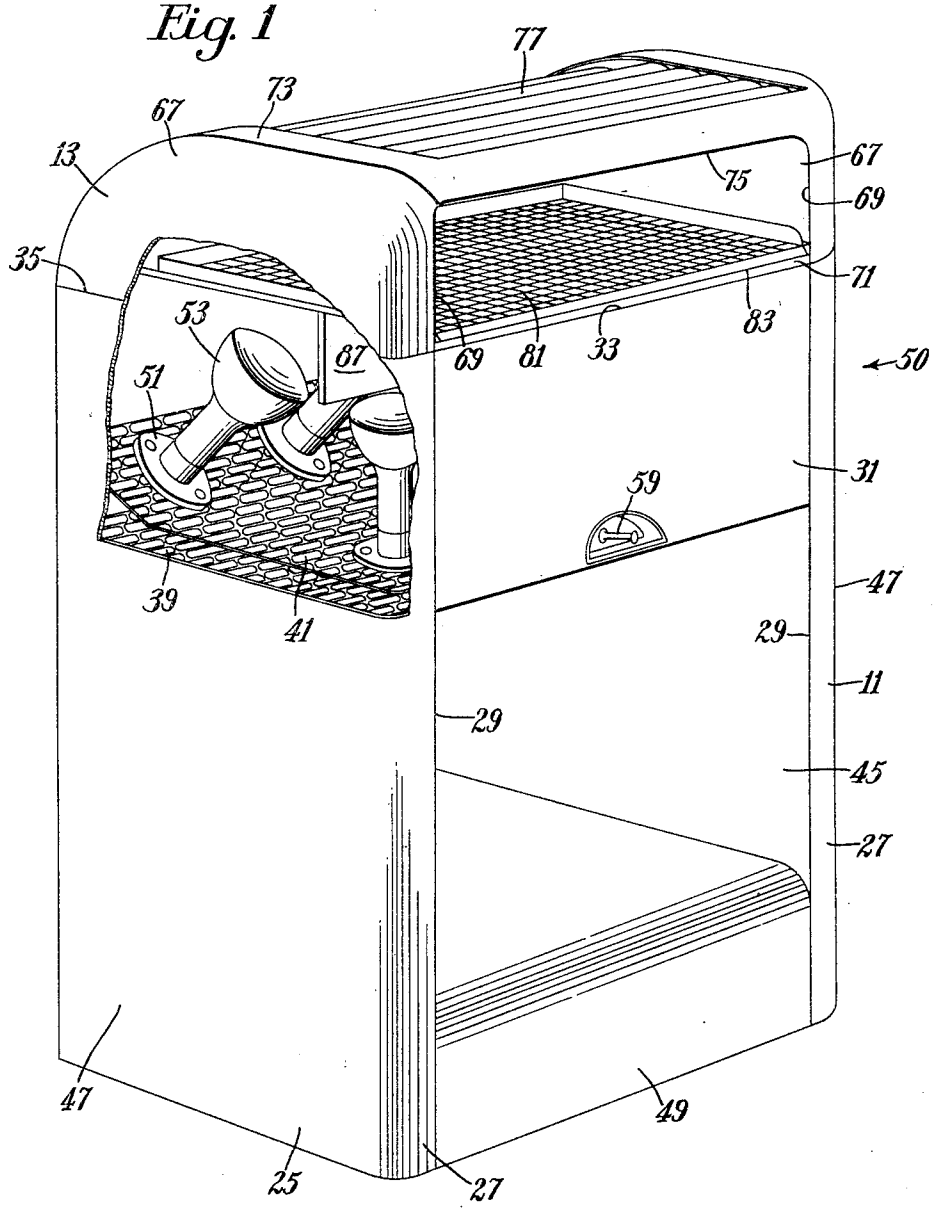
Dec. 15, 1953 E. H. SIMMS 2,662,964

APPARATUS ADAPTED FOR HEATING SHOES

Filed May 26, 1950 3 Sheets-Sheet 1

Fig. 1



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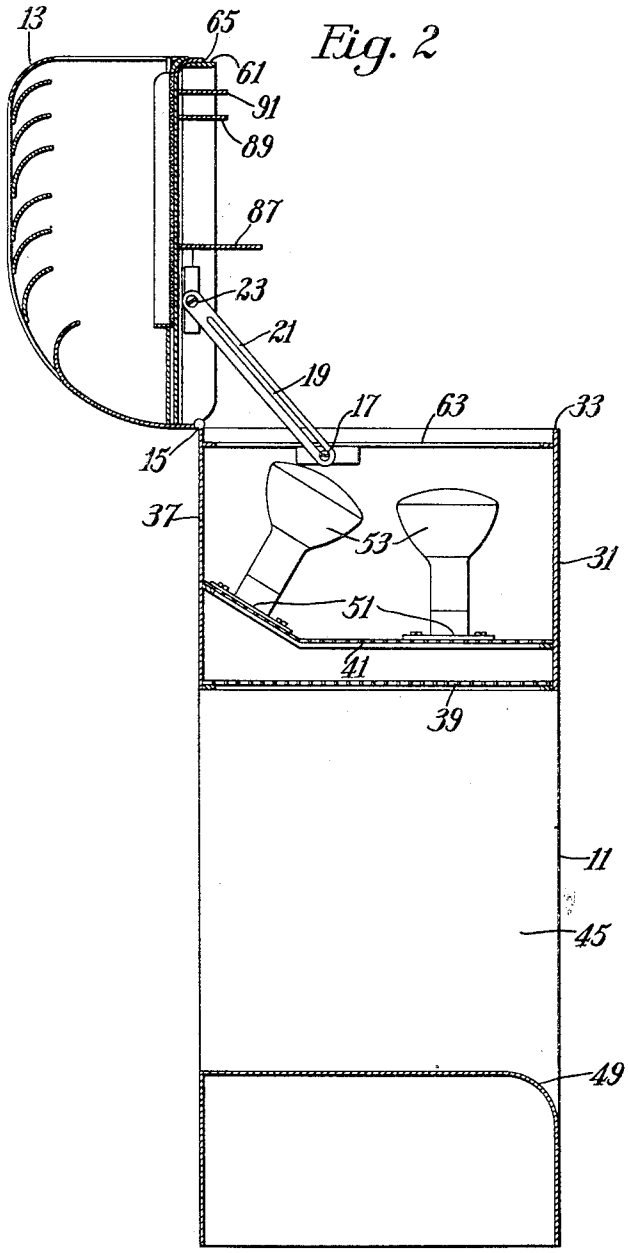
By his Attorney

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APPARATUS ADAPTED FOR HEATING SHOES

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Fig. 2



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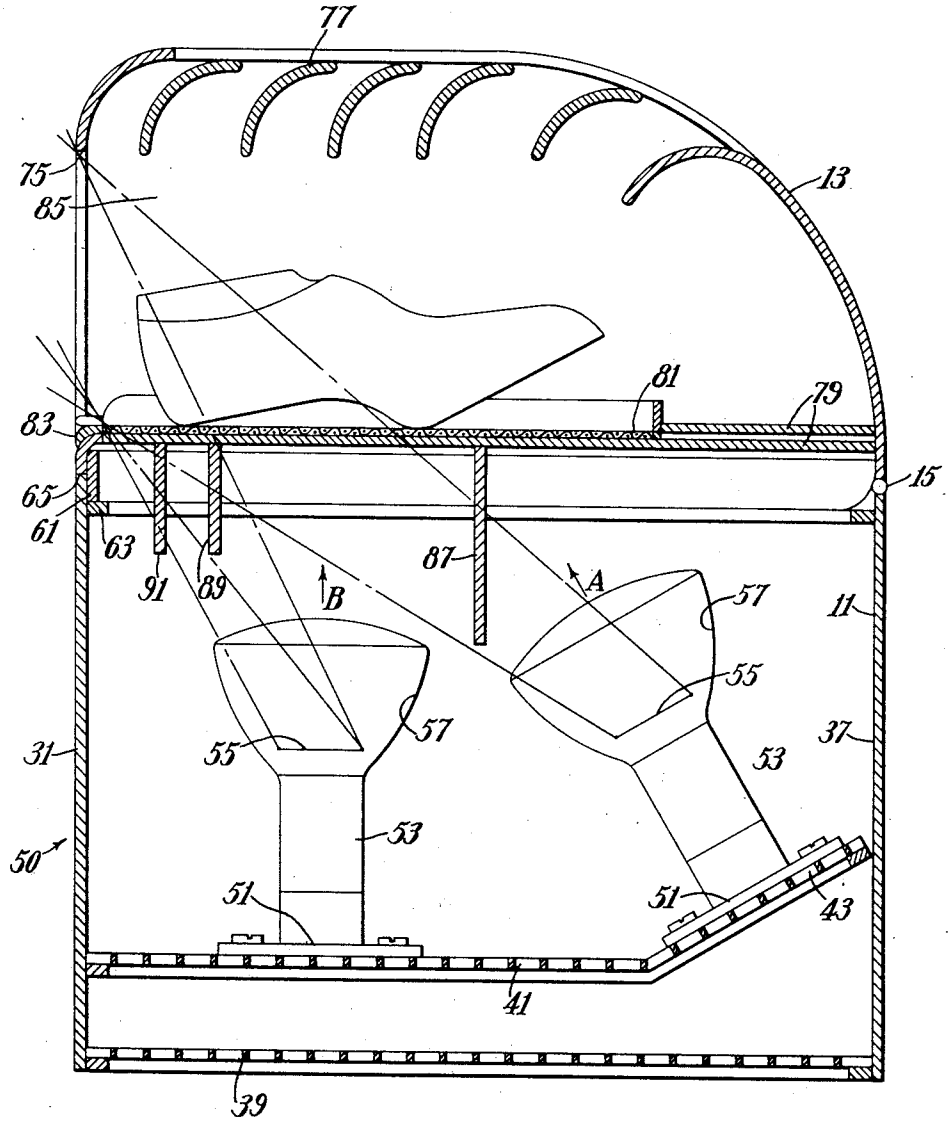
By his Attorney

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Fig. 3



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APPARATUS ADAPTED FOR HEATING SHOES

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Claims priority, application Great Britain July 9, 1949

3 Claims. (Cl. 219—35)

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This invention relates to improvements in or relating to apparatus adapted for heating shoes, the word "shoe" being used herein to denote outer footwear generally whether completed or only partially-completed; the invention will be hereinafter described with reference to heating the bottoms of shoes which have been lasted but which have, as yet, no outsoles.

At the present time a considerable proportion of the shoes being manufactured are "cement-soled" shoes, that is to say shoes which have leather outsoles secured in place upon their shoe bottoms by cement rather than by stitching or metallic fasteners. Customarily a cement-soled shoe is made by a process in which both the outsole and the shoe bottom are first roughed, for example with a wire brush, and are then given marginal applications of pyroxylin solution, the solvent being thereafter allowed to evaporate to leave marginal coatings of pyroxylin on the two workpieces. Subsequently, at a convenient time in the shoe manufacturing process, a suitable activator, comprising a volatile solvent for the pyroxylin, is applied to the outsole and the outsole and shoe are, very shortly thereafter, brought together and placed under pressure in a cement sole press. The activator brings the pyroxylin coatings on the outsole and shoe bottom into an adhesive condition and the outsole and shoe are held together under pressure in the press until the solvent has largely evaporated and a sufficiently firm bond between the outsole and the shoe bottom has been produced to allow the work to be removed from the press.

In making a cement-soled shoe by the process just referred to the period of time for which the outsole and shoe must be held together under pressure is one factor which determines the number of pairs of shoes which a cement sole press is capable of handling in a given time, and in order to shorten this period and so increase the capacity of the press it has been a common practice to subject the outsole to moist heat, immediately prior to application of the activator, with a view to hastening evaporation of the solvent when the work is in the press. It has also been proposed to heat the shoe bottom, rather than the outsole, immediately prior to bringing together of the shoe and outsole and placing in the press.

It is one of the various objects of the present invention to provide an improved apparatus adapted for heating the bottom of a shoe, which bottom carries a marginal coating of cement, prior to bringing together the shoe and an outsole carrying a marginal coating of cement to which an activator has been applied.

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An apparatus illustrative of the invention is hereinafter described in detail, this illustrative apparatus comprising an enclosure having a movable hood carrying a work support in the form of a horizontal open-mesh wire grid upon which lasted shoes may be positioned shoe-bottoms downward. Beneath the work support are situated six electric radiant heat lamps which direct heat upwards through the support towards work so positioned.

The wire grid forms the floor and the hood forms the ceiling of a compartment in which six shoes may be accommodated side by side, the hood having a top plate provided with louvres. A number of baffle plates are arranged to keep glare from the lamps from the operator's eyes when he is positioning a shoe in the nest or removing a shoe therefrom. By arranging the apparatus in such a way that shoes are inserted bottoms downward the work of the operator is facilitated in that he does not need to position the shoes on last supports or the like; on the other hand this makes it necessary to have the lamps beneath the shoes, and the lamps are, in this case, liable to become somewhat obscured, after a time, by small pieces of waste matter from the work (including, for example, leather dust resulting from roughing), and with this in mind the apparatus is so arranged that the work support, hood and baffle plates can be swung upwards as a whole about a hinge to allow free access to the lamps for periodical cleaning.

The above and other features and advantages of the present invention will become more clear from the following description, to be read with reference to the accompanying drawings, of the said illustrative apparatus; it will be realized that this apparatus has been selected for description by way of example and not of limitation of the invention.

In the drawings,

Fig. 1 is a perspective view of the illustrative apparatus;

Fig. 2 is a view of the apparatus in section by a vertical plane extending from front to rear of the apparatus; and

Fig. 3 is a view similar to Fig. 2 but to a larger scale, an upper part only of the apparatus being shown.

The illustrative apparatus comprises a body 11 adapted to stand upon the floor and a hood or cover 13 hinged to the body 11 by a horizontal hinge 15 at the back of the apparatus. Normally

the hood 13 occupies a position shown in Figs. 1 and 3, but it may be swung upwards upon the hinge 15 to an upper position shown in Fig. 2, such position being defined by engagement of pins 17, fixed in the body 11 with ends of slots 19 in links 21 pivoted to the hood 13 at 23; only one of the pins 17, slots 19 and links 21 is shown, viz., in Fig. 2, at the right hand side of the apparatus, the other being at the left hand side.

The body 11 is a riveted sheet metal structure and comprises two vertical side plates 25, 25 one at the left of the apparatus and the other at the right. Each side plate 25 is for the most part flat but has a forward margin 27 curved round through a right-angle toward the center of the apparatus and terminating at a vertical edge 29 and a rear margin bent round rather more abruptly.

The edges 29, 29 are bridged by a rectangular sheet metal front-plate 31 an upper horizontal edge 33 of which is continuous with upper horizontal edges 35, 35 of the plates 25, 25, while the rear margins of the plates 25, 25 are bridged by a backplate 37, situated behind the plate 31 and having the hinge 15 fixed thereto at its upper edge on a level with the edges 33, 35.

Lower horizontal edges of the plates 31, 37 are bridged by a perforated sheet metal grille 39, a short distance above which lies a second grille 41, the grille 39 being wholly horizontal but the grille 41 being horizontal save for a bent-up rear portion 43 as shown in the drawings. The grilles 39, 41 are fixed to narrow shelves riveted to the plates 25, 25.

Beneath the grille 39 each plate 25 is bridged from front to rear by a vetrical plate 45, the arrangement being such as to make a hollow frame 47 at each side of the apparatus; the plates 45 do not extend upwards above the grille 39. The plates 45 are bridged by a curved plate 49 which runs from floor level up for a short distance at the front of the apparatus and then curves over to run horizontally between the plates 45 beneath the grille 39. It will be seen that the upper parts of the plates 25, the front-plate 31, back-plate 37 and grille 41 provide a housing 50 having an aperture at the top and supported by the frames 47.

Fixed to the grille 41 and situated within the housing 50 are lamp holders 51 for six electric lamps 53, three rearmost lampholders 51 being fixed, in a row extending from side to side of the apparatus, to the portion 43 of the grille 41 and three front lampholders 51 being fixed to its horizontal portion. Each lamp 53 is a 250 watt gas filled lamp of a type designed to emit a substantial proportion of radiant heat rays, and has a circular filament 55 and an internal silvered reflector surface 57, the arrangement being such that radiant heat from the rearmost three lamps is mainly directed forwards and upwards, in the direction of the arrow A (Fig. 3) while radiant heat from the front three lamps is mainly directed vertically upward, in the direction of the arrow B (Fig. 3). Power for the lamps 53 is controlled by a mainswitch 59 (Fig. 1) on the frontplate 31.

When the hood 13 is in its normal position a narrow skirt portion 61 thereof lies within the housing 50 and rests upon a narrow shelf 63 within the latter, a shoulder 65 of the hood at the same time resting upon the edges 33, 35. The hood 13 is a riveted sheet metal structure and comprises side plates 67, 67 which in said normal position are continuous with the side plates 25, 25 lying immediately above the latter. Thus a forward margin of each plate 67 is curved round through a right angle towards the center of the apparatus and terminates at a vertical edge 69. The edges 69, 69 are bridged across the front of the apparatus by a narrow metal strip 71 and also by a forward portion of a sheet metal top plate 73, which latter is curved down forward and terminates in a straight horizontal edge 75. The top plate 73 bridges the plates 67, 67 across the top of the apparatus and curves down round the back of the apparatus to the hinge 15. The top plate 73 is provided with six transverse louvres 77 of curved cross-section arranged one behind the other (see Figs. 2 and 3), five of which are of curved sheet metal secured to the plates 67, 67 at their ends and the other (the rearmost one) of which is constituted by a curved portion of the plate 73 itself. Adjacent the bottom of each of the edges 69 is provided a forwardly-and-rearwardly extending channel member 79, the two members 79 providing a guideway in which is mounted a platform-like work support 81, the latter taking the form of a rectangular horizontal open-mesh wire grid with metal binding at its periphery. Normally the support 81 occupies a position in which a forward edge 83 thereof extends across between the edges 69 above the strip 71, the edges 69, 69, 75, 83 defining a rectangular opening 85. Elongated rectangular baffle plates 87, 89, 91 are fixed at the opposite ends thereof to the side plates 67.

When the apparatus is in operation six shoes are inserted through the opening 85 and positioned shoe-bottoms downward side by side upon the support 81 in the manner of the shoe S of Fig. 3, and the lamps 53 direct heat upwards through the support 81 onto the shoes in the directions indicated by the arrows A and B. About a minute and a half is long enough for adequate heating of the shoe bottom, but where a shoe has been left in the apparatus for a considerably longer period, say five minutes, no damage has resulted.

As will be seen from Fig. 3 the baffles 87, 89 prevent glare from the filaments 55 of the three rearmost lamps from reaching the operator's eyes through the opening 85 when he is positioning shoes upon the support 81, the baffles 89, 91 operating in a similar manner in respect of the three front lamps. The louvres 77 prevent any substantial escape of glare through the top of the hood 13.

Further, should the lamps 53 become obscured by leather dust from the work, the hood 13, and with it the work support 81 and the baffles 87, 89 and 91, can readily be swung upwards as a whole upon the hinge 15 to provide free access to the lamps 53 for cleaning or replacement.

Although I have shown and described my invention in terms of one specific embodiment thereof, it will be obvious to those skilled in the art that many other forms thereof, as well as variations in the one described, are possible. I therefore desire that my invention shall not be limited except in so far as is made necessary by the prior art and by the spirit of the appended claims.

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

1. In apparatus of the class described, an enclosure comprising a housing formed with an aperture and a cover pivoted to said housing for movement into and out of covering relation with said aperture, said enclosure being formed with

an opening for inserting a shoe to be heated, an infrared radiation-passing platform-like work support carried by and beneath said cover for movement therewith from a position in which the support lies horizontally over the aperture to a position in which the support is raised clear of said aperture for providing access to the interior of said enclosure, said support being arranged for receiving, bottom down and between the support and the top of the cover, a shoe inserted through said opening, and a source of infrared radiation disposed in said housing and arranged to radiate through said aperture toward said support.

2. In apparatus of the class described, an enclosure comprising a housing formed with an aperture and a hood pivoted to the housing for movement into and out of covering relation with said aperture, said enclosure being formed with an opening for inserting a shoe to be heated, a heat-radiation-passing work support carried by said hood for receiving bottom down a shoe inserted through said opening, a plurality of holders for radiant-heat lamps disposed in said housing and arranged to radiate heat toward said support, and vertically disposed baffle plates carried by said hood for intercepting visible radiation directed toward said opening from said lamps, whereby, when said hood is moved out of said covering relation, free access to said lamps is provided for cleaning and replacement.

3. In apparatus of the class described, an enclosure formed with an opening for inserting shoes and provided at its top with a hinged, upwardly tiltable hood, a horizontal open-mesh-grid work support carried by said hood upon

which support lasted shoes inserted through said opening may be supported bottoms downward, a radiant-heat lamp disposed in said enclosure beneath said support for radiating heat therethrough, and baffle plates carