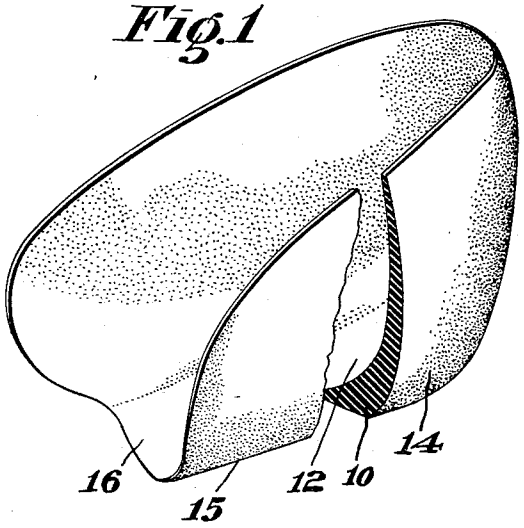
Dec. 15, 1931. F. W. STUART 1,836,825

SHOEMAKING

Original Filed May 7, 1929

Fig. 1



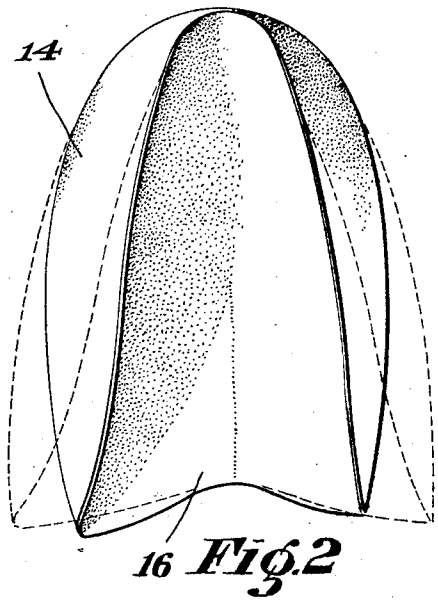




Fig. 2

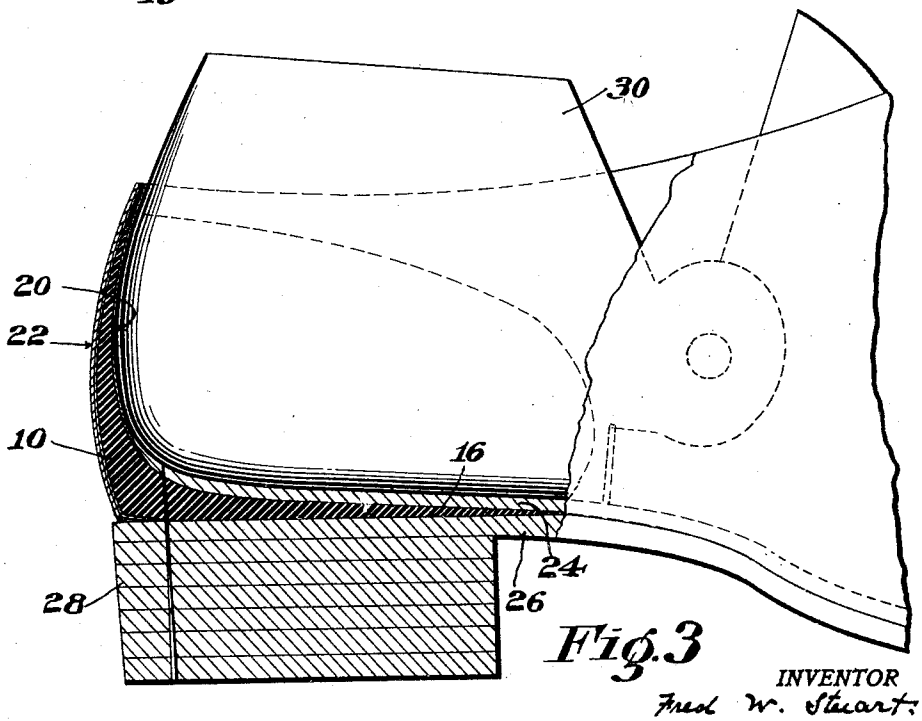



Fig. 3

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# UNITED STATES PATENT OFFICE

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## SHOEMAKING

Original application filed May 7, 1929, Serial No. 361,052. Patent No. 1,747,331, dated February 18, 1930. Divided and this application filed January 10, 1930. Serial No. 419,856.

This invention relates to improvements in the manufacture of boots and shoes, characterized by the employment of a counter of novel construction.

The principal function of the counter or heel stiffener in a shoe is to maintain the rear or counter portion of the shoe in the lines imparted to it by the last upon which it is made, so that the style and fitting qualities of the shoe shall not be lost in wear. Heretofore, counters have been molded from leather or leatherboard, and although they are satisfactory at first in holding the shape of the shoe, they are likely to become set during extended wear in a more or less distorted condition because their resilient characteristics are limited and they tend to lose their capacity for returning always to the initial position determined in the lasting operation. The failure of leatherboard counters is particularly noticeable in allowing the upper edge of the counter portion of an oxford shoe to gap away from the sides of the wearer's heel. In practicing the method of my invention I employ an improved counter of resilient material molded to fit the heel of the wearer and tending, on account of its resilient character, always to resume its correct initial condition in the shoe, regardless of the length of time it may be worn.

As herein shown, the inner surface of my novel counter is smoothly and continuously curved, fitting substantially the entire heel of the wearer and furnishing a yielding and clinging cushion which improves not only the fit of the shoe but also its comfort in wear, both on account of its cushioning effect and because it prevents the counter portion of the shoe from slipping up and down upon the foot. While the inner surface of the counter conforms to the curvature of the heel of the wearer, the outer surface thereof may be shaped independently to impart to the shoe the smooth lines of exterior curvature desired and the sharp break or vertex about the heel-seat thereof.

A counter constructed as above outlined possesses important advantages from the standpoint of shoemaking in that it permits the use of a round-ended last by filling the space which must otherwise be occupied by the wood of the last in shaping the shoe. In other words, it has been considered necessary heretofore to shape the rear end of the last substantially to the exterior contour desired in the shoe, whereas by using the counter of my invention it is possible to build up this desired shape by combining a round-ended last with a molded counter having a body portion of a substantial thickness about the heel-seat and particularly at the rear thereof. In this way, it is possible not only to improve the lines of the shoe but to remove the last easily from the lasted shoe without any tendency to damage or misplace the lining thereof.

In an important aspect, accordingly, my invention consists in an improved method of making boots and shoes which consists in lasting the upper at the heel-seat over a composite form, comprising a round-ended last and a molded counter which supplements the last and presents an exterior surface different from the last and corresponding substantially to the shape desired in the counter portion of the shoe.

These and other features of the invention will be best understood and appreciated from the following description of a preferred embodiment thereof, selected for purposes of illustration and shown in the accompanying drawings, in which

Fig. 1 is a view in perspective of the counter, showing a portion broken away;

Fig. 2 is a plan view of the counter, suggesting in dotted lines an expanded position; and

Fig. 3 is a view, partly in section, of the heel-seat portion of a shoe lasted over the composite form of the last and counter.

The counter herein illustrated as being suitable for use in carrying out the method of my invention comprises a body portion 10 of rubber or rubber composition, or any material having the resilient characteristics of rubber, molded with an interior surface 12, an exterior surface 14 and a bottom portion comprising a connecting web 16. The inner surface 12 is of smooth continuous curvature, merging into the surface of the web

16 and conforming substantially in its shape to the sides and rear of the heel of the wearer. On account of its flowing interior curvature, therefore, the counter fits the curved contour of the wearer's heel with more exactness than counters manufactured heretofore. The exterior surface 14 is shaped to correspond substantially to the exterior lines of the counter of the shoe and to this end has a sharp break or vertex 15 extending about the periphery of the heel-seat and marking off the curvature of the sides of the counter from its substantially flat bottom. It will be noted that the body of the counter is thus made considerably thicker opposite the vertex 15 than elsewhere and that a considerable mass of resilient material is included between the rounded curvature of the interior face 12 of the counter and the surfaces intersecting to form the vertex 15. The connecting web 16 extends substantially continuously between the two sides of the counter, although its exact design is of secondary importance only, so long as it tends resiliently to return the sides of the counter to their predetermined initial position.

