M. BROCK.

HEEL BAND.

APPLICATION FILED JULY 17, 1912.

1,108,101. Patented Aug. 18, 1914.

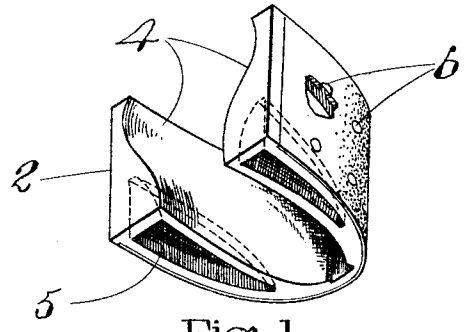


Fig. 1.

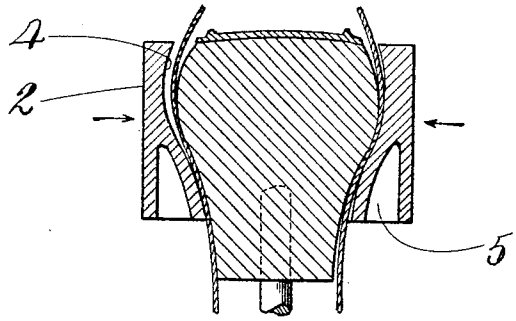


Fig. 2.

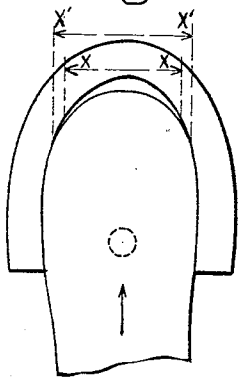


Fig. 3.

WITNESSES.

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UNITED STATES PATENT OFFICE.

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HEEL-BAND.

1,108,101. Specification of Letters Patent. **Patented Aug. 18, 1914.**

Application filed July 17, 1912. Serial No. 709,971.

To all whom it may concern:

Be it known that I, MATTHIAS BROCK, a citizen of the United States, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented certain Improvements in Heel-Bands, of which the following description, in connection with the accompanying drawings, is a specification, like reference characters on the drawings indicating like parts in the several figures.

This invention relates to shoemaking machinery and particularly to shoe end embracing bands such as are used in lasting machines of the bed type and comprises improvements devised as the result of practical experience in the use of the heel band shown in my earlier application Serial No. 522,987.

An important feature of this invention consists in a heel embracing band, which may advantageously be formed of balata or of moldable compositions consisting largely of that gum, which may open and close about the heel portion of a last and the side portions or wings of which may or may not have straight outer faces while the inner faces are contoured substantially to the vertical curvature of the shoe sides at and in the region of the heel breast.

The side walls of the band may, in accordance with another feature of the invention, be initially formed to engage the shoe first by their lower portions whereby the area of engagement will spread upwardly and cause the upper to be conformed to the contour of the last throughout the height of the band and to be wrapped snugly about the last to the edge of the shoe bottom. The lower portions of the wings of the band may advantageously be formed relatively thicker than the upper portions and be chambered from the lower edge upwardly to present a double wall to render the adjacent portions of the band walls more yielding than the other portions.

In accordance with another feature of the invention the heel band is constructed to draw the upper materials forwardly about and to conform to the contour of the rear end of the last. To this end the band, which is resilient, is formed at its rear closed end of a width less than the breadth of the portion of the heel to be embraced by it, whereby it is adapted to grip and tighten forwardly the stock on the last as the shoe is drawn back into the band in the usual manner in jacking a shoe for the operation of a bed lasting machine. The material of which the band is made contributes largely to the efficacy of this portion of its operation as does the character of the inner face of the band which face, by pressure and a very moderate degree of heat, is rendered very smooth and firm. This face of balata adheres firmly to the leather of the shoe upper, to a much greater degree than does a leather heel band, and can also be used upon colored upper leathers such as russets without discoloring the upper as does a leather heel band under similar use. A heel band so formed of balata also exceeds in durability, both as to the condition of its inner face and as to resiliency and permanence of shape, heel bands of any other available material known to me. One of the practical advantages of great value is that this heel band of balata having the described finish on its inner face adheres to or grips the upper materials so firmly to the contour of the last that it has proven to be practical to withdraw from the shoe before lasting that assembling tack which is driven into the rear end face of the shoe preparatory to pulling over and lasting for the purpose of holding the upper materials from displacement with relation to this portion of the last. This band, by conforming to the last as completely as it does and by reason of the adhesion to the upper, renders unnecessary the continuance of this tack in the shoe. Inasmuch as the abrasion of this tack upon the rear part of the inner face of a heel band usually has been the factor which determinated the life of a heel band, the importance of its elimination may be appreciated. The improvements of these bands as above described have rendered unnecessary the use of the renewable wearing piece 147 described in my earlier application as adapted to take the abrasion of these assembling tacks.

