April 1, 1941. S. J. FINN 2,236,531

MACHINE FOR USE IN THE MANUFACTURE OF SHOES

Filed July 6, 1939 2 Sheets-Sheet 1

Fig.1

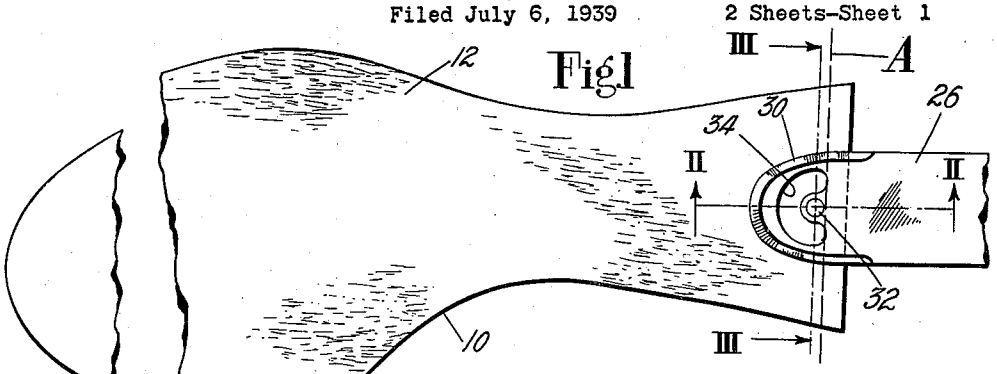


Fig.2

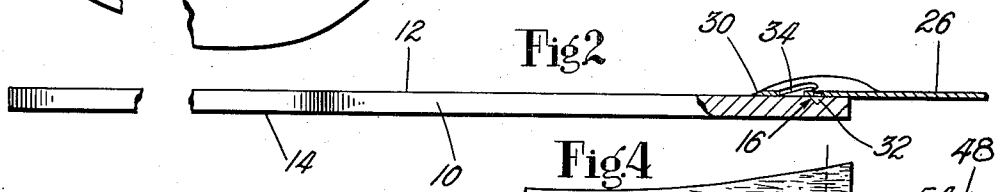


Fig.3

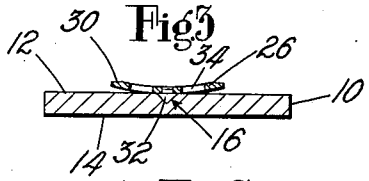


Fig.4

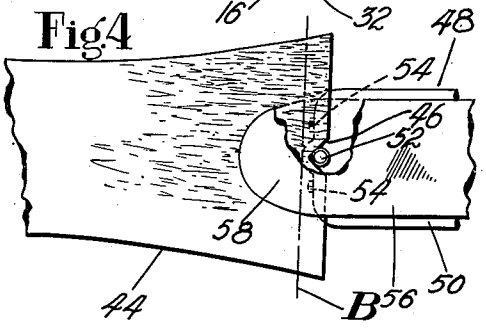


Fig.5

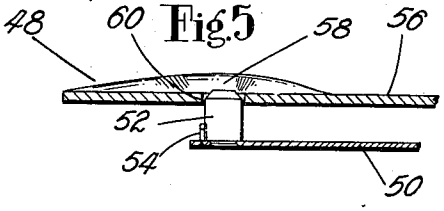


Fig.6

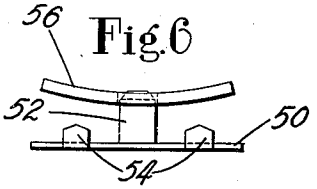
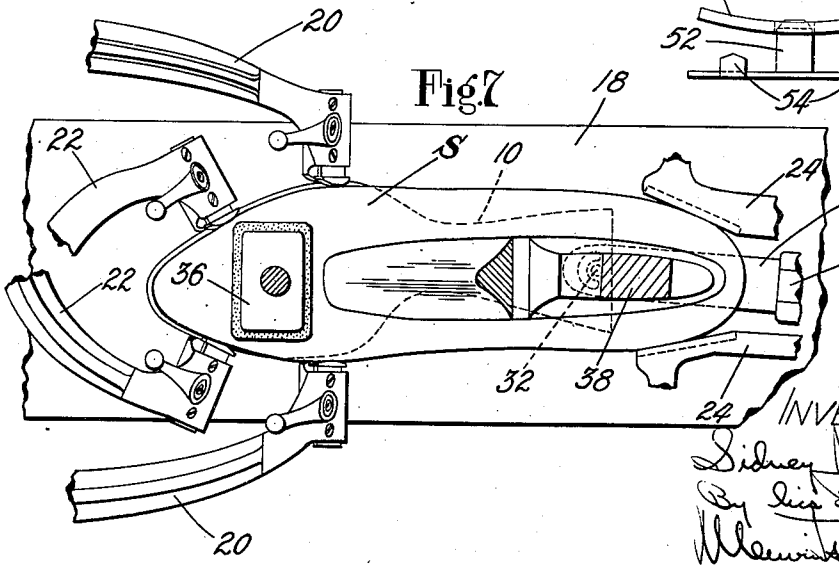


Fig.7



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April 1, 1941. S. J. FINN 2,236,531

MACHINE FOR USE IN THE MANUFACTURE OF SHOES

Filed July 6, 1939 2 Sheets-Sheet 2

Fig.8

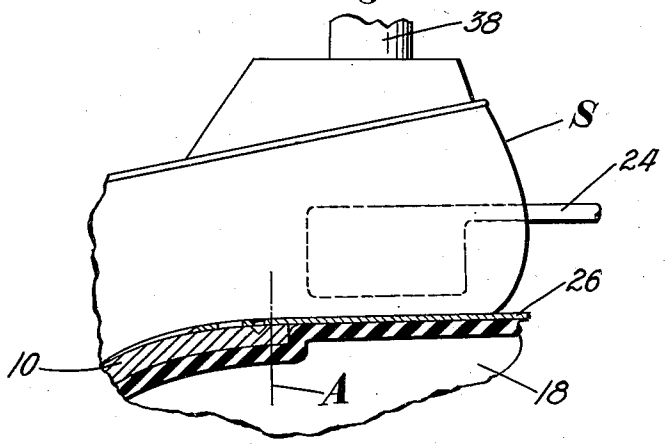
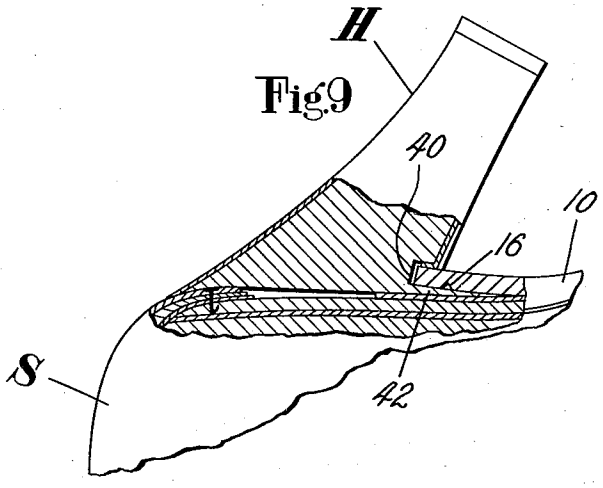


Fig.9



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Patented Apr. 1, 1941

2,236,531

UNITED STATES PATENT OFFICE

2,236,531

MACHINE FOR USE IN THE MANUFACTURE OF SHOES

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Application July 6, 1939, Serial No. 282,985

19 Claims. (Cl. 12—33)

This invention relates to shoes and to machines for use in the manufacture thereof and it is illustrated herein with reference to shoes having short outsoles arranged to interengage with the heels on the shoes.

In shoes of the type referred to the heels are of the character disclosed in Letters Patent of the United States No. 2,121,172, granted June 21, 1938, on an application filed in the name of Fred C. Lovejoy. This type of heel is provided with a transverse groove or slot located adjacent to the upper edge of the breast of the heel and into which the rear portion of the short outsole is inserted to provide a tight joint between the outsole and heel, the heel being also provided at its upper end with a forwardly projecting lip which overlies the rear portion of the outsole inwardly of its marginal portions and provides an additional reinforcement between the heel and the outsole. The outsole extends only a short distance rearwardly of the heel breast line of the shoe and normally terminates in a straight rear edge face. The outsole is preferably attached to the shoe bottom by cement and the heel is applied in a conventional manner by cement or fastenings or both, the rear end portion of the outsole being first inserted in the transverse groove in the breast of the heel with the lip of the heel extending forwardly over the rear portion of the outsole.

Considerable difficulty has been encountered heretofore in positioning short outsoles relatively to shoes preparatory to cement attaching the outsoles to the shoe bottoms because the rear portions of these outsoles are too short to permit them to be engaged and positioned on the pad of a sole attaching press by hand or by gaging means commonly employed in such presses.

An object of the present invention is to provide an improved machine for use in making shoes having short outsoles with the aid of which the difficulties pointed out above will be eliminated.

In accordance with one feature or aspect the invention provides an improved machine for use in cement attaching soles to shoes, the machine having means thereon for engaging a recess or opening formed in the rear end of an outsole and positioning it on the pad of a sole attaching press, and having further mechanism for positioning a shoe relatively to the outsole prior to the application of pressure to cement attach the outsole to the shoe bottom. As illustrated, the sole engaging means comprises a gage having a projection thereon for engaging a prick punch hole in the outsole or an opening or notch formed in the rear edge face thereof, this gage being also arranged to overlap the rear end of the outsole to prevent the central portion thereof from becoming cement attached to the shoe bottom, thereby providing an opening or pocket for receiving the lip of the heel. As illustrated, the gage may be provided with further means arranged to penetrate the outsole under pressure and prevent displacement thereof relatively to the shoe or pad until sufficient pressure has been applied to clamp the outsole against such displacement.

With the above and other objects and features in view, the invention will now be described in detail with reference to the accompanying drawings and will thereafter be pointed out in the claims.

In the drawings,

Fig. 1 is a plan view of a short outsole engaged by the positioning gage which forms a part of the present invention, the forward portion of the outsole being broken away;

Fig. 2 is a side elevation of the outsole and gage shown in Fig. 1, the gage and the rear portion of the outsole being sectioned on the line II—II of Fig. 1;

Fig. 3 is a transverse sectional view on the line III—III of Fig. 1;

Fig. 4 is a plan view similar to Fig. 1 illustrating a different type of gage operating on a short outsole, the forepart of the outsole being omitted and a top portion of the gage being broken out to show details more clearly;

Fig. 5 is a longitudinal sectional view on an enlarged scale of the gage shown in Fig. 4;

Fig. 6 is a front elevational view of the gage shown in Fig. 4 as viewed from the left in that figure;

Fig. 7 is a plan view of the short outsole and a shoe positioned and receiving pressure on the pad of a sole attaching press in which the gage of Fig. 1 is embodied;

Fig. 8 is a side elevation of the heel portions of the shoe and outsole shown in Fig. 7, the lower portion of the figure being shown in section; and

Fig. 9 is a fragmentary side elevation, partly in section, showing the shoe with a heel attached thereto.

In accordance with the present invention, a short outsole 10 is provided having an inner or flesh surface 12 and an outer or tread surface 14 (Fig. 2), and terminating in a straight edge face a short distance rearwardly of the heel breast line of a shoe, this position being indi-

cated by the broken line A in Fig. 1. The outsole is provided at the rear portion of its inner or flesh surface 12 with a recess or depression 16 (Figs. 2 and 3) which, as illustrated, is located between or inwardly of the opposite lateral edge faces of the outsole. The recess 16 comprises a prick punch hole or opening which does not extend completely through the material of the outsole but, as shown in Figs. 2 and 3, penetrates the latter somewhat less than half its thickness so that it does not show on the outer or tread surface 14 of the outsole. Moreover, the recess is preferably located intermediately or equidistant from the opposite lateral edge faces of the outsole or, in other words, substantially on the longitudinal median line of the outsole, as shown in Fig. 1. Although the recess 16 is located at the rear portion of the flesh side of the short outsole, it need not necessarily be located rearwardly of the position which corresponds to the heel breast line of a shoe, but may, if desired, be located on or forwardly of that position, as shown in Fig. 1.

In accordance with one aspect of the invention, the short outsole 10, provided with the prick punch recess as described, has the marginal portion of its inner or attaching surface 12 coated with cement, such as pyroxylin cement, and is mounted on the pad 18 (Fig. 7) of a cement sole attaching press or pad box, which may be of the type disclosed in Letters Patent of the United States No. 2,047,185 granted July 14, 1936, on an application filed in the name of Milton H. Ballard et al., preparatory to being cement attached to the bottom of a shoe S. As disclosed in the patent referred to, the sole attaching press is provided with forepart sole and shoe gages 20 and 22 for relatively positioning the foreparts of the short sole 10 and shoe S, and it is also provided with a substantially V-shaped shoe gage 24 having oppositely inclined surfaces for engaging the opposite side portions of the heel end of the shoe. In addition to the gages referred to, the sole attaching press or pad box is further provided with a sole gage 26 for the rear end of the outsole especially adapted to engage the opening or recess 16 in the outsole and arranged, in conjunction with the rear shoe gage 24, to position the rear ends of the outsole and shoe relatively to each other on the pad.

The rear sole gage 26 is mounted in a holder or carrier member 28 (Fig. 7) provided on the pad box, this member, as fully disclosed in the Ballard patent, being arranged for pivotal movement heightwise of the pad to move the rear sole gage into and out of operative position with respect to the pad and, when the rear portions of the shoe and outsole are to be positioned laterally of the pad, being further arranged for lateral shifting movement if necessary relatively to the shoe heel gage 24. Since the manner in which the forepart and heel gage mechanisms of the pad box operate is fully disclosed in the Ballard et al. patent, it will be unnecessary to go into further detail herein.

The rear sole gage 26 comprises a relatively long flat finger or tongue which may be composed of metal, such as spring steel, and is preferably about 1/16" thick and about 1" or 1 1/4" wide. At its forward end the tongue 26 is rounded, as shown in Fig. 1, and it is beveled to a thin edge around its forward margin, as indicated by the reference numeral 30. The forward beveled portion of the gage or tongue is also curved transversely, as shown in Figs. 2 and 3, to give it a concave shape which is substantially complemental to the shape of the bottom of the heel portion of the shoe. Near its forward end the gage 26 is provided with a downwardly extending prick punch point or projection 32 which may be riveted or otherwise secured to the gage or, if desired, may be formed integrally therewith, this projection being adapted to engage the hole or recess 16 in the rear portion of the outsole. As shown, the projection extends downwardly from the gage a distance less than the thickness of the outsole and is arranged to fit the recess. Preferably, and as illustrated herein, a central portion of the forward end of the gage is cut away to leave an opening 34 forwardly of the projection 32 to reduce the weight of the gage and to facilitate its use by exposing the projection 32 and the hole in the outsole.

The cement on the margin of the outsole is activated as usual by a solvent and the outsole is placed grain side down on the pad 18 of the sole attaching press, as illustrated in Fig. 7. The rear sole gage 26 is swung into operative relation with the pad and the outsole is placed in a predetermined position on the pad. The projection 32 of the gage is moved into engagement with the recess 16 in the outsole with the forward portion of the gage overlying the central or intermediate portion of the rear end of the outsole, as shown in Figs. 1 and 2. As described in the Ballard et al. patent, the sole and shoe gages 20 and 22 are operated to engage or "find" the opposite lateral edge faces of the forepart of the outsole 10 in which position they automatically become locked so that shoe gages carried thereby will be in a position to locate the forepart of the shoe properly with respect to the outsole. The shoe S with the cement on its bottom surface is next placed on the outsole and the forepart of the shoe is positioned relatively to the outsole by the locked forepart gages. The rear shoe gage 24 is then moved forwardly toward the shoe until the inclined surfaces thereon engage the opposite sides of the heel portion of the shoe after which, in a manner disclosed in the Ballard patent, the rear sole gage 26 may be shifted automatically whatever amount may be necessary properly to position the rear portion of the outsole relatively to the heel portion of the shoe.

The outsole and shoe having been relatively positioned on the pad, pressure applying abutments 36, 38 (Fig. 7), arranged respectively to engage and apply pressure to the forepart and heel portions of the shoe, are moved into engagement with the shoe and are caused to press the shoe and sole forcibly against the pad to apply sole attaching pressure, the forepart gages 20, 22 and the gages 24, 26 remaining in operative engagement with the outsole and shoe during the pressure applying operation. Figs. 7 and 8 show the shoe S and outsole 10 receiving pressure in the sole attaching press with the rear sole gage 26 and heel gage 24 located in operative position. Since the forward portion of the sole gage 26 is shaped to correspond to the curvature of the shoe bottom, the gage does not interfere with the pressure applying operation. It will be noted, moreover, that the forward portion of the sole gage 26 overlaps the rear end of the outsole at the central portion thereof for a considerable distance forwardly of the heel breast line A. This overlapping portion of the gage separates this central portion of the rear end of the outsole

from the shoe bottom so that it cannot become stuck thereto under the sole attaching pressure, for example, by cement on the inner edges of the cement covered margin of the outsole or by cement which might inadvertently be applied to the central portion of the rear end of the outsole. Accordingly, the outsole **10** will not be cement attached to the shoe bottom at the central or intermediate portion of its rear end which is covered by the sole gage **26**.

After the outsole **10** has been cement attached to the shoe in the manner described, a heel H of the type above referred to may be attached to the shoe in the usual way by cement or fastenings such as nails or screws, or by both cement and fastenings. As illustrated in Fig. 9, the heel is provided at its breast with a transverse slot or groove **40** arranged to receive the rear portion of the short outsole. Moreover, as pointed out above, the heel is provided with a forwardly projecting lip **42** which is arranged to extend into the opening or pocket provided by the gage **26** between the shoe bottom and the rear end of the outsole. Accordingly, the lip **42** will overlie the rear portion of the short outsole **10** inwardly of its marginal portions and will serve to reinforce the shoe during wear. As shown in Fig. 9, the opening or recess **16**, although located forwardly of the heel breast line of the shoe, is nevertheless concealed because it is formed on the inner surface of the outsole and does not extend completely through the material thereof.

Another rear sole gage adapted for use in practising the method is illustrated in Figs. 4 to 6, inclusive. In accordance with this aspect of the invention, a short outsole **44** is provided which extends only a short distance rearwardly of the heel breast line B of a shoe, and the rear edge face of the outsole has formed therein a recess **46** which is shown as a V-shaped notch or opening located rearwardly of the heel breast line B and between or intermediately of the opposite lateral edge faces of the outsole. Preferably, the V-shaped notch **46** is located substantially on the longitudinal median line of the outsole so that it is equidistant from the opposite edges thereof and, as shown in Fig. 4, it extends completely through the thickness of the materials of the outsole.

In operating on an outsole of this type, a gage **48** is provided comprising a lower finger or tongue **50** which may be mounted in the gage holding member **28** of the pad box, the tongue having at its forward end an upstanding projection or pin **52** arranged to engage the V-shaped opening **46** in the outsole. The forward end of the tongue **50** is straight at opposite sides of the pin **52** and is provided at such portions with upstanding projections or prongs **54** which are pointed at their upper ends, as shown in Fig. 6. The gage **48** also includes an upper tongue **56** spaced above the tongue **50** a little more than the thickness of a normal outsole, the tongue **56** extending farther forwardly than the lower tongue **50** and having a rounded forward portion **58** which is curved transversely, as shown in Figs. 5 and 6, to correspond to the curvature at the heel portion of a shoe bottom. The pin **52**, as illustrated, is longer than the space between the tongues **50** and **56** and the upper portion of the pin passes loosely through a hole **60** formed in the curved portion of the tongue **56**. The pin **52** may be riveted or otherwise secured to the lower tongue **50**, and the projections **54** are preferably integral with the tongue as illustrated but they could, of course, be separate members secured to the tongue in any usual or convenient manner.

In utilizing the mechanism, the rear sole gage **48** is moved into operative relation with the pad **18**, as described above, and the outsole **44** is placed in a predetermined position on the pad. The gage **48** is then moved until the V-shaped opening **46** is engaged by the pin **52**. This maintains the rear portion of the outsole in a predetermined position on the pad and the forepart gages **20**, **22** may then be operated to engage or find the forepart of the outsole, after which they become locked to determine the position of the forepart of the shoe relatively to the outsole. It will be seen that when the pin **52** engages the opening or notch **46**, the projections **54** will underlie the outer or tread surface of the outsole at points located rearwardly of the heel breast line B. Moreover, the concave portion **58** of the upper tongue **56** will overlap the central portion of the rear end of the outsole in the manner already described in connection with the sole gage **26**.

The shoe is placed on the outsole **44** in the position determined by the gages **20**, **22** and the heel portion of the shoe is engaged by the rear shoe gage **24** after which the rear sole and shoe gages **48**, **24** automatically shift whatever extent may be necessary in order to position the heel portion of the shoe relatively to the rear portion of the outsole. The pressure applying abutments **36** and **38** are moved into engagement with the shoe and pressure is applied to cement attach the outsole to the shoe bottom. Since the upstanding pin **52** engages only the open notch **46** in the rear edge face of the outsole, it will be seen that, while the pressure is being applied, there might be a tendency for the outsole to shift lengthwise away from the gage during the application of pressure or before sufficient pressure has been applied to clamp the outsole against the pad and prevent such movement. Lengthwise movement of the outsole is effectively prevented by the projections **54** which, during the first part of the pressure, are caused to penetrate the outer surface of the outsole and thus hold it against lengthwise movement until sufficient pressure has been applied to clamp the outsole against such movement. As the pressure increases the projections **54** penetrate into the material of the outsole but since these projections are located rearwardly of the heel breast line B, the indentations made thereby will not show in the finished shoe because this portion of the outsole will be concealed in the transverse groove in the breast of the heel. Furthermore, the V-shaped recess **46** is likewise located rearwardly of the heel breast line B so that it too will be concealed in the groove in the breast of the heel. The overlapping portion **58** of the upper tongue **56** covers any cement which might be on the central portion of the rear end of the outsole and separates said portion from the shoe bottom in the manner already described and thus prevents the central portion of the outsole from becoming attached to the shoe bottom and also provides an opening into which the forwardly projecting lip of the heel may be inserted when the heel is applied to the shoe. After the outsole has been cement attached to the shoe bottom, a heel such as the heel H shown in Fig. 9 may be attached in the usual manner to the shoe to complete the construction thereof, the lip of the heel, as stated, overlying the central portion of the outsole.

It will be seen from the foregoing that an out-

sole which terminates a short distance rearwardly of the heel breast line of a shoe may be readily and accurately positioned relatively to a shoe bottom with the aid of the apparatus herein disclosed without disfiguring the rear portion of the outsole in a manner that will show in the finished shoe and mar its appearance. Moreover, the machine provides a convenient way of cement attaching a short outsole to a shoe bottom while simultaneously providing an opening or pocket between the rear portions of the outsole and the shoe bottom for receiving the forwardly projecting lip of a heel which is adapted for use with such an outsole and is arranged to interengage with the outsole in the manner described.

The method of making shoes which has been disclosed has not been claimed herein because it forms the subject-matter of a divisional application Serial No. 329,525, filed April 13, 1940, in my name.

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

1. In a machine for cement attaching soles to shoes, the combination of a pad for supporting a shoe and an outsole which terminates a short distance rearwardly of the heel breast line of the shoe, means for engaging a recess in the rear portion of said outsole and maintaining the outsole in a predetermined position on the pad, mechanism for engaging the shoe and positioning it relatively to the outsole, means for applying pressure to the outsole and shoe to cement attach the outsole to the shoe bottom, and means extending forwardly of the sole engaging means for maintaining the central portion of the rear end of the outsole separate from the shoe bottom under said pressure, thereby providing an opening between the outsole and shoe bottom.

2. In a machine for cement attaching soles to shoes, the combination of a pad for supporting a shoe and an outsole which terminates a short distance rearwardly of the heel breast line of the shoe, a gage having means thereon for engaging a recess formed in the rear portion of said outsole and located between the opposite edge faces thereof to hold the outsole in a predetermined position on the pad, mechanism for engaging the opposite sides of the shoe and positioning it relatively to the outsole, means for applying pressure to the outsole and shoe while they are thus engaged to cement attach the outsole to the shoe bottom, and means on the forward end of said gage for preventing the central portion of the rear end of the outsole from engaging the shoe bottom under said pressure.

3. In a machine for cement attaching soles to shoes, the combination of a pad for supporting a shoe and an outsole which extends only a short distance rearwardly of the heel breast line of the shoe, a gage adapted to engage a recess formed in the rear portion of the outsole and passing only part way through the thickness thereof, a projection on said gage arranged to fit the recess in said outsole, thereby permitting the gage to control the position of the outsole on the pad, said projection diminishing to a point at its outer end, mechanism arranged to engage the opposite sides of the shoe and, in conjunction with said gage, to position the outsole and shoe relatively to each other on the pad, and means for applying pressure to the outsole and shoe while they are maintained by said gage and said mechanism in their proper relative positions to cement attach the outsole to the shoe bottom.

4. In a machine for cement attaching soles to shoes, the combination of a pad for receiving a shoe and an outsole which terminates in a straight rear edge face a short distance rearwardly of the heel breast line of the shoe, a gage arranged to engage an opening in the rear edge face of the outsole located between the opposite edge faces thereof and extending through the full thickness of the outsole, said gage being arranged to hold the outsole in a predetermined position on the pad, a projection on said gage for engaging said opening in the outsole, thereby permitting the gage to control the position of the outsole, mechanism for engaging the opposite sides of the shoe, means for causing said gage and said shoe engaging mechanism to position the outsole and shoe relatively to each other on the pad, means for pressing the outsole and shoe against the pad while they are held in their proper relative positions to cement attach the outsole to the shoe bottom, and means extending a substantial distance beyond the projection on said gage lengthwise and widthwise of the outsole for holding the central portions of the rear ends of the outsole and shoe separate from each other during the pressing operation.

5. In a machine for cement attaching soles to shoes, the combination of a pad for receiving a shoe and an outsole which terminates a short distance rearwardly of the heel breast line of the shoe, a gage arranged to engage a recess formed in the rear portion of said outsole and located between the opposite lateral edge faces thereof, said gage holding the outsole in a predetermined position on the pad, said gage having means thereon adapted to overlap a portion of the rear end of the outsole which extends forwardly of said recess and to separate said portion from the shoe bottom, mechanism arranged to engage the opposite sides of the heel portion of the shoe and, in conjunction with the sole gage, to position the shoe relatively to the outsole, and means for applying pressure to the outsole and shoe to cement attach the outsole to the shoe bottom except at the portion of the outsole which is overlapped by the gage.

6. In a machine for cement attaching soles to shoes, the combination of a pad for supporting a shoe and an outsole which terminates in a straight edge face a short distance rearwardly of the heel breast line of the shoe, a gage having a projection thereon adapted to engage a recess formed in the rear edge face of the outsole between the opposite lateral edges thereof and hold the outsole in a predetermined position on the pad, mechanism for engaging the opposite sides of the shoe and, in conjunction with said gage, positioning the outsole and shoe relatively to each other on the pad, means for applying pressure to the outsole and shoe to cement attach the outsole to the shoe bottom, and means on said gage separate from said projection for preventing movement of the outsole relatively to the shoe until sufficient pressure has been applied to prevent such relative movement.

7. In a machine for cement attaching soles to shoes, the combination of a pad for supporting a shoe and an outsole which extends only a short distance rearwardly of the heel breast line of the shoe, a gage having means thereon arranged to engage an opening in the rear edge face of the outsole extending completely through the thickness thereof and thereby maintain the outsole in a predetermined position on the pad, mechanism arranged to engage the opposite sides of the shoe

and, in conjunction with said gage, to position the shoe and outsole relatively to each other on the pad, means for applying pressure to the shoe and outsole to cement attach the outsole to the shoe bottom, and a plurality of projections on said gage arranged to engage the outsole and penetrate into the material thereof under said pressure, thereby preventing movement of the outsole longitudinally of the shoe until sufficient pressure has been applied to clamp the outsole against such movement.

8. In a machine for operating upon shoes and soles, means for relatively positioning a shoe and sole before they are operated upon by the machine, said means including a gage positioned substantially in the plane of the sole and arranged to overlap the rear portion thereof, means on said gage for engaging a recess in the rear portion of the sole and thereby maintaining the sole in a predetermined position relatively to the shoe, and means carried by said gage constructed and arranged to overlap a portion of the rear end of the sole and separate said portion from the shoe bottom, said last-named means extending substantial distances beyond the sole engaging means of the gage widthwise and lengthwise of the sole.

9. In a machine for operating upon shoes and soles, means for relatively positioning a shoe and sole prior to an operation thereon, said means comprising mechanism for engaging the opposite sides of a shoe, a gage finger positioned substantially in the plane of the sole and arranged to overlap the rear portion thereof, a projection on said finger arranged to engage a recess in the rear portion of the sole and hold said portion in a predetermined position relatively to the shoe, and means on said finger arranged to overlie at least the central portion of the sole from its rear edge face a substantial distance forwardly of the heel breast line of the shoe, thereby separating said central portion from the shoe bottom and providing an opening between the sole and shoe bottom, said means also extending a substantial distance laterally of the sole at opposite sides of said projection.

10. In a machine for cement attaching soles to shoes, means for relatively positioning a shoe and a sole which terminates a short distance rearwardly of the heel breast line of the shoe, said means comprising a member for engaging the shoe and locating it in a predetermined position, an elongated gage finger extending lengthwise of the sole in a plane substantially parallel thereto and being arranged to overlap the rear portion only of the sole, a projection on said finger extending substantially at right angles thereto for engaging a recess in the rear portion of the sole and maintaining the sole in a predetermined position relatively to the shoe while the sole is being attached thereto, and means on said finger above said projection constructed and arranged to overlie the central portion of the rear end of the sole for a substantial distance forwardly of said projection and to extend between the sole and shoe bottom during the attaching operation and thereby separate the rear portions thereof, said last-named means providing an opening between the shoe and the rear end of the sole after the sole has been attached to the shoe, said means also extending transversely of the sole substantial distances laterally of said projection but terminating inwardly of the opposite edge faces of the sole.

11. In a machine for cement attaching soles to shoes, means for relatively positioning a shoe and sole before they are attached to each other, said means comprising mechanism for engaging the shoe and locating it in a predetermined position, a gage finger for maintaining the sole in a predetermined position relatively to the shoe, and a projection on said finger constructed and arranged to enter a recess in the sole which does not pass completely through the material thereof, said projection having a pointed end arranged to engage the material of the sole, thereby permitting said gage finger to control the position of the sole.

12. In a machine for cement attaching soles to shoes, means for relatively positioning a shoe and sole before they are cement attached to each other, said means comprising mechanism for engaging the opposite sides of the shoe and locating it in a predetermined position, a gage finger extending lengthwise of the sole substantially in the plane thereof and arranged to overlap the rear portion of the sole for maintaining said sole in a proper position relatively to the shoe while the sole and shoe are being attached to each other, and a projection on said finger less in extent than the thickness of the sole and constructed and arranged to engage a depression in the rear portion of the sole which does not pass completely through the sole, thereby permitting said finger to control the position of the sole, said projection extending substantially at right angles to the gage finger and being shaped to fit said depression.

13. In a machine for cement attaching soles to shoes, means for relatively positioning a shoe and sole before they are attached to each other, said means comprising mechanism for engaging the shoe and locating it in a predetermined position, a gage finger located substantially in the plane of the sole and arranged to overlap the rear portion thereof for maintaining the sole in a predetermined lateral position relatively to the shoe, and a member projecting from said finger a distance less than the thickness of the sole and constructed and arranged to engage a prick punch opening in the sole which does not pass completely through the sole, thereby permitting said gage finger to control the lateral movement of the sole, said projection extending downwardly from the lower side of said finger and comprising a prick punch point shaped to fit said opening in the sole.

14. In a machine for cement attaching soles to shoes, means for relatively positioning a shoe and sole before the sole is attached to the shoe, said means comprising mechanism for engaging the opposite sides of a shoe and locating the shoe in a predetermined position, a gage finger arranged to overlap the rear portion of a sole and maintain it in a predetermined position relatively to the shoe, a projection on said finger extending therefrom a distance less than the thickness of the sole and constructed and arranged to engage a recess in said sole which does not pass completely through the material thereof, said projection being shaped to fit said recess and thereby permitting the finger to control the position of the sole, and means on said finger located above the projection and arranged to overlie a portion of the rear end of the sole for separating said portion from the shoe bottom during the sole attaching operation, said last-named means extending substantial distances forwardly and laterally of said projection.

15. In a machine for cement attaching soles to

shoes, means for relatively positioning a shoe and sole before they are attached to each other, said means comprising a member arranged to engage the opposite sides of the heel portion of a shoe and locate it in a predetermined position, a gage finger located substantially in the plane of the sole and arranged to overlap the rear portion thereof, a projection on said gage finger arranged to engage a recess in the rear portion of the sole and thereby permit the gage finger to control the position of the sole, the shape of said projection being complemental to the recess in the sole, and means on said gage finger constructed and arranged to overlie at least the central portion of the rear end of the sole and separate said portion from the shoe bottom during the attaching operation, thereby providing an opening between the rear portions of the sole and the shoe bottom, said means extending substantial distances beyond said projection lengthwise and laterally of the gage finger.

16. In a machine for cement attaching soles to shoes, means for relatively positioning a shoe and sole prior to their attachment to each other, said means comprising mechanism arranged to engage the opposite sides of the shoe and locate it in a predetermined position, a gage for maintaining the sole in a predetermined position relatively to the shoe, a projection on said gage for engaging a recess in the rear edge face of the sole which extends completely through the material thereof, thereby permitting the gage to control the position of the sole, and means above said projection and extending substantial distances forwardly and laterally thereof for overlapping the central portion of the rear end of the sole and separating said portion from the shoe bottom.

17. In a machine for cement attaching soles to shoes, means for relatively positioning a sole and shoe prior to their attachment to each other, said means comprising mechanism arranged to engage the opposite sides of the shoe and locate it in a predetermined position, a gage for maintaining the sole in a predetermined position relatively to said shoe during the attaching operation, means on said gage extending at right angles to the plane of the sole for engaging a recess formed in the rear edge face of the sole, thereby permitting the gage to control the position of the sole, and a plurality of projections on said gage arranged to penetrate the material of the sole to prevent movement of the sole away from said sole engaging means during the sole attaching operation.

18. In a machine for cement attaching soles to shoes, means for relatively positioning a sole and shoe prior to their attachment to each other, said means comprising mechanism arranged to engage the opposite sides of the shoe and locate it in a predetermined position, a gage finger for maintaining the sole in a predetermined position relatively to the shoe during the attaching operation, a projection on said gage finger arranged to engage a recess formed in the rear edge face of the sole and extending completely through the thickness thereof, thereby permitting the gage finger to control the position of the sole, said projection extending at right angles to the plane of the sole and being located at the forward end of said gage finger, a separate finger above said projection arranged to overlie the central portion of the rear end of the sole and to separate said portion from the shoe bottom, said finger extending substantial distances beyond said projection lengthwise and widthwise of the sole, and means on the gage finger for preventing movement of the sole away from said projection during the attaching operation.

19. In a machine for cement attaching soles to shoes, means for relatively positioning a sole and shoe prior to their attachment to each other, said sole terminating in a straight edge face a short distance rearwardly of the heel breast line of the shoe, said means comprising mechanism arranged to engage the opposite sides of the shoe and locate it in a predetermined position, a gage for maintaining said sole in a predetermined position relatively to the shoe prior to the attaching operation, a projection on said gage arranged to engage a recess formed in the rear edge face of the sole and extending completely through the sole, thereby permitting the gage to control the position of the sole, and means carried by said gage and located above said projection for overlapping the central portion of the rear end of the sole and separating said portion from the shoe bottom, thereby creating a space between the sole and shoe, said overlapping means extending substantial distances beyond said projection both laterally and longitudinally of the sole.

SIDNEY J. FINN.