Fig. 2 suggests in an exaggerated manner the function of the connecting web 16 in contracting and restoring the counter to such initial position. The dotted lines indicate that the sides of the counter may be spread apart in conforming them to a last or for the reception of the wearer's heel. The resilient web 16, however, tends at all times to bring the sides of the counter into the position indicated in full lines.

In practicing the method of my invention, the insole 24 is first temporarily secured to the bottom of the last 30, which, it will be noted, is shortened and rounded at its rear end upon a fairly long radius. The upper is slipped over the last in the usual manner with the counter inserted between the lining 20 and the outer leather part 22. In this operation, the counter is fitted exactly to the rear end of the last with the lining 20 between it and the surface of the last, and the bottom web 16 of the counter extending across beneath the rear end of the insole 24. The lasting operation is then carried out and the outer leather portion of the upper is conformed to the exterior surface of the last and of the counter as the latter is positioned and located by the last. While the resilient material of the counter is placed more or less under compression during this operation, it is supported over its entire area by the last in such complete and well-fitting manner that it is substantially undistorted and imparts its lines accurately to the shoe. The shoe may be completed by attaching the outsole 26 and the heel 28 in accordance with the usual processes of shoemaking and eventually the last 30 is withdrawn. It will be apparent, by an inspection of Fig. 3, that this is greatly facilitated by the smooth curvature and shallow rounded shape of the rear end of the last, which is free immediately to leave the interior surface of the line counter without any tendency to tear or displace the lining.

In the finished shoe, the molded resilient counter is incorporated in the structure of the upper which has been perfectly fitted to it during the lasting operation. On account of its resilient character, the counter tends always to maintain its correct predetermined initial position and to hold the counter portion of the shoe always in such position. Furthermore, it acts powerfully to restore that portion of the upper to its correct initial shape if temporarily distorted by wear or otherwise. The spread or opening of the upper edge of the counter should correspond to the thickness of the heel of the wearer, thus holding the counter portion of the shoe yieldingly in position to produce a perfect fit and acting effectively to prevent gapping of the edge of the shoe in all positions of the foot. Under all these conditions, the connecting web 16 of the counter is particularly effective in holding the side portions thereof in the desired position.

While it is new to provide a counter of the characteristics above discussed and to use it in practicing the novel method of shoemaking disclosed, it is believed that a boot or shoe has never heretofore been constructed in which is incorporated a molded counter of resilient material acting yieldingly to maintain the sides of the counter portion of the shoe in a predetermined initial position and to restore them to such position if distorted. The counter and the boot or shoe including the same are not claimed herein but constitute the subject matter of U. S. Letters Patent No. 1,747,331 granted February 18, 1930, on my application Serial No. 361,052, filed May 7, 1929, of which the present application is a division.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent of the United States is:

1. The method of making boots and shoes, which is characterized by the steps of building out the heel end of a round-ended last by placing thereon a counter having a thick peripheral portion with a smoothly curved inner face fitting the heel-seat of the last and an exterior surface of a substantially different shape from the last, and then lasting an upper upon the composite surface presented by the last and counter.

2. The method of making boots and shoes, which is characterized by the steps of supplementing the rear end of a round-ended last by a molded counter having an interior surface rounded to fit the last, an exterior surface of substantially steeper curvature limited by a peripheral vertex about its heel-seat and a zone of maximum thickness lying

within said vertex, lasting an upper over the composite surface presented by the last and counter, and then removing the last without disturbing the counter.

3. The method of making boots and shoes, which is characterized by the steps of placing an insole upon a round-ended last, locating a lined upper on the last with a molded counter therein which builds out the heel-end of the last and has a resilient web extending between its sides which is inserted between the last and insole, the counter being supported at every point by the last and presenting an exterior surface of substantially different shape from the last, lasting the upper over the composite surface presented by the last and counter, and removing the last leaving the counter portion of the shoe yieldingly maintained in its lasted position by the resilient web of the counter.

FRED W. STUART.