United States Patent [19]

Von Schoppe

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[45] **Jan. 21, 1975**

[54] **ADAPTER FOR USE IN SHOE MAKING**

[75] Inventor: **Bertram A. Von Schoppe,** Marlboro, Mass.

[73] Assignee: **Compo Industries, Inc.,** Waltham, Mass.

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[52] **U.S. Cl.** ..... **12/17 R**

[51] **Int. Cl.** **A43d 25/00**

[58] **Field of Search** ..... 12/1 R, 17 R, 86.5, 86.7, 12/145

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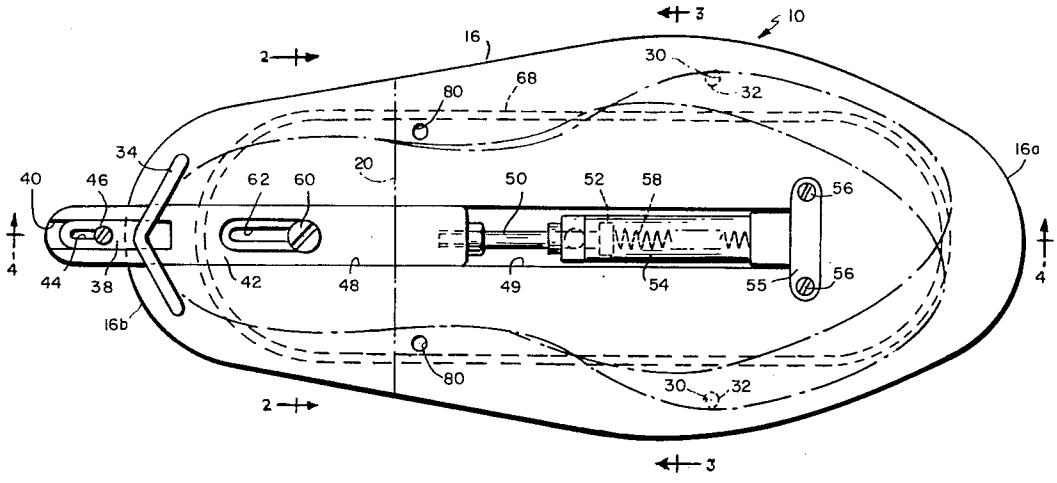
Primary Examiner—Patrick D. Lawson

Attorney, Agent, or Firm—Robert T. Gammons

[57] **ABSTRACT**

An adapter for traversing the marginal edge of a unit sole relative to an applicator brush for applying a primer to the marginal edge. The adapter comprises a platform of such length and breadth as to receive a right or left unit sole, a part removably mounted on the platform intermediate its ends having an edge face perpendicular to the platform with which the breast of the unit sole is engageable, a clamp mounted on the platform movable relative to the part into engagement with the back side of the heel to clamp the heel between it and the part, a spring yieldably holding the clamp spaced from the part, and a cylinder and piston assembly mounted on the platform for effecting clamping movement of the clamp. The adapter is mounted on a support below the brush and is provided with a flange at its lower side for engagement with a pair of feed rolls on the support by means of which it is rotated a complete turn relative to the brush and the latter is mounted above the support for swinging movement in horizontal and vertical planes and is provided with a guide roll engageable with the edge face of the unit sole to cause the brush to follow the marginal edge of the unit sole while the adapter is being rotated.

