Oct. 21, 1947. W. E. CARR 2,429,306

PLATFORM COVER CONFORMING MACHINE

Filed Aug. 3, 1945

Fig. 1

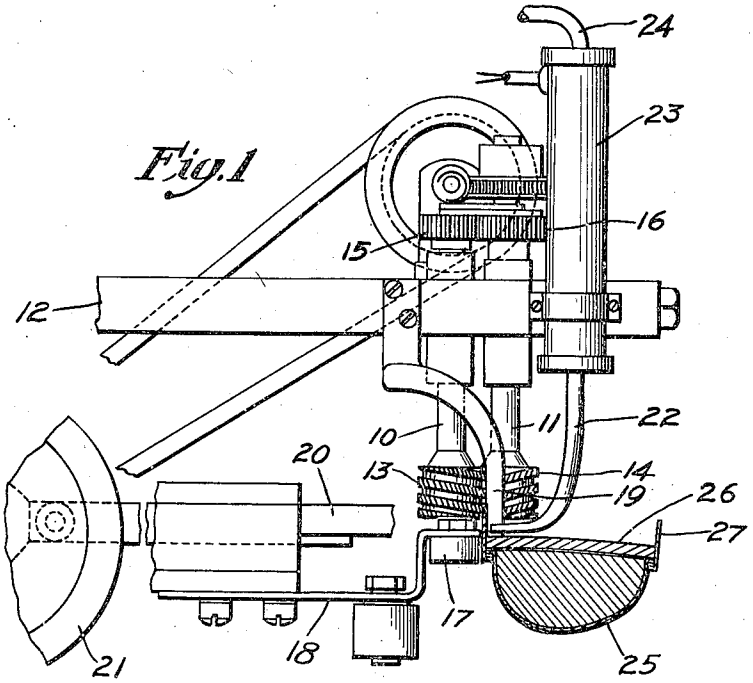


Fig. 2

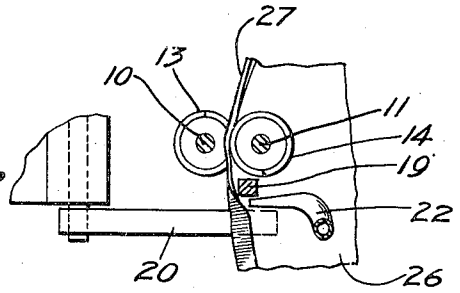
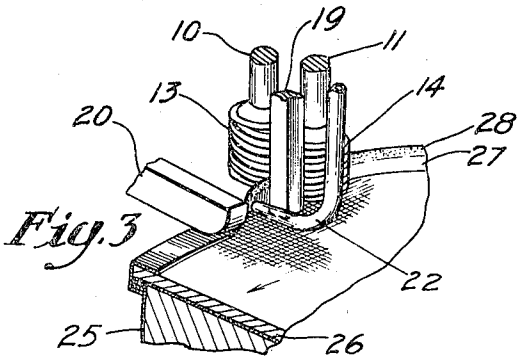


Fig. 3



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PLATFORM COVER CONFORMING MACHINE

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2 Claims. (Cl. 12—1)

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This invention relates to shoemaking and consists in a new and improved process of binding the edges of platform soles and in a novel machine or attachment useful in carrying out the said process.

In the manufacture of shoes of the "California" type it is the practice to stitch a binding strip, usually of textile fabric, to the upper above the margin of a platform sole, then to wrap the strip about the edge of the sole and cement it to the bottom face where its inturned margin is later concealed by an outsole. The present invention deals with a binding strip which comes to the manufacturer carrying upon its inner face a longitudinal band of heat-activatable cement, that is to say, a cement which is normally not tacky at ordinary temperatures but which may be quickly rendered tacky by being subjected to a blast of hot air.

The process of my invention consists in first drawing the binding strip into a position at right angles to the sole bottom, then advancing the sole and binding strip in that condition, simultaneously directing a blast of hot air to the band of cement, and then immediately folding the margin of the binding strip and pressing it down upon the sole bottom.

In the first step of the process the binding strip is drawn smoothly and tightly across the wide marginal edge of the sole and this is done while the cement band is in a non-tacky condition so that the strip may be handled by cooperating rolls or other gripping elements. Preferably and as herein shown cooperating rolls are used for drawing the binding strip into the desired upstanding position and these same elements are also used to feed the sole and binding strip through the mechanism.

Any convenient apparatus may be used to deliver a blast of hot air against the inner face of the binding strip and the cement thereon as the binding strip is passed beyond the feed rolls and just before it reaches the wiper. As herein shown, an electric heater is mounted in a convenient location adjacent to the feed rolls. Means are provided for directing air through the heater and the heated air is delivered by a tubular nozzle in such fashion that the cement is softened and rendered tacky only an instant before it is applied to the face of the platform sole. It will be seen, therefore, that by the process of my invention the adhesive condition of the work is restricted to a small area where the strip is handled positively and thus all dangers avoided of daubing the work or the machine or the operator with cement. These cleanly conditions are greatly to be desired in the shoemaking industry, not only because they avoid unnecessary expense but because they insure the performance of an accurate and reliable cementing operation.

