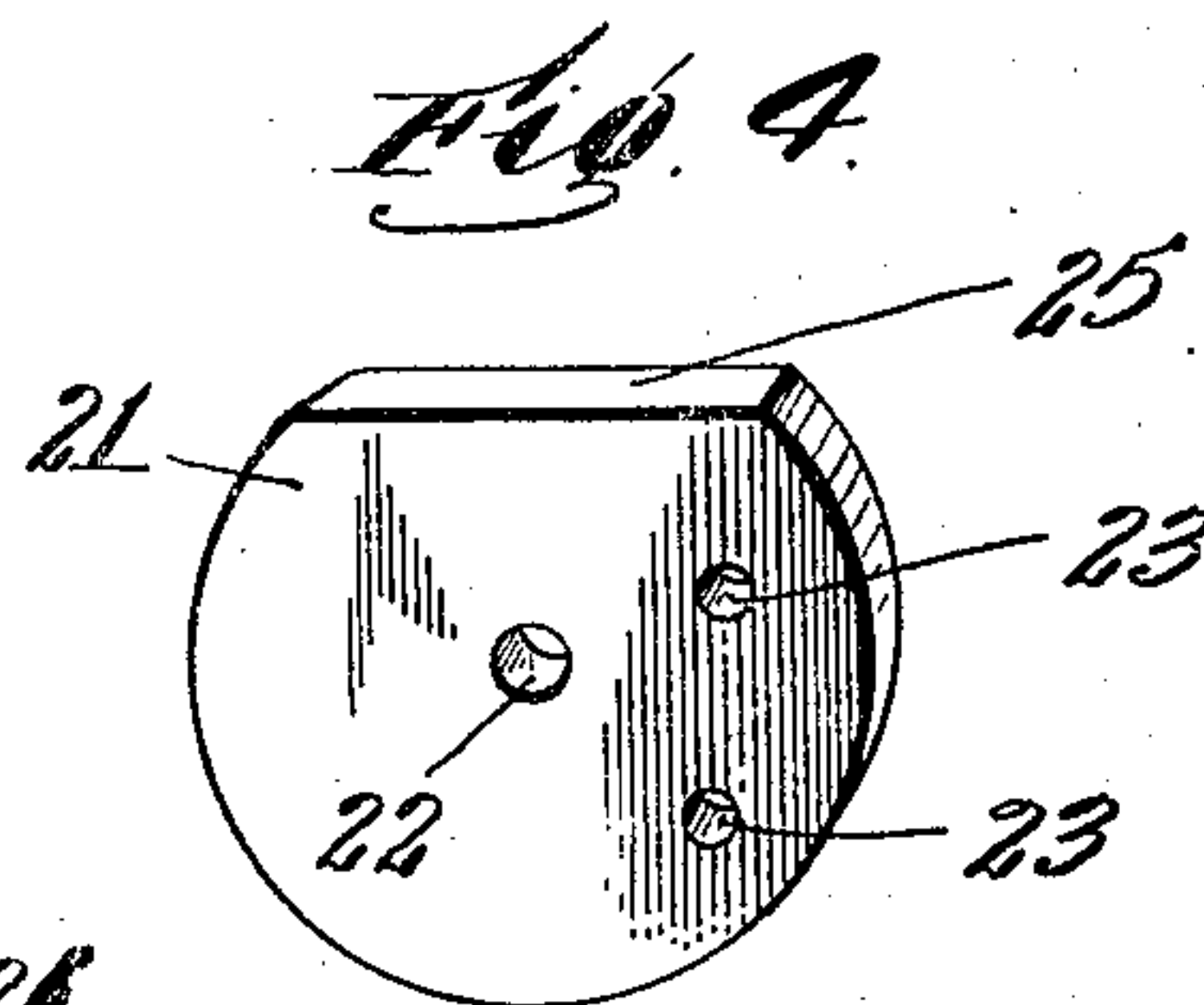
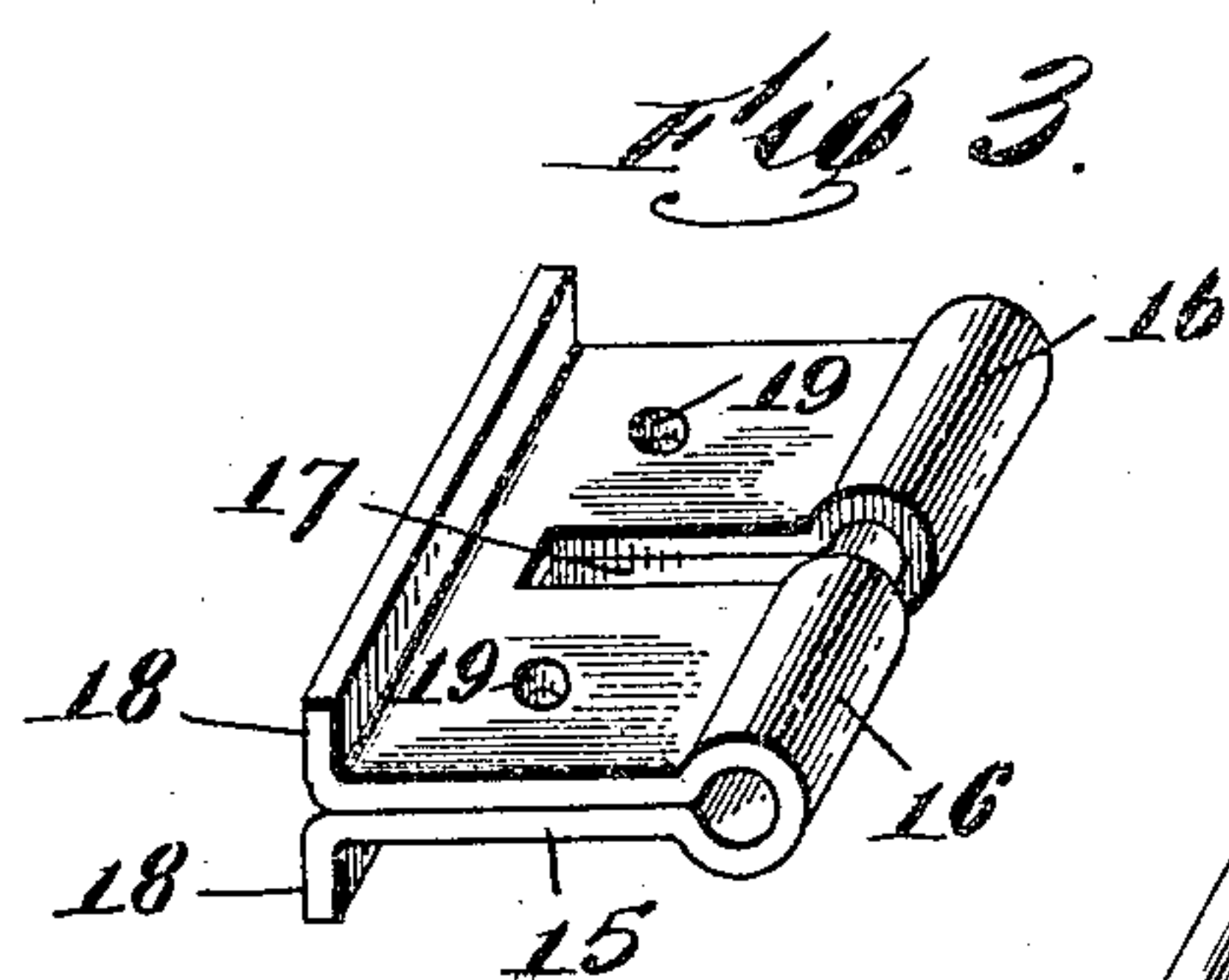
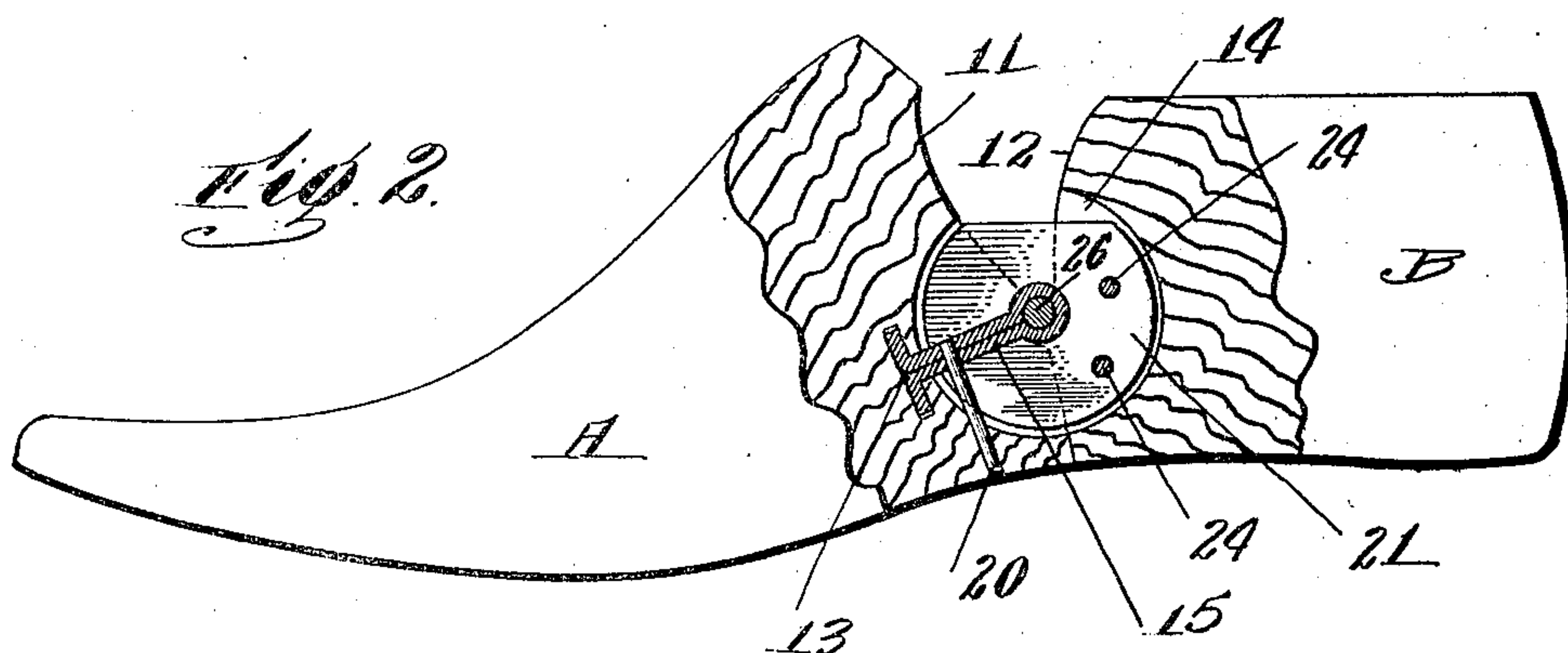
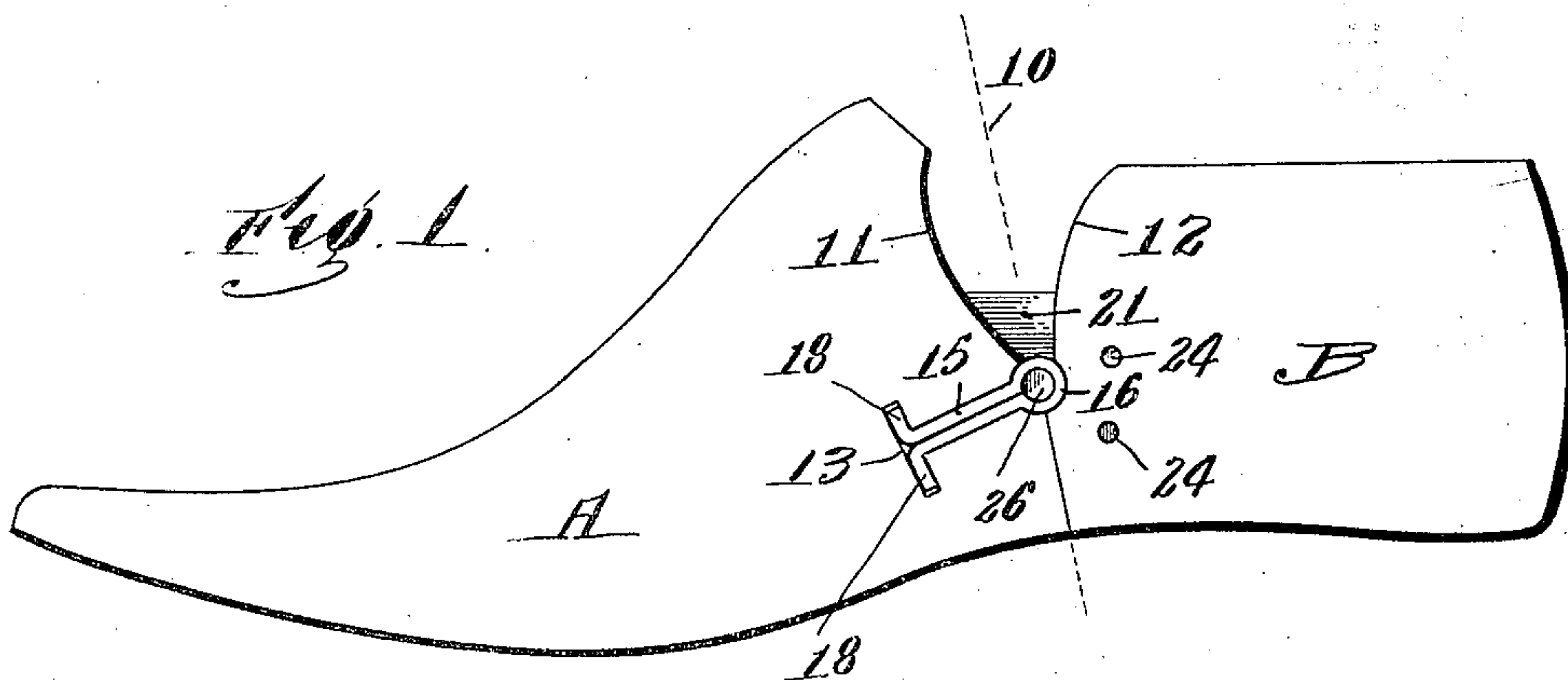