29 Claims, 14 Drawing Figures



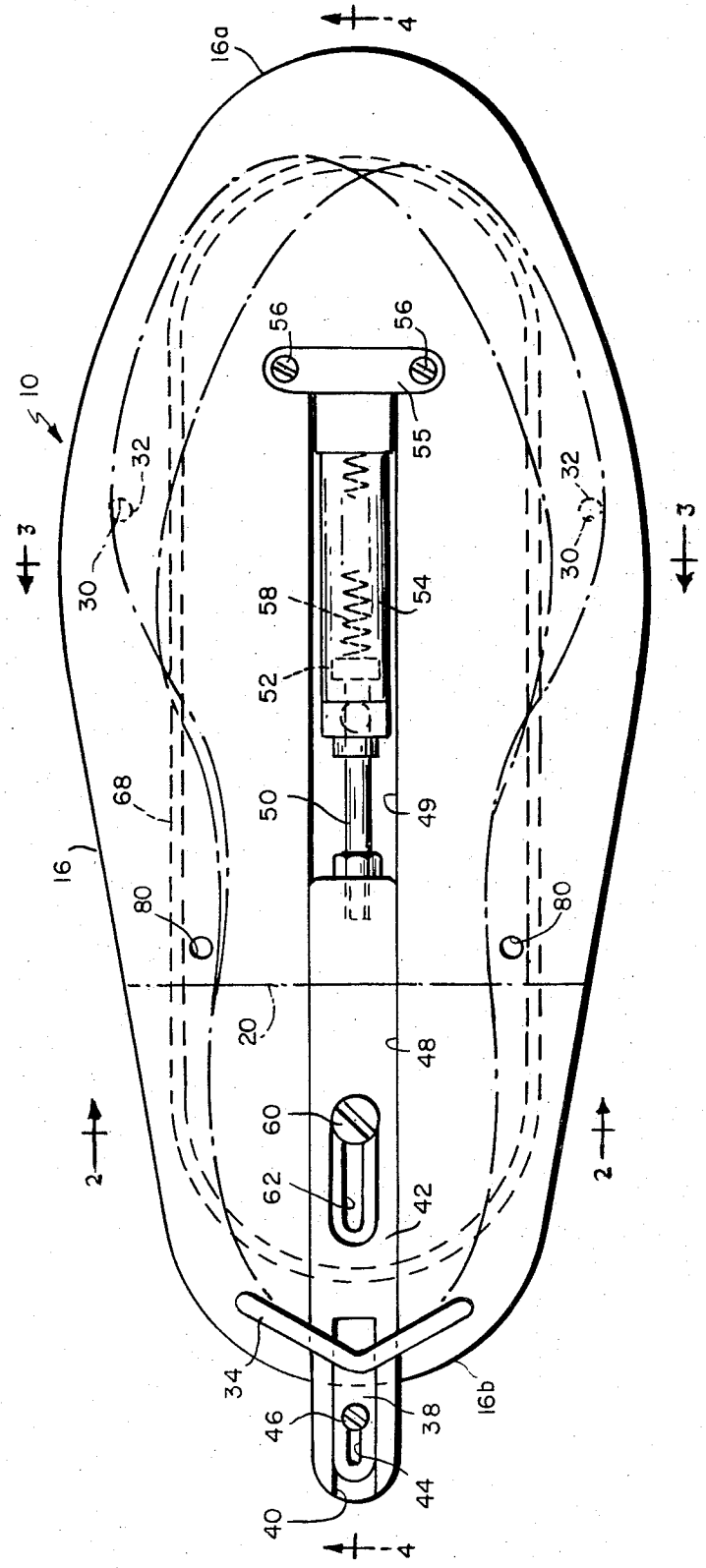

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FIG. 1

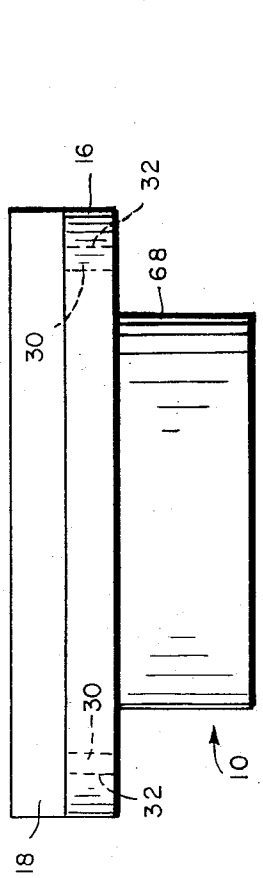

FIG. 3

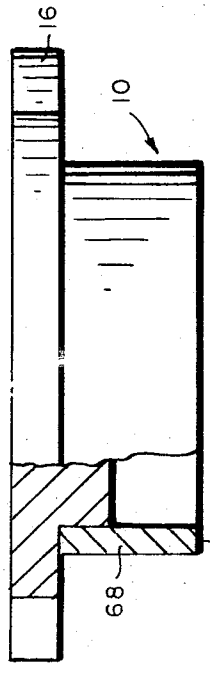

FIG. 2

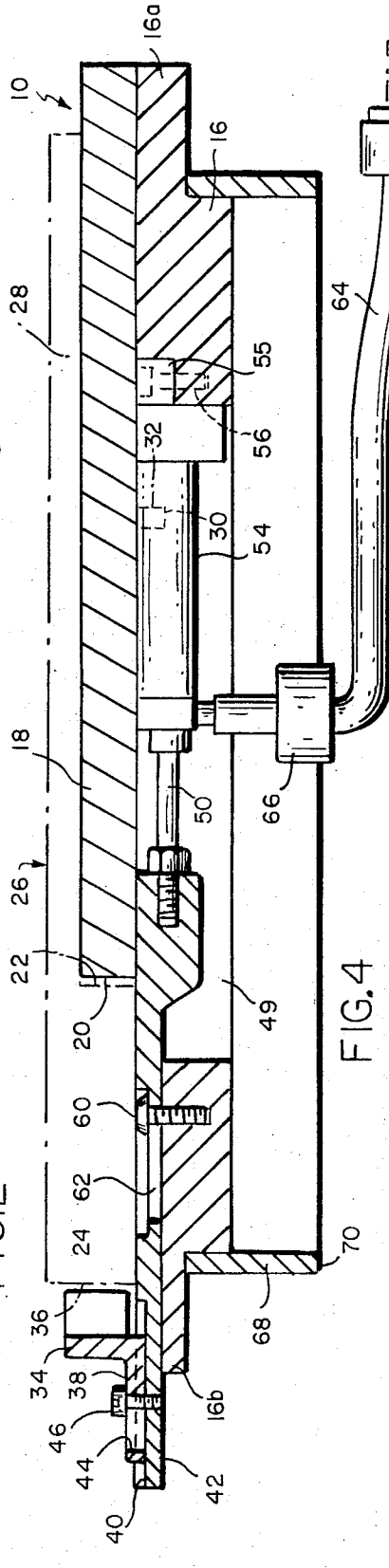

FIG. 4

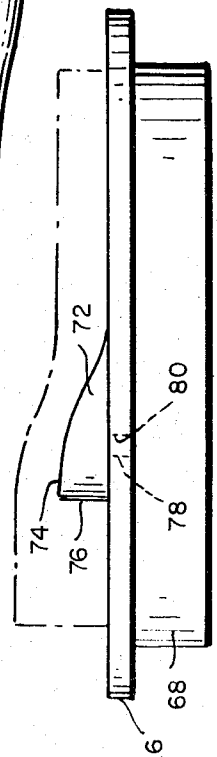

FIG. 6

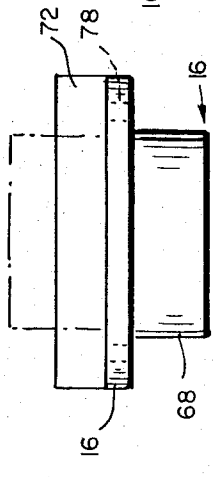

FIG. 5

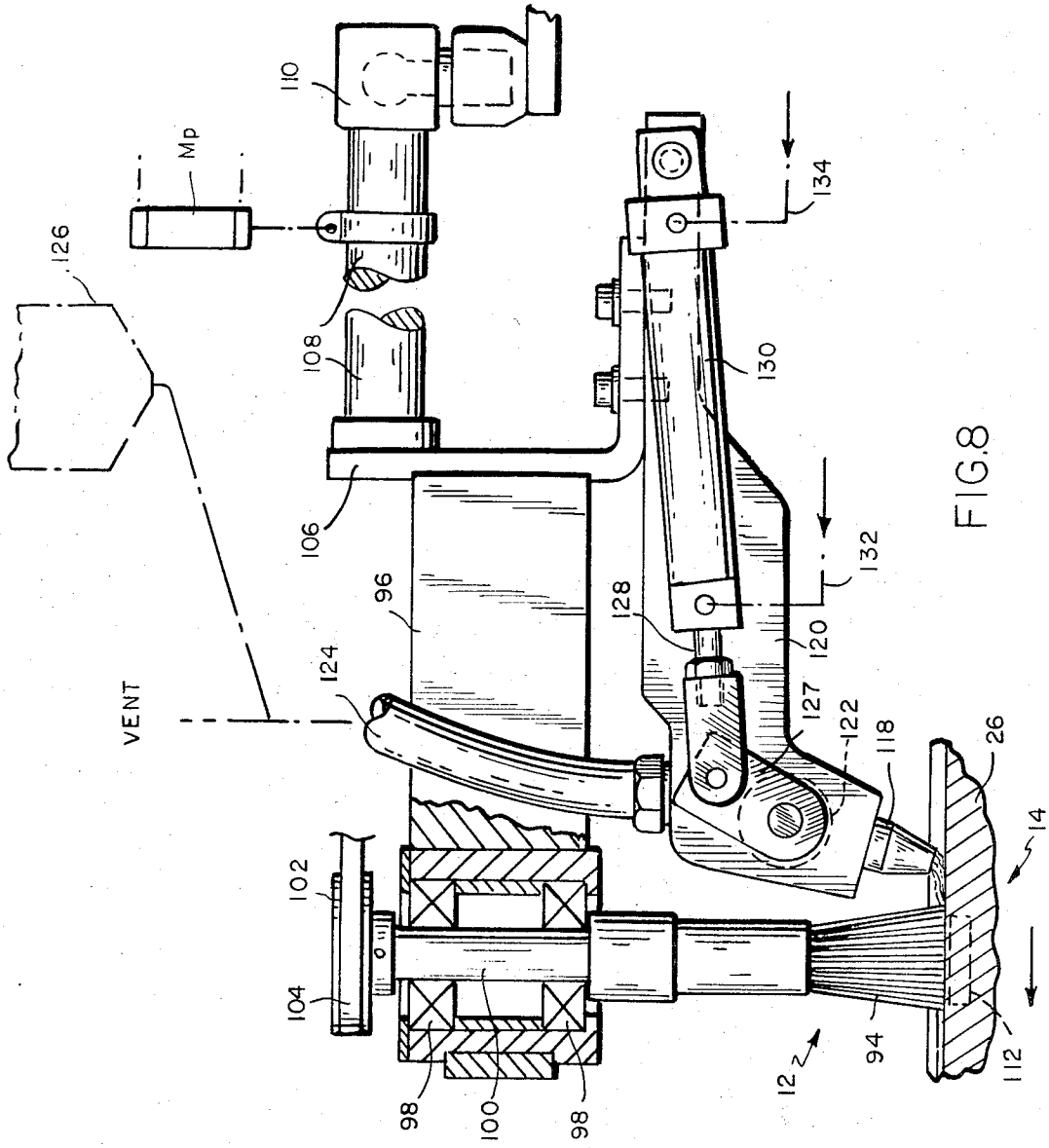
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FIG.8