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These and other features of the invention will be best understood and appreciated from the following description of a preferred mechanism by which the process may be carried out, selected for purposes of illustration and shown in the accompanying drawings, in which—

Fig. 1 is a view in elevation showing a platform shoe in cross section,

Fig. 2 is a fragmentary plan view, and

Fig. 3 is a fragmentary view in perspective.

The apparatus herein illustrated is shown as an attachment for the lasting machine of Kamborian Patent No. 2,254,224, September 2, 1941, that being a machine already providing a reciprocatory wiper, feed rolls, and the gauges required for carrying out the process of my invention. Reference to that patent may be had for further details of these elements, it being understood that the invention is not limited to the organization of the Kamborian machine but requires only that the elements mentioned be organized in the proper cooperating relation. In the drawings most of the machine frame is omitted since that is unnecessary for an understanding of the invention.

A pair of vertical shafts 10 and 11 are journaled in a support 12 to rotate in opposite directions. At their lower ends they are provided respectively with rolls 13 and 14 provided with spiral knurled ribs of opposite pitch, the ribs of the two rolls normally contacting with each other and acting to feed forwardly and draw into upstanding position the binding strip as the latter is advanced between them. The shafts 10 and 11 are provided with meshing pinions 15 and 16 at their upper ends and the shaft 11 is shown as having geared connections by which it may be driven and in turn drive the shaft 10.

A roller edge gauge 17 is mounted approximately beneath the roll 13, being supported on an adjustable bracket 18. A height gauge 19 extends downwardly from the support 12 and is arranged to engage and determine the level of the upper surface of the platform sole as it passes beyond the feed rolls 13 and 14 as shown in Fig. 2. A wiper 20 is mounted to reciprocate in a horizontal path and actuated by a cam 21. The wiper is located a short distance beyond the height gauge 19 and its end is rounded so that it may engage the upstanding margin of the

binding strip, wipe it inwardly over the sole and press it down against the upper face thereof.

A hot air tube **22** is brought down and curved inwardly to provide a nozzle located between the height gauge **19** and the path of the wiper **20**, as shown in Figs. 2 and 3. The tube **22** projects downwardly from an elongated electric heater **23** herein shown as attached to the support **12**. Compressed air is supplied to the upper end of the heater by a supply pipe **24** which is led from a compressor or other source of compressed air. Air supplied by the pipe **24** is led downwardly through the electric heater **23**, heated and discharged through the tube **22** directly against the inner face of the binding strip.

Portions of a platform shoe are shown herein in operative relation to the mechanism above described. In this shoe the lasted upper **25** and binding strip **27** are stitched to the upper marginal face of a platform sole **26** or to a sock lining which is attached to the sole. The binding strip **27** comes to the manufacturer with a band **28** of cement already applied to its inner face. As already explained, this cement is normally non-tacky so that at ordinary temperatures the binding strip **27** may be handled as conveniently as uncoated tape. The cement is, however, heat activatable and has the characteristic of being very rapidly rendered tacky and adhesive when subjected to a blast of hot air at a temperature of 400° F. or thereabouts.

In carrying out the process of my invention the binding strip at any convenient point along the periphery of the sole is introduced between the gripping rolls **13** and **14**, the transverse position of the work being gauged by the roller gauge **17** and its vertical position by the height gauge **19** as well shown in Fig. 1. When the machine is set in operation the binding strip **27** is drawn smoothly and tightly across the outer marginal edge of the platform sole **26** and drawn upwardly into a position at right angles to the sole bottom. As the gripping rollers rotate they engage and advance the binding strip between them together with the platform sole **26**. As the upstanding margin of the binding strip advances beyond the edge of the height gauge **19**, it is subjected to a blast of hot air from the tube **22** and to radiation from the tube which is itself substantially heated by the passage of the hot air. Cement in a limited area of the band **28** is thus rendered

tacky, and immediately this tacky area is advanced into the path of the wiper **20**. In the reciprocation of the wiper, the upstanding cement-carrying margin of the binding strip **27**, now in tacky condition, is wiped over the bottom face of the platform sole **26**, pressed down firmly upon it, and thus adhesively united. The process is continuously carried on about the entire periphery of the platform sole and the binding operation thus completed.

Having thus disclosed my invention and described in detail a preferred manner of carrying it out, I claim as new and desire to secure by Letters Patent:

1. Mechanism for wrapping a cement-carrying binding strip about a platform sole, comprising a height gauge and edge gauge for the sole, cooperating rolls for drawing a binding strip up at right angles to the face of a platform sole to which it is attached and for engaging the strip in a non-tacky area and feeding the strip and thereby the attached sole, a tube for delivering a blast of heated air transversely against the cement already present on the strip, and a reciprocatory wiper for folding over and pressing consecutive heated areas of the strip upon the sole bottom.

2. In a platform cover conforming machine, a gauge for guiding in a longitudinal path a platform shoe with a sole to which is attached one edge of a cover strip having thereon a continuous band of normally non-tacky but heat-activatable cement, feeding means for engaging said strip in a cement-carrying and non-tacky area and advancing it together with its attached sole, a wiper spaced beyond the feeding means, and a transversely directed nozzle for delivering a blast of heated air progressively against limited areas of the cement band between the feeding means and said wiper.

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