No. 859,065.

PATENTED JULY 2, 1907.

H. E. HOWE.
HINGED LAST.

APPLICATION FILED JAN. 2, 1906.



Witnesses:
C. F. Mason.
M. E. Regan.

Inventor:
H. E. Howe.
By Attorneys:
L. H. Galt & L. H. Galt

UNITED STATES PATENT OFFICE.

HENRY E. HOWE, OF AUBURN, MASSACHUSETTS, ASSIGNOR OF ONE-HALF TO ROBERT L. GOLBERT, OF WORCESTER, MASSACHUSETTS.

HINGED LAST.

No. 859,065.

Specification of Letters Patent.

Patented July 2, 1907.

Application filed January 2, 1906. Serial No. 294,137.

To all whom it may concern:

Be it known that I, HENRY E. HOWE, a citizen of the United States, residing at Auburn, in the county of Worcester and State of Massachusetts, have invented a new and useful Hinged Last, of which the following is a specification.

The object of this invention is to provide a new and improved hinged last.

A hinged last, so called, is made by dividing a solid last into two sections, respectively, called the heel part and the toe part, and by hinging these parts together so that the heel part can be turned on the toe part so that the last can be withdrawn from the boot or shoe after the lasting operation. It is essential that the hinge connecting the two parts shall be strong and shall rigidly hold the two parts in proper relation to each other so that the shoe will not warp or spring during the lasting operation. In most constructions of this class heretofore proposed, the hinge arrangement has weakened the heel part of the last so that the same is apt to crack.

The particular aim of this invention is to overcome this objection and to meet the requirements above noted.

To this end the invention consists of the construction described and claimed in this specification and illustrated in the accompanying drawing, referring to which.

Figure 1 is a side elevation of a last constructed to embody my invention. Fig. 2 is a similar view, the middle part thereof being in section. Fig. 3 is an enlarged perspective view of the butt or the part of the hinge that fits in the toe portion of the last. Fig. 4 is a perspective view of the disk that is secured in the heel portion of the last, and Fig. 5 is a perspective view of the pin which unites the structure.

Referring to the drawing and in detail, A designates the toe portion and B the heel portion of the last.

The last is made or cut out of a solid block and the two portions are sawed or separated from each other along the line 10. The toe portion A above the center of the cut 10 is then cut away on a concave line 11, as shown, and the heel portion is cut away on a convex line 12, as shown. By this cutting, the heel portion is left much stronger than where the ordinary V cut is made and less cutting away of the parts is required to permit the heel portion to turn up the proper amount, as the convex face of the heel portion will fit into the concave face of the toe portion when the heel portion is turned up.

A T-shaped slot 13 is cut laterally in the toe portion of the last, the base of the T coming at the line where the straight face of this portion of the last unites with the concave face thereof. A partial circular slot is

then cut in each portion of the last. The center of said slot coincided with the line above mentioned, so that when the two portions of the lasts are butted together, as shown in Fig. 2, a substantially circular slot 14 will be formed in the last with its center at the meeting line of said straight and curved faces of the two portions of the last. A hinge of peculiar construction is then inserted. This hinge consists of a butt 15 preferably formed from sheet metal, as shown in Fig. 3.

The butt is composed of a body piece folded back on itself so as to leave two bearings 16—16 with a slot 17 between them. The ends of the butt are turned out as at 18—18, the body portion of the butt and these turned-out portions 18—18 thus forming a T which is proportioned to fit exactly into the T-slot cut in the toe portion of the last. In some cases the bends 18 are omitted and a straight slot or cut is made in the toe portion of the last. Holes 19—19 are also punched in the body portion of the butt. The butt is slid into the T-slot 13 of the toe portion of the last and is secured in place therein by pins 20—20 which are driven into the toe portion of the last to enter the holes 19—19 in the body portion of the butt.

The section of the hinge which goes into the heel portion of the last comprises a disk 21 which is preferably constructed out of sheet metal and which is formed with a center hole 22 and two holes 23 at one side of the center. The disk 21 is inserted in the slot cut in the heel portion of the last, which slot may be circular, elliptical, or otherwise curved, and is rigidly secured therein by pins 24—24 which are driven through the heel portion of the last to enter the holes 23—23 in the disk. The top of the disk is preferably cut off as at 25 so as to leave the notch in the last clear. After the sections of the hinge have been secured in the portions of the last, as described, that part of the disk 21 which projects from the heel portion B of the last is fitted into the slot 17 in the butt portion of the hinge secured in the toe portion A of the last. A pin 26 is then passed through the bearings 16—16 and the center hole 22 in the disk 21, and the ends of the pin are riveted on the outsides of the bearings 16—16 so that the pin will be permanently held in position. By this arrangement, the two portions of the last will be pivoted or hinged together so as to turn on the pin 26 at the line where the straight faces of the last meet the curved faces of the last.

By the arrangement described, it will be seen that when the portions of the lasts are turned relatively to each other, that the disk 21 will turn in the slot 17 between the bearings 16—16 so that the bearing of the hinge will be entirely of metal. It also will be noted that very little cutting, that is, practically part of a circular slot, has to be done in the heel portion of the last,

whereby the same is left strong and not apt to crack. It also will be noted that the pin 26 can be made large enough so that the parts will be very strongly secured together. It also will be noted that the disk 21 fitting
 5 into the partial circular slots cut in each portion of the last, holds the portions of the last together strongly so as to prevent twist or play. It also will be noted by cutting the disk away as at 25, that plenty of room is
 10 left above the hinge for the insertion of the usual springs or devices for holding the two portions of the last normally in operative position. Thus by the construction described, a strong, simple and practical device for the purpose stated is provided.

The details and arrangements herein shown may be
 15 greatly varied by a skilled mechanic without departing from the scope of my invention as expressed in the claims.

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

- 20 1. A divided last comprising two portions, and a hinge uniting the portions comprising a sheet metal butt formed of a piece of metal bent on itself so as to leave two

bearings with a slot between them, the toe portion having a slot therein into which the butt is inserted, the heel and toe portions of the last having a circular slot therein, a
 25 metal disk having a hole therein arranged in said slot and secured to the heel portion of the last, the said disk also fitting in the slot between said bearings, and a pin secured in said bearings and passing through the hole formed in the disk. 30

2. A divided last comprising a toe portion and a heel portion, a hinge uniting said portions, said hinge being made up of a butt made out of sheet metal and bent on itself so as to form two bearings with a slot between said
 35 bearings and turned up portions on the ends of said butt, the toe portion of the last having a slot therein into which said butt is placed, pins driven in the toe portion of the last and into said butt to secure the same in place, the last portion having a circular slot, a disk having a center
 40 hole therein fitted in said circular slot, pins securing said disk to the heel portion of the last, and a pin passed through said bearings and the center hole in the disk to unite and hinge the two parts together.

In testimony whereof I have hereunto set my hand, in the presence of two subscribing witnesses.

HENRY E. HOWE.

Witnesses:

LOUIS W. SOUTHGATE,
 ROBERT L. GOLBERT.