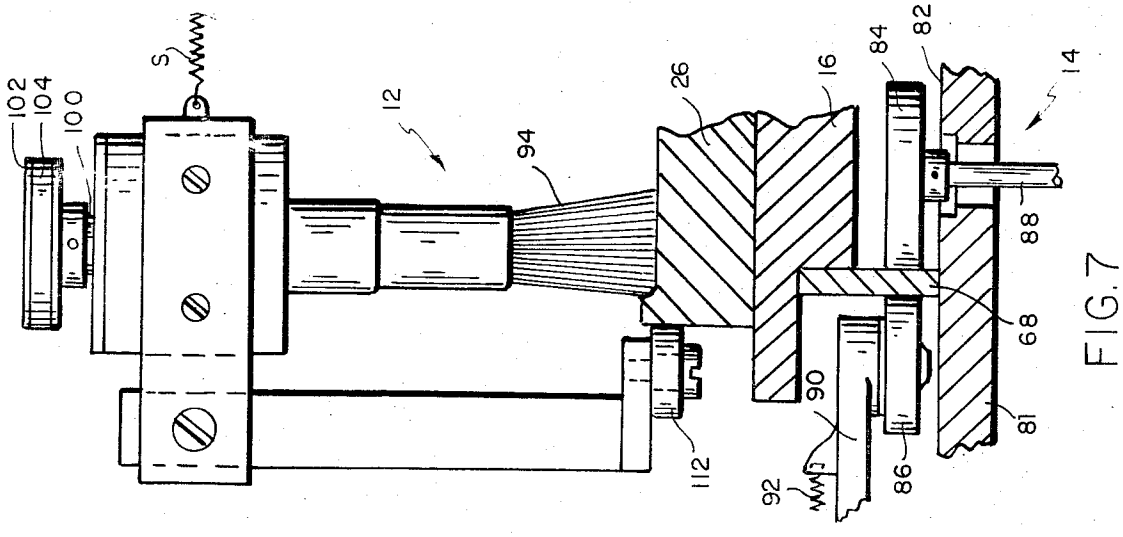
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FIG.7

