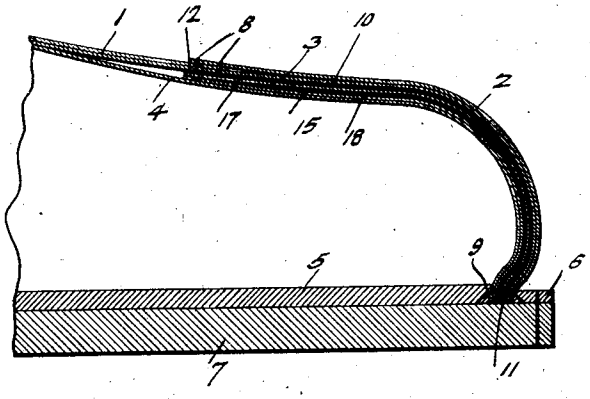
Aug. 9, 1927. 1,638,263

J. F. JONAS

SHOE TIP STIFFENER

Filed July 1, 1925

Fig. 1.



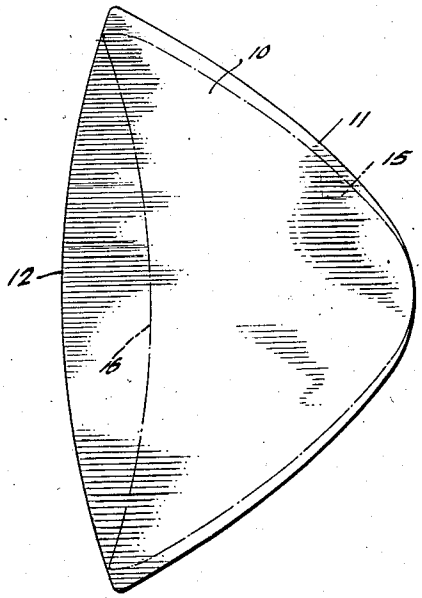


Fig. 2

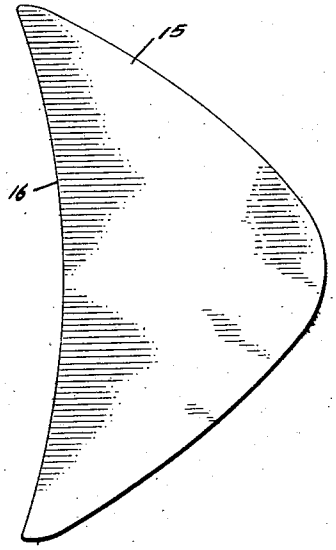


Fig. 3.

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JACOB F. JONAS, OF BELLEVUE, KENTUCKY.

SHOE-TIP STIFFENER.

Application filed July 1, 1925. Serial No. 40,889.

This invention relates generally to the shoe art, and is particularly directed to method and means for reinforcing or stiffening the forward or tip portion of a shoe upper, the term "boxing" used hereafter being generally indicative of the material used, and the result obtained by such stiffening process.

An object of the invention is particularly to provide a boxing of the proper rigidity, in which the upper free rear crosswise edge of the insert stiffening material will not rub the foot of the wearer, this object being herein accomplished by substantially tapering or thinning that portion of the boxing adjacent the stitching line of vamp and tip, by relatively offsetting layers of stiffening material lengthwise of the shoe and crosswise of said upper rear portion or free edge of the boxing, to provide a feather edge.

Another object is to prevent curling of the material at the rear crosswise or free edge of the boxing, which object is accomplished by providing a boxing composed of a plurality of substantially overlapped relatively thin layers, sections, or laminations of hard flexible material, between which overlapped sections are also overlappingly interposed sheets of padding or lining material which are extended beyond the upper rear edges of the stiffener sections adjacent the tapered zone or portion of the boxing.

Another object is to provide for a certain degree of adjustment or sliding of the layers of the boxing one upon the other for obtaining a certain flexibility of the boxing and preventing buckling of the layers, all without sacrifice of proper rigidity, this object being accomplished by using sections of stiffening material having smooth polished surfaces, and interposing cloth or padding sections therebetween and thereagainst.

Other objects and advantages appear in the description of the drawing forming part of this specification and in said drawing:

Figure 1 is a medial longitudinal vertical section of the boxing herein, incorporated in a shoe, only the vamp and toe or forward portion of the shoe being illustrated.

Figure 2 is a plan view of the upper reinforcing or stiffening section, showing in dot and dash lines, the position of the lower reinforcing or stiffener section as superposed relative thereto.

Figure 3 is a plan view of the lower stiffener section.

The boxing or stiffening elements herein comprise a plurality of sections of sheets of stiff or hard flexible surfaced material, preferably celluloid or similar substance, the length of the respective sections along the longitudinal medial line and laterally at each side of such line, differing from one another, the sections being relatively offset longitudinally when attached in the shoes, in a manner to provide a tapered or feather edge portion converging rearwardly toward the bending zone of the shoe, and ending adjacent the connecting line between vamp and tip. The sections are substantially overlappingly superposed and are separated from one another and from the outer leather layer of the shoe and foot of the user, by suitable interposed linings, in addition to the regular common inner or second, and outer or first linings. The upper or rearward crosswise edge of the one section lies substantially beneath the line of stitching connecting the tip and vamp and the upper or rearward crosswise edge of another section lies below and forwardly of the upper edge of the outer section, thus offsetting the upper edge of the sections to avoid thickening at the bending zone of the shoe. The thickness of the boxing at the free edge is thus gradually reduced or convergently tapered as it approaches the bending line of the shoe.

The numeral 1 indicates the outer fabric or leather layer, 2 the toe or tip section as a part of the vamp, 3 the outer or first lining, 4 the inner or second lining, 5 the insole, 6 the welt and 7 the out-sole, all of which elements are similar to those of an ordinary shoe in respect to form and manner of attachment.

My improved stiffening means includes an outer section 10 of flexible stiffening material, such as celluloid or like substance, having smooth faces, which section is represented in Figure 2 in the form of a substantially curvilinear triangular blank, having an attaching or stitching edge 11 of the configuration shown, with the rear crosswise edge 12 convexly curved as a means for obtaining a relative longitudinal offsetting of the sections as herebelow described. This section or layer is adapted to lie against the first lining 3 with its edge substantially beneath or extending slightly rearwardly beyond the stitching 8, connecting the vamp and tip.

The attaching edge 11 of the blank is stitched as at 9 in the usual manner. Below the section 10 is a section or layer 15 having a contour substantially the same as that of the upper section, the lateral dimension of this section, however, being slightly smaller than that of the upper section, to allow for the insertion of a layer 17, of fabric or lining between the two sections without causing buckling of the same when they are stitched in the shoe. The section 15 is concavely curved as at 16 along its rear edge to provide as shown in Figure 2, a longitudinal offset relative to the upper section, when the sections are attached in the shoe, the offset tapering laterally from each side of the medial line toward the attaching ends of the sections. The offsetting of the sections avoids thickening of the stiffener means between the first and second linings near the stitching line between the vamp and tip, and adjacent that portion of the shoe which is bent in walking. The lining 17 is interposed between the inner and outer layers or sections 15, 10, and a lining 18 is interposed between the second lining 4 and the layers or sections 15. The thickness of the ensemble of layers thus decreases or converges on approach to the bending line or zone of the shoe, and greater flexibility of the boxing adjacent that zone is obtained. The stiffener, however, has sufficient rigidity to prevent buckling or falling at the toe portion. The linings 17 and 18 are substantially the shape of the outer stiffening section 10 and, therefore, the lower lining 18 overlaps the free edge of the lower section 15, and the two linings 17, 18, meet below the outer or rearward overlapping edge of the section 10, and form with the inner lining, a three-ply cushion between the rear end of the upper or outer stiffener 10 and the foot of the wearer, the free edge of the lower stiffener being in turn covered by the linings 4 and 18.

The tapered or offset relation is shown clearly in Figure 1 in which it will be noted that the ensemble of stiffener sections including the two linings 17, 18, convergently taper from the upper inner end of the lower stiffener 15 to a point substantially beneath the stitching line between the vamp and tip and adjacent the bending zone of the shoe upper. The upper edge of each stiffener section is prevented from coming in contact with the foot of the wearer in one instance by three layers of lining and in the other by two layers.

A stiffener is thus provided of required rigidity with the upper free rear edge substantially tapered or thinned in a direction lengthwise of the shoe and held by linings from curling to rub the foot of the wearer. The use of thin sheets of smooth surfaced stiffening material to form a laminated structure consisting of alternate sections of stiffening and padding material and the varying lengths medially of the sections of stiffening material provide a means or method by which the thickness of the boxing may be increased where most needed, without the formation of a decided ridge at the bending zone of the shoe and rear of the boxing. This construction also provides a toe portion of unusual flexibility, particularly adjacent the stitching line between the vamp and tip and throughout the zone into which the foot of the wearer projects. A greater number of layers of both characters may be used as required.

In shoes which do not employ a special tip piece 2, the upper material extends, or continues to the sole. In such construction of shoe a plurality of stiffener of corresponding outline following the shape as shown for one of the stiffener layers Fig. 3 having the convexly curved edge 16 are employed but of different length longitudinally to provide for the overlapping of layers at the convex edge, with the fibre layer therebetween and underside of the lower or innermost stiffener layer.

Having thus described my invention, what I claim is:

1. In a shoe, a tip stiffener of composite structure adapted to be interposed between the linings of a shoe vamp comprising, a plurality of superposed stiffener layers of flexible sheet material of appropriate tip pattern outline, a first layer thereof having a lateral end of convex outline and a second layer having a corresponding end of concave outline causing the first to over-lap the second, and a fibrous layer interposed between said stiffener layers corresponding in pattern outline to said first stiffener layer.

2. In a shoe, a tip stiffener of composite structure adapted to be interposed between the linings of a shoe vamp comprising, a plurality of superposed stiffener layers of celluloid sheet material of appropriate relative different tip outline, the layers respectively having convex and concave ends for off-setting the same adjacent the line of stitching the tip to the vamp, and a layer of fibrous material interposed between said stiffener layers.

In witness whereof, I hereunto subscribe my name.

JACOB F. JONAS.