Preferably an outer covering of leather is applied to the balata heel bands and is secured by being molded thereon under the heavy pressure to which the balata is subjected for obtaining the required resilience and the described characteristics of its in-

ner, shoe engaging face. For further securing the leather backing it is preferably provided with a plurality of holes into which the balata composition is forced during the molding operation to form integral studs the ends of which spread more or less at the outer ends of the holes to form heads which securely hold the backing upon the body of the band.

The invention will now be described in connection with the drawings and then particularly pointed out in the claims.

Figure 1 is a perspective view of a heel band made in accordance with this invention; Fig. 2 shows the preferred relation between the width of the upper and lower portions respectively of the band and the shoe which is to be embraced. Fig. 3 shows the preferred relation between the width of the rear or closed end portion of the band and the breadth of the portion of the heel which is to be drawn into the band.

The heel band is made, preferably, of balata and leather fibers and molded to the shape shown in Fig. 1 while moderately warm but with heavy pressure and without vulcanization. The band preferably has vertically straight outer faces 2 and inner faces 4 which are contoured substantially to the shape of the portions of the last which they are, respectively, to engage. The rear portion of the band, as at x—x, is of slightly less width than the portion of the last x'—x' which is to be drawn into it in the jacking operation preparatory to lasting, see Fig. 3, whereby the upper materials are frictionally tensioned or tightened forwardly about the rear end of the last by the insertion of the shoe into the band.

The inner face 4 of the band, which is the bare balata composition, is made smooth and is hardened by the action of the forming dies and adheres to the upper leather very closely and can be made to tighten the stock forwardly as described without discoloring even the more delicate of colored upper stock such as russet leathers. The adherence of this formed inner face of the balata band to the leather and the conformation of the band to the shape of the last also prevents any displacement of the upper stock by the wipers in the lasting operation.

The lower portions of the sides or wings of the band are relatively thicker than the upper portions and preferably are chambered as at 5 from their lower edges upwardly to form double walls from the lower edge through a portion of the height of the band and a portion of the length of each side. This provides particularly elastic or resilient sides and the band is preferably initially formed, with relation to the style of last for which it is intended, Fig. 2, to cause these lower portions to engage the shoe first when the band is closed whereby the area of engagement is made to spread from the lower edge upwardly to gather and wrap the upper toward the edge of the last bottom. These elastic areas yield as the band is closed so that the band is not necessarily twisted.

The outer face 2 of the band is made of a leather cover which is secured in place during the molding operation by pressure. The cover has a plurality of holes through it into which are molded portions of the balata, forming studs 6 integral with the body of the band. These studs, under the molding pressure, spread at the outer face of the cover to form heads which add to the security of the attachment of the cover to the body of the band.

Having explained the invention and described a preferred embodiment of it, I claim as new and desire to secure by Letters Patent of the United States:—

1. A heel embracing band having a vertically straight outer face and an inner face on its wings or side portions which is continuous or uninterrupted throughout the height of the band and is contoured substantially to the vertical cross sectional shape of the foot in the region of the heel breast.

2. A heel embracing band having side portions or wings formed on their inner faces to engage the shoe first near their lower edges when the band is closed, as and for the purpose described.

3. A band adapted to open and close about the heel end of a shoe and having wings which have relatively thin upper portions and lower portions which are thicker and are chambered substantially as described to render them resilient.

4. A heel band made of resilient material and having in its walls chambers arranged to render the portions of the band adjacent thereto more yielding than other portions of the band.

5. A heel band made of resilient material and having, extending upwardly from the lower edge of each side portion or wing, a chamber rendering the lower portions of the wings relatively more yielding than other parts of the band.

6. A heel embracing band of resilient material having at its rear closed end a normal width less than the breadth of the portion of the heel to be embraced and adapted, when the band and shoe are brought together longitudinally, to grip and tighten forwardly the upper materials about the rear end of the last.

7. A molded heel band having an outer covering of leather provided with a plurality of holes and integral studs of the band material molded into said holes.

8. A heel band made of balata and having an outer covering of leather molded upon it, said covering having holes extending

through it and into which the balata is molded for further securing the covering in place.

9. A heel band having a backing of tough, flexible wear-resisting material extending across its rear closed end and having a smooth, hardened inner face formed of balata intimately united to the backing around the rear closed end of the band as and for the purposes described.

10. A band adapted to open and close about the heel end of a shoe and having an outer wear resisting surface of leather and an inner shoe engaging surface composed of balata and united permanently to the leather throughout its extent, said balata being molded to approximate the contour of the heel portion of a shoe and present a heel receiving space of reduced width at the lower part of the band.

11. A band adapted to open and close about the heel end of a shoe and having an outer wear resisting surface of leather and an inner shoe engaging surface composed of balata and united permanently to the leather throughout its extent.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

MATTHIAS BROCK.

Witnesses:
ARTHUR L. RUSSELL,
WILLIAM B. KING.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."