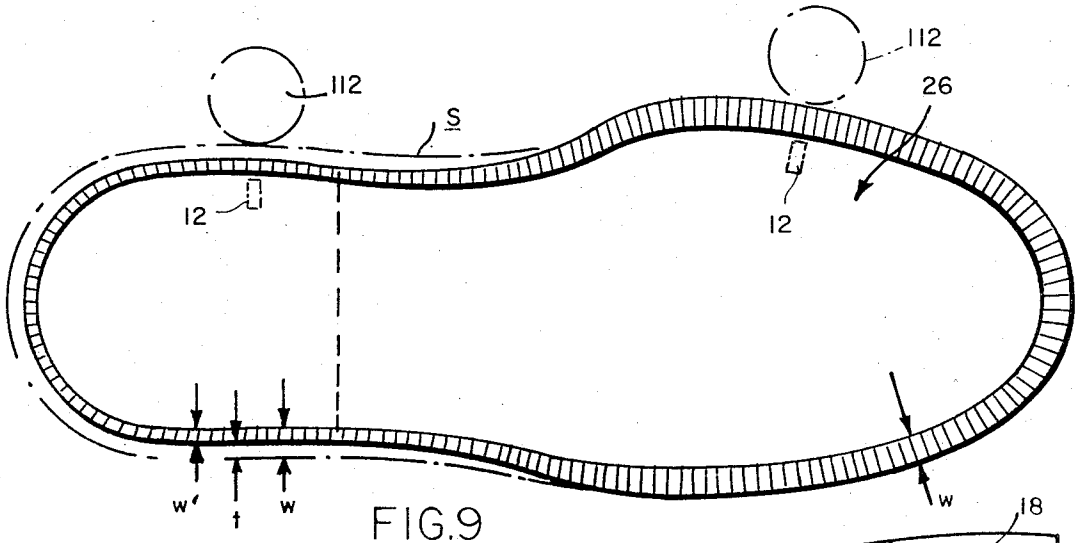

FIG.9

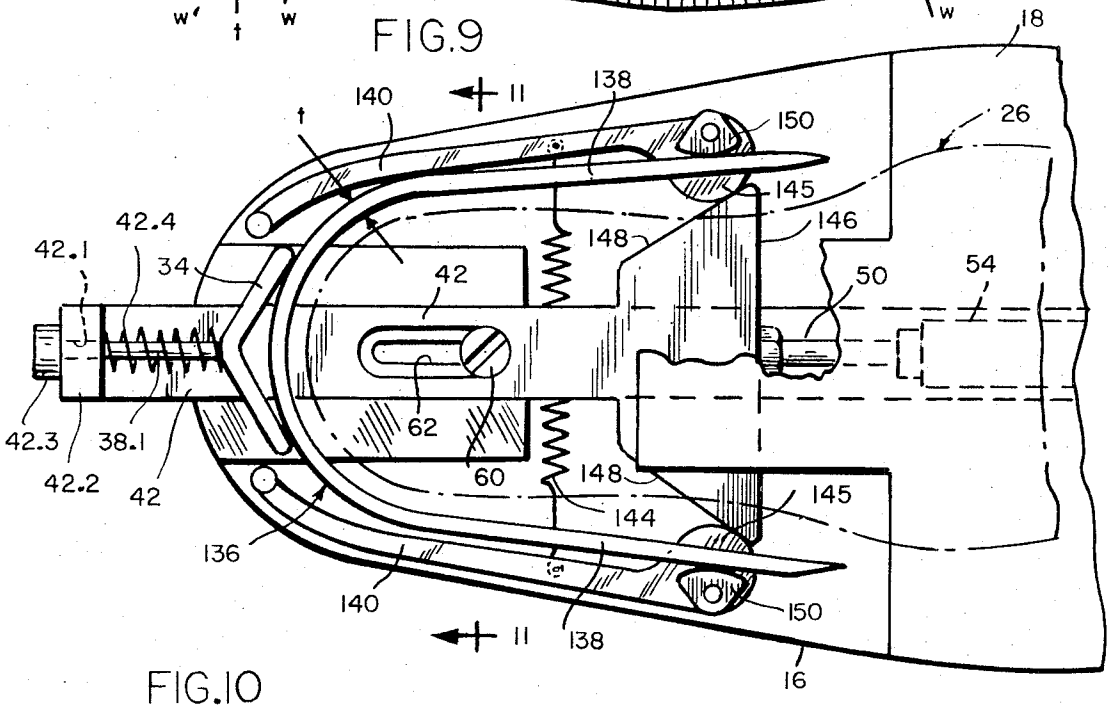

FIG.10

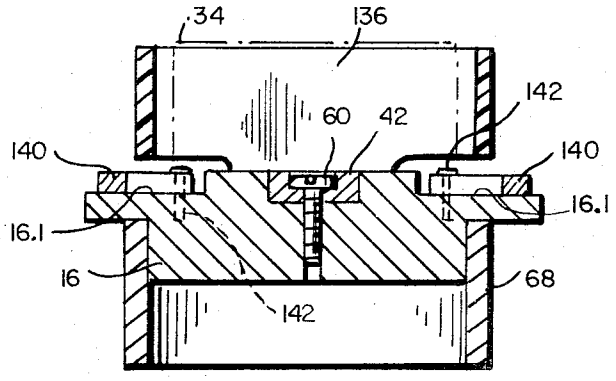

FIG.11

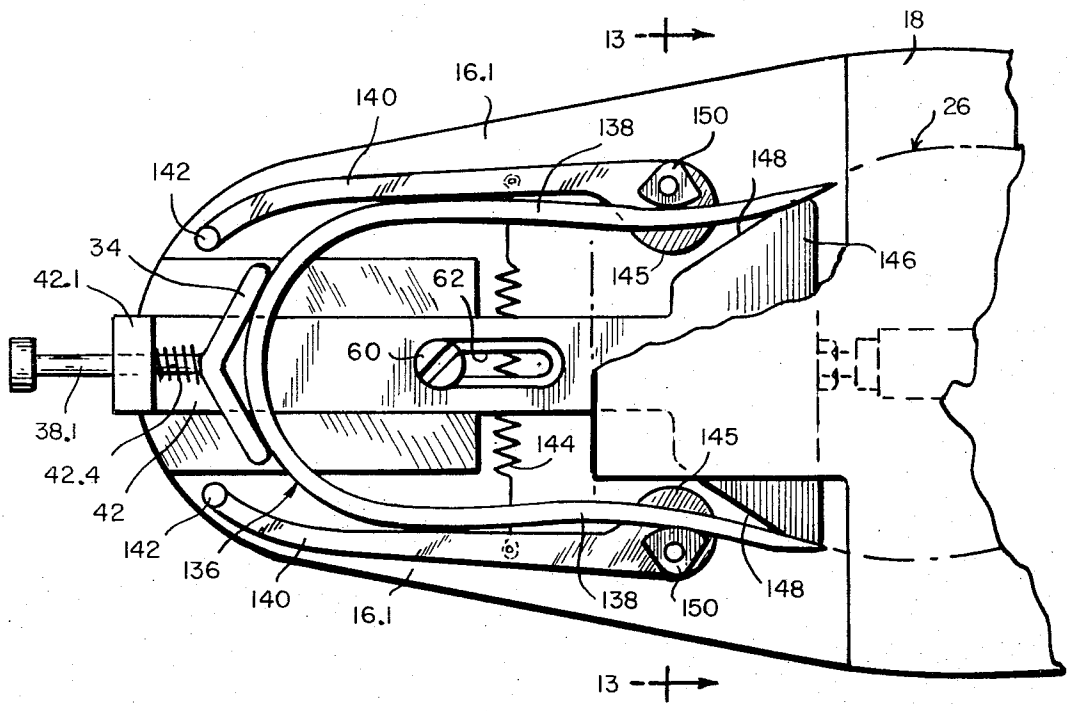

FIG.12

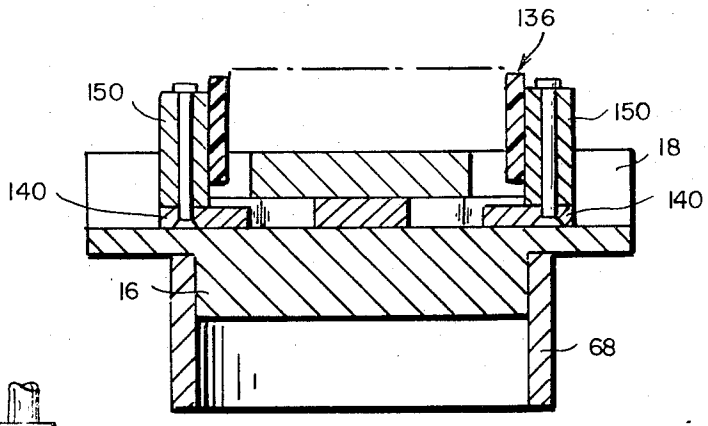

FIG.13

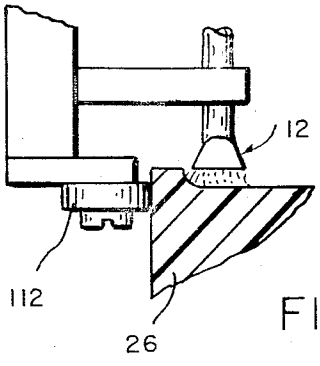

FIG.14

ADAPTER FOR USE IN SHOE MAKING

BACKGROUND OF THE INVENTION

In my pending application Ser. No. 315,630, filed Dec. 15, 1972, there is shown an adapter for rotating unit soles to present their marginal edges to a roughing tool or adhesive applicator. The adapter shown in the aforesaid application was designed especially to enable using existing machines for turning the unit soles; however, as constructed it is only useful for a range of at most three consecutive sizes and so for a full range of sizes of men's, women's and children's shoes a considerable number of adapters had to be kept in stock. The adapter herein illustrated is designed so that only two are required for the full range of shoe manufacture, one for adult shoes, including both men's and women's, and both low heel and high heel soles and another for children's shoes.

SUMMARY

An adapter for traversing the marginal edge of a unit sole relative to an instrumentality for performing an operation on the top surface marginally thereof comprising a platform of such size as to receive a unit sole right or left, a part mounted on the platform for engagement with the breast of the heel of a unit sole placed on the platform, a clamp mounted on the platform for movement relative to the part into engagement with the heel of a unit sole to clamp it against the part, means for holding the clamp spaced from the part, and means for effecting movement of the clamp into clamping engagement. The part in the case of a thin flat unit sole, that is, a low heel sole comprises a flat block corresponding substantially in thickness to the height of the heel, removably mounted on the platform at the forward end upon which the forepart of the sole is supported. The rear edge of the part is substantially perpendicular to the platform and constitutes the support for the breast of the heel. For accommodation of a unit sole having a high heel and thick platform the part is wedge-shaped and has a sloping upper surface for engagement with the shank of the unit sole and a vertical surface for supporting the breast of the heel. The clamp is preferably a pivotable V-shaped piece mounted on a slide bar recessed into the platform. A cylinder and piston rod assembly is mounted in the recess and connected to the clamp for effecting clamping movement thereof. A spring normally holds the clamp spaced from the part. The adapter is mounted on a support below the instrumentality and is turned relative to the instrumentality by a flange at its lower side and a pair of feed rolls on the support which, by engagement with the flange, rotate the adapter relative to the instrumentality. The instrumentality is supported for movement in horizontal and vertical planes and a guide associated with the instrumentality is operable by engagement with the edge face of the unit sole on the adapter as the latter is turned to cause the instrumentality to follow the contour of the marginal edge. The instrumentality, for the purposes of this invention, is a brush which is rotated about an axis perpendicular to the support as the unit sole is moved relative thereto. A nozzle is supported in association with the brush to apply a liquid primer to the marginal edge of the unit sole rearwardly of the brush with respect to the direction of movement of the unit sole.

For applying adhesive to a unit sole having an extension which is narrower at the heel than at the forepart a compensator is employed at the heel end comprising a U-shaped band supported for movement about the heel end, simultaneously with clamping of the heel end, which corresponds substantially in thickness to the difference between the width of the extension at the forepart and that at the heel part for guiding the nozzle along the inner side of the extension.

The invention will now be described in greater detail with reference to the accompanying drawings wherein:

FIG. **1** is a plan view of the adapter showing the position of right and left unit soles thereon;

FIG. **2** is an elevation partly in section taken on the line **2—2** of FIG. **1**;

FIG. **3** is an elevation taken on the line **3—3** of FIG. **1** showing a heel support for low heel unit soles;

FIG. **4** is a longitudinal section of FIG. **1** showing the heel support mounted thereon and a unit sole mounted on the support;

FIG. **5** is an end elevation similar to FIG. **3** but showing a heel support for a high heel platform sole unit sole;

FIG. **6** is a side elevation of the heel support for a high heel platform sole as shown in FIG. **5** with the sole mounted thereon;

FIG. **7** is an elevation of a portion of the apparatus for traversing the adapter, showing an applicator in engagement with the marginal edge of the unit sole;

FIG. **8** is a side elevation of the mount for the applicator;

FIG. **9** is a plan view of a unit sole showing the change in width of the sole extension at the heel end, the compensator band wrapped about the heel end and the relation of the guide roll to the edge of the unit sole and the compensator;

FIG. **10** is a plan view of the rear part of the adapter showing the compensator in the open position;

FIG. **11** is a section taken on the line **11—11** of FIG. **10**;

FIG. **12** is a plan view of the rear part of the adapter showing the compensator in the closed position;

FIG. **13** is a section taken on the line **13—13** of FIG. **12**; and

FIG. **14** is a fragmentary view partly in elevation and partly in section showing the position of an applicator in the corner at the junction of the extension and the portion of the sole inwardly thereof.

In the manufacture of shoes with rubber or rubber-like outsoles it has become the practice for the shoe manufacturer to buy preformed unit soles from a manufacture who has rubber molding equipment designed especially for this purpose. The unit sole as obtained by the shoe manufacturer is applied to the bottom of a lasted shoe upper by placing the upper and the unit sole in a press and applying pressure. To insure adhesion, the lasting margin of the upper was coated with adhesive and/or the marginal edge of the outsole was coated with adhesive which the manufacturer had on hand for this purpose. The results were not always satisfactory due partly to carelessness in applying the adhesive and/or to the use of inferior adhesive or an adhesive not compatible with the material of the outsole. To avoid this, the unit sole manufacturer, according to this invention, prepares the unit sole with a coating of adhesive and/or a primer, thus controlling the application and the quality so that when the precoated unit sole is

supplied to the shoe manufacturer and applied to the upper, it will remain firmly attached to the bottom throughout the normal life of the shoe.

Unit soles vary in size, thickness and shape and the apparatus of this invention is designed to enable precoating the marginal edge of unit soles of all sizes, thicknesses and shapes by the simple expedient of providing one adapter for clampingly receiving all adult unit soles and another for receiving all children's unit soles. As herein illustrated, the apparatus whether for adult's or children unit soles comprises in general and in combination an adapter **10** for clampingly receiving a unit sole, an applicator **12** for applying adhesive and/or a primer to the marginal edge of the unit sole and means **14** for traversing the adapter peripherally to present the entire marginal edge of the unit sole to the applicator.

The adapter **10**, as shown in FIGS. **1, 2** and **3**, comprises a flat rigid platform **16** more or less symmetrical, generally shaped like the outsole of the shoe, long enough and wide enough to receive the largest adult shoe to be processed and wide enough to receive the unit sole whether it be a left or right. The platform **16** has on it clamping means comprising a block **18** (FIG. **4**) which extends from the forward end **16***a* of the platform toward the rear end **16***b* about two-thirds the distance from the end **16***a* to the end **16***b* and has at its rear end a substantially vertically disposed clamp surface **20** which extends transversely of the platform against which the breast **22** of the heel **24** of the unit sole **26** may be placed, with the forepart **28** resting on the block. The block **18** corresponds substantially to the height of the heel and is removably attached to the platform by pins **30—30** at its underside which extend into openings **32—32** in the platform so that it may be removed and replaced by blocks of different thickness and/or lengths for unit soles which have heels of different heights and/or different widths. The block **18** has a peripheral edge which corresponds substantially to the peripheral edge of the platform **16** on which it rests.

A clamp member **34** (FIGS. **1** and **4**) is mounted on the platform at the rear end **16***b* rearwardly of the block **18** for movement thereon toward the block **18** into engagement with the back line **36** of the heel to force it into clamping engagement with the clamp surface **20** of the block **18** and thus to clamp the unit sole to the platform. The clamp **34** preferably comprises a V-shaped jaw which may be pivotally mounted in a horizontal plane (not shown) and fastened to a slide **38** mounted in a groove **40** on a plate **42** (FIG. **1**). The slide **38** contains a slot **44** and the plate **42** a threaded opening below the slot **44** for receiving a binding screw **46** by means of which the jaw may be adjusted longitudinally of the plate **42.** The plate **42** in turn is slidably mounted in a longitudinally extending slot **48** in the top side of the platform for sliding movement longitudinally of the platform and is connected to one end of a piston rod **50.** The opposite end of the piston rod is connected to a piston **52** in a cylinder **54,** the latter being secured within an opening **49** in the platform at the inner end of the slot **48** by a boss **55** at the end of the cylinder bolted to the platform by bolts **56—56.** A spring **58** within the cylinder normally holds the piston rod extended which, in turn, holds the jaw **34** spaced from the clamp surface **20** of the block **18.** Extension of the jaw **34** is limited by a screw **60** extending through a slot **62** in the plate **42** and screwed into the bottom of the slot **48.** A flexible hose **64** extending upwardly through the opening **49** in the platform and connected by a swivel joint **66** (rotary joint) to one end of the cylinder **54** provides means for supplying pressure to the cylinder to move the jaw **34** into clamping engagement with the heel of a unit sole resting on the platform. The flexible hose **64** is preferably a permanent part of the adapter **20** and by means of a quick connect-disconnect coupling **66***a* may be connected to a source of air pressure.

At the underside of the platform there is a downwardly projecting flange **68** which is perpendicular to the surface of the platform and which is generally symmetrical and corresponds generally in shape to the platform. The lower edge **70** of the flange lies in a plane parallel to the surface of the platform so that when the platform is placed on a flat surface it can be moved about, all the while maintaining a unit sole resting on its upper surface in a horizontal plane.

The adapter shown in FIGS. **1, 2, 3** and **4** is designed for unit soles with relatively thin foreparts and relatively low heels; however, the same adapter can be used for thick foreparts and high heels by replacing the block **18** with a block **72** (FIGS. **5** and **6**) of more or less wedge-shape having an upper surface **74** corresponding in contour to the shank of the unit sole and a substantially vertical surface **76** corresponding to the breast of the heel. When using such a block, the forepart of the sole rests directly on the platform. The block **72** is detachably mounted on the platform by pins **78—78** which are engaged with openings **80—80** in the platform. For children's unit soles the adapter is merely made smaller.

The means **14** for traversing the adapter relative to the applicator **12** comprises a support **81** having a horizontal surface **82** upon which the adapter may be placed, as shown in FIG. **7.** A pair of rolls **84** and **86** are mounted above the surface **82** of the support for rotation about vertical axes perpendicular to the support in confronting relation for engagement with the opposite sides of the flange **68** resting on the support. The roll **84** is fastened to the upper end of a shaft **88** by means of which it is driven and the roll **86** is supported on an arm **90** yieldably urged toward the roll **84** by a spring **92.** The rolls **84** and **86** traverse the adapter peripherally relative to the applicator **12.**

The applicator **12** which, for the purposes of this invention, is a brush **94,** is fixed to the lower end of a shaft **100** (FIGS. **7** and **8**) supported at one end of an arm **96** in suitable bearings **98—98** for rotation about a vertical axis perpendicular to the support and rotation is effected by, for example, a pulley **102** fastened to the shaft **100** and belt **104.** The opposite end of the arm **96** is secured to a bracket member **106** and this in turn is mounted on one end of a shaft **108,** the opposite end of which is pivotally supported at **110** for swinging movement in a horizontal plane about a vertical axis and swinging movement in a vertical plane about a horizontal axis. The arm **96** supports the brush above the support **81** in a position such that the adapter with the unit sole can be placed on the support below the brush and is spring-biased so that it tends to take up a position in which the brush is approximately midway between the opposite sides of the platform by spring means S.

In order to guide the brush along the marginal edge of the unit sole as the latter is turned by the rolls **84** and **86,** a guide roll **112** is mounted on the arm **96** adjacent

to the brush for rotation about the vertical axis parallel to that of the brush in a position to engage the edge face of the unit sole below the lower end of the brush. Rolling engagement of the guide roll **112** with the edge face swings the arm **96** in a horizontal plane to guide the brush around the marginal edge of the unit sole. The arm **96** may be manually or pneumatically lifted and lowered relative to the unit sole. For pneumatic lifting and lowering a motor M*p* diagrammatically illustrated in FIG. **8** may be employed. Preferably operation of the motor M*p* is synchronized with the operation of the jaw **34** so as to lower the applicator simultaneously with the clamping and to raise the applicator simultaneously with the unclamping.

The primer is supplied to the marginal edge of the unit sole adjacent the brush through a nozzle **118** supported on the arm **96** by a bracket member **120** and connected by way of a valve **122** and a hose **124** to a container **126,** the latter being supported above the arm **96** so that the primer flows gravitationally from it to the nozzle. The valve **122** is opened and closed by an arm **127** connected to one end of a piston rod **128** extending from a cylinder **130** to the opposite ends of which air is adapted to be supplied by conductors **132** and **134.** The nozzle is supported to the rear of the brush with respect to the direction of travel of the unit sole so that the primer is deposited directly on the marginal edge of the unit sole before it travels beneath the brush.

In the use of the apparatus, a block **18** or **72** is selected according to the kind of unit sole to be processed and mounted on the platform, whereupon the unit sole is placed with the breast of its heel against the block **18** or **72** and the jaw **34** is moved into clamping engagement with the back side of the heel by supplying air through the conductor **64** to the cylinder **54.** The adapter is then placed on the support **81** and the arm **96** lifted to permit the adapter to be moved beneath the brush whereupon the arm **96** is lowered to bring the brush into engagement with the upper surface of the unit sole and to engage the guide roll **112** with the peripheral edge face of the unit sole. Rotation of the drive roll **84** will automatically turn the adapter on the support relative to the brush and the guide roll **112** will automatically cause the brush to follow the contour of the unit sole as it is turned.

Treadle operated means (not shown) is provided for connecting and disconnecting the drive to the drive roll **84** and simultaneously opening and closing the valve **122.**

Unit soles as illustrated in FIG. **9** may be molded with a peripheral extension which for the sake of appearance is made narrower around the heel end than at the forepart, the extension narrowing down along the shank. As shown in FIG. **7** the extension is slightly raised and for good shoe making it is important to have the upper fit snugly into the corner at the junction of the inner side of the extension and the surface of the sole inwardly thereof. It is important therefore that the adhesive which is to form the bond between the upper and the unit sole be applied all the way into the corner. With the apparatus as described herein the guide roll **112** controls the position of the applicator and hence as the extension narrows down at the heel end the applicator will move inwardly of the rib by the difference between the width of the extension at the forepart and that at the heel end, that is, if the initial distance between the applicator and the guide roll is set up for the width of the extension at the forepart. To remedy this there is provided on the platform a compensator mechanism for use when using the apparatus for applying adhesive to unit soles wherein there is a difference in the width of the extension at the forepart and the heel end.

Referring to FIGS. **10** and **13** the compensator mechanism comprises a U-shaped band **136** having spaced parallel legs **138—138** mounted to the inner side of the jaw **34** with its legs **138—138** extending forwardly along the opposite side toward the breast support **18** comprising the surface **20** at the block. The jaw **34** in this modification is fixed to the forward end of a spindle **38.1** mounted in an opening **42.1** in a post **42.2** at the rear end of the plate **42.** The spindle **38.1** has a head **42.3** at its rear end and a spring **42.4** mounted on the spindle between the post and the jaw yieldably holds the jaw and band in a forwardly displaced position on the plate **42.** The U-shaped band **136** is comprised of a flexible resilient material, metal or plastic, stressed so that the legs **138—138** normally stand apart but can be flexed inwardly toward each other to conform to the heel end portion of the sole. In the retracted position of the jaw (FIG. **10**) the legs stand apart so that it is easy to mount the unit sole on the platform. A pair of arms **140—140** are provided for closing the legs **138—138** about the heel end of the unit sole simultaneously with the forward movement of the jaw **34** into clamping engagement with the heel. The arms **140—140** are pivotally mounted at one end in recesses **16.1—16.1** in the platform at opposite sides of the U-shaped band on pins **142—142** fixed to the platform and spring-biased toward each other by a spring **144** connected at its opposite ends to the arms. At the opposite ends of the arms there are cams **145—145** which in the retracted position of the jaw **34** and band **136** are held spread apart by a wedge **146** mounted on the plate **42.** As the jaw **34** moves forwardly the wedge **146** moves forwardly allowing the cams **145—145** to move inwardly along the inclined edges **149—148** of the wedge. A pair of pivotally supported blocks **150—150** are mounted on the arms outwardly of the legs **138—138** and when the arms are drawn toward each other these blocks press the legs into engagement with the peripheral edge of the unit sole as shown in FIG. **12.** Retraction of the jaw draws the wedge between the cams **145—145** which spreads the arms apart thus allowing the legs to separate to release the unit sole following the cement applying operation. The U-shaped band **136** is made of such thickness as to compensate for the narrowing down of the extension at the heel, having a thickness *t* which corresponds substantially to the difference between the width *w* at the forepart and the width w^1 at the heel end. FIG. **9** shows in dot and dash lines the band wrapped around the heel end of the unit sole thus providing a guiding surface *s* around the heel end along which the guide roll **112** travels so as to maintain the applicator in the corner all the way around the unit sole. The ends of the legs **138—138** are feathered.

As related above the apparatus is primarily designed for use in applying a primer to a natural or synthetic rubber outsole and as modified to apply adhesive to the marginal edge and into the corner at the junction of the inner side of the sole extension and the upper surface inwardly thereof of any suitable outsole.

It should be understood that the present disclosure is for the purpose of illustration only and that this invention includes all modifications and equivalents falling within the scope of the appended claims.

I claim:

1. An adapter for use in traversing a unit sole marginally relative to an instrumentality for performing an operation on the top marginal surface, comprising a platform, a flange at the underside of the platform, said flange being continuous all the way around the platform, first means on the platform for engagement with the breast of the heel of a unit sole placed on the platform, and second means on the platform movable relative to said first means into clamping engagement with the back of the heel to clamp the heel between it and the first means, said flange comprising means for turning the platform to present the entire marginal edge of the unit sole to said instrumentality.

2. An adapter for use in traversing a unit sole marginally relative to an instrumentality for performing an operation on the top marginal surface thereof, comprising a platform, a part removably mounted on the platform corresponding substantially to the height of the heel on which the forepart of the unit sole is deposited, and part having an edge face perpendicular to the platform and spaced from one end of the platform with which the breast of the heel engages, a clamp mounted on the platform at said end rearwardly of said part, said clamp being movable relative to said edge face of the part to clamp the heel of the unit sole to the platform, and means for effecting movement of said clamp relative to said edge face to clamp and unclamp the unit sole to the platform, said flange comprising means for traversing the marginal edge of the unit sole clamped to the platform to present the entire marginal edge of the unit sole to said instrumentality.

3. An adapter for use in traversing a unit sole marginally relative to an instrumentality for performing an operation on the top marginal surface thereof, comprising a platform corresponding generally to the shape of a unit sole so that a unit sole placed thereon extends lengthwise thereof, means intermediate the ends of the platform rising from the surface with which the breast of the heel is engageable to position the unit sole with its heel at one end and its toe at the other end, means at the one end of the platform supported thereon for movement relative to said last-named means movable toward said last-named means into engagement with the back part of the heel of a unit sole placed on the platform with its breast engaged with said last-named means to clamp the heel between it and said last-named means and to clamp the unit sole to the platform, means for effecting clamping movement of the clamp, and a flange at the underside of the platform of a configuration to turn the platform with the unit sole clamped thereto to present the entire marginal edge to said instrumentality.

4. An adapter for use in traversing a unit sole marginally relative to an instrumentality for performing an operation on the top marginal surface thereof, comprising an elongate platform of a length and breadth to receive a unit sole, with the heel at one end and the toe at the other, a part removably mounted on the platform intermediate its ends having a face substantially perpendicular to the platform with which the breast of the heel of a unit sole placed on the platform is engageable, a V-shaped clamp mounted on the platform at the one end movable relative to said part for movement into engagement with the back part of the heel to clamp the heel between it and said face, means yieldably holding the clamp spaced from said face at a distance such as to enable placing a unit sole on the platform with the heel between it and said face, means for moving said clamp toward the face into engagement with the heel to force the breast into engagement with said face to clamp the unit sole to the platform, and a flange at the underside of the platform perpendicular thereto of a configuration to traverse the platform to present the entire marginal edge to the unit sole to said instrumentality.

5. An adapter according to claim **4**, comprising means yieldably holding the clamp spaced from said surface.

6. An adapter according to claim **4**, comprising power-operated means for effecting movement of the clamp into clamping and out of clamping engagement.

7. An adapter for use in traversing a unit sole marginally relative to an instrumentality for performing an operation on the top marginal surface thereof, comprising an elongate platform of a length to receive a unit sole with the heel at one end and the toe at the other end, a part removably mounted on the platform intermediate its ends having a face substantially perpendicular to the platform with which the breast of the heel of a unit sole placed on the platform is engageable, said platform containing rearwardly of said part and longitudinally thereof at the one end a recess, a bar mounted in the recess for movement along the recess, a cylinder containing a piston rod held extended therefrom by a spring mounted in the recess forwardly of the bar with one end fixed to the platform and with the other end connected to said bar such as to hold the bar displaced rearwardly, a clamp fixed to said bar, means for supplying air pressure to the cylinder to move the bar and hence the clamp forwardly toward the other end to effect clamping of the heel to the part and the unit sole to the platform, and a flange at the underside of the platform perpendicular thereto of a configuration to traverse the platform peripherally to present the entire marginal edge of the unit sole to said instrumentality.

8. An adapter according to claim **7**, comprising means for limiting rearward movement of the bar.

9. An adapter according to claim **7**, comprising means for adjusting the clamp longitudinally of the bar.

10. An adapter according to claim **7**, wherein the platform is wide enough to accommodate right and left unit soles.

11. An adapter for use in traversing a unit sole marginally relative to an instrumentality for performing an operation on the top marginal surface thereof, comprising an elongate platform of a length and breadth to receive a unit sole with the heel at one end and the toe at the other, a flange at the lower side of the platform perpendicular to its surface, said flange having a configuration such as to turn the platform peripherally to present the entire marginal edge of the unit sole to the instrumentality and a lower edge situated in a common plane such that when supported on a flat surface feed rolls may be applied to the flange to traverse the platform resting on said surface peripherally, and means on the platform for clamping a unit sole thereto, comprising a part mounted thereon intermediate its ends with which the breast of the heel is engageable, a clamp mounted on the platform at the one end spaced rear-

wardly from said part, means yieldably holding the clamp spaced from said part, and means for moving the clamp toward said part to clamp the heel between it and said part.

12. An adaptor for use in traversing a unit sole marginally relative to an instrumentality for performing an operation on the top marginal surface thereof, comprising an elongate platform of a length and breadth to receive a unit sole with the heel at one end and the toe at the other, a flange at the lower side of the platform perpendicular to its surface, said flange having a lower edge situated in a common plane such as to support the platform on a flat surface for sliding movement thereon, and a configuration such that feed rolls engaged with the inner and outer sides of the flange will turn the platform to present the entire marginal edge of the insole resting on its surface to said instrumentality, means on the platform for clamping a unit sole thereto comprising a part removably mounted thereon intermediate its ends engageable with the breast of a heel, means on the platform spaced from said part movable relative thereto into engagement with the heel to clamp the heel between it and said part, means yieldably holding the last means spaced from the part, and pressure-operable means for moving said last means into clamping engagement with a heel.

13. An adapter according to claim **12,** wherein said instrumentality provides for applying a primer to the marginal edge of the unit sole.

14. An adapter for use in traversing a unit sole marginally relative to an instrumentality for performing an operation on the top marginal surface of a unit sole, comprising an elongate platform of sufficient length and breadth to receive a right or left unit sole with the heel at one end and the toe at the other, a part mounted on the platform intermediate its ends having a substantially horizontal surface on which the forepart of the unit sole is adapted to be supported and a substantially vertical surface with which the breast of the heel is adapted to be engaged, a clamp on the platform spaced rearwardly from the part, said clamp being movable relative to the part into engagement with a unit sole resting on the platform with its forepart resting on the horizontal surface, and the breast of its heel engaged with the vertical surface to clamp the breast against said vertical surface and hence to clamp the unit sole to the platform, means yieldably holding the clamp spaced from said part, power-operable means connected to the clamp for effecting clamping movement thereof, and a flange on the underside of the platform having a contour corresponding in shape to that of the platform and a lower edge which lies in a plane parallel to the platform.

15. An adapter according to claim **14,** wherein the part has in inclined surface corresponding to the inclination of the shank portion of the unit sole and a substantially vertical surface for engagement with the breast of the heel.

16. Apparatus comprising a brush supported for movement in horizontal and vertical planes about, respectively, vertical and horizontal axes, a stationary support situated below the brush, said support having a flat horizontal surface, an adapter for clampingly receiving a unit sole, mounted on the flat surface of the support, means for rotating the adapter on the support below the brush a complete turn comprising a continuous flange on the adapter and a pair of feed rolls on the support with which the flange is engageable when mounted on the support, and means associated with the brush to cause it to travel along the marginal edge of the unit sole while the adapter is being rotated comprising a guide roll rotatable about a vertical axis, and means supporting the guide roll adjacent the brush in a position for engagement with the edge face of the unit sole.

17. Apparatus according to claim **16,** wherein there is means for driving one of the feed rolls and means for yieldably biasing the other feed roll toward the one feed roll.

18. Apparatus according to claim **16,** wherein an arm supports the brush for movement in horizontal and vertical planes and there is means yieldably resisting lateral displacement of the arm relative to the feed rolls.

19. Apparatus according to claim **18,** wherein a nozzle is mounted on the arm adjacent the brush with its discharge end above the lower end of the brush for delivering a liquid primer to the marginal edge of the unit sole rearwardly of the brush with respect to the direction of movement of the unit sole relative to the brush.

20. Apparatus according to claim **19,** wherein a valve is associated with the nozzle for controlling flow of liquid to the nozzle.

21. An adapter comprising a platform, means for clamping a unit sole thereto, and a band mounted on the platform for movement about the heel end of a unit sole clamped to the platform into engagement with the edge face about the heel end, said band corresponding substantially in thickness to the difference between the width of the sole extension at the forepart and the heel.

22. An adapter comprising a platform, means for clamping a unit sole thereto, a flexible band mounted on the platform for movement about the heel end of a unit sole clamped to the platform, and means operable in consonance with the clamping of the unit sole to move said band into wrapping engagement with the heel end of the unit sole.

23. An adapter comprising a platform, fixed and movable clamping members mounted on the platform between which a unit sole is adapted to be clamped with the fixed member engaged with the breast of the heel and the movable member engaged with the back of the heel, and a band movable with the movable member into wrapping engagement with the edge face of the sole at the heel end, said band extending about the heel end and up to approximately the shank and corresponding in thickness to substantially the difference between the width of the extension at the forepart and that at the heel.

24. An adapter according to claim **23,** wherein the band is supported by the movable member, a pair of arms are mounted on each side of the movable member along the sides of the band, spring means urges the arms toward the band and cam means mounted on the member between the arms support the arms out of engagement with the band in the retracted position of the movable member, said cam means being movable forwardly with the movable member to release said arms.

25. An adapter comprising a platform, fixed and movable clamping members mounted on the platform between which a unit sole is adapted to be clamped, said fixed member being situated intermediate the ends of the platform and the movable member near one end and movable toward the fixed member, a flexible U-shaped band mounted to move with the movable mem-

ber toward the fixed member, said U-shaped band having legs spread apart a greater distance than the width at the heel end of the unit sole which may be moved toward each other to wrap around the heel and means for wrapping the legs of the U-shaped member about the heel end as the movable member is moved into clamping engagement with the unit sole.

26. An adapter according to claim **25**, wherein said last means comprises a pair of pivotally mounted arm, spring means urging the arms toward the legs of the U-shaped band and cam means holding the arms apart, said cam means being movable with the movable means to permit the arms to close on the legs of the U-shaped member.

27. An adapter comprising a platform, a part of the platform with which the breast of the heel of a unit sole may be engaged, a jaw mounted on the platform for movement relative to the part to clamp the heel between it and the part, and a band supported for movement with the jaws into engagement with the heel end of the unit sole, said band corresponding in thickness to the difference in width between the extension at the forepart and heel.

28. Apparatus comprising an applicator supported for movement in horizontal and vertical planes about, respectively, vertical and horizontal axes, a stationary support situated below the applicator, said support having a flat horizontal surface, an adapter for clampingly receiving a unit sole including a band at the heel end corresponding in thickness to the difference in thickness between the width of the sole extension at the forepart and that at the heel, means for rotating the adapter on the support below the applicator a complete turn comprising a continuous flange on the adapter and a pair of feed rolls on the support with which the flange is engageable when mounted on the support, and a guide roll mounted at a fixed distance from the applicator corresponding to the width of the extension at the forepart, said guide roll being operable by engagement with the edge face of the unit sole around the forepart and by engagement with the band around the heel end to maintain the applicator in coincidence with the inner side of the extension.

29. Apparatus according to claim **28**, wherein the applicator is a nozzle for applying adhesive to the margin within the corner at the inner side of the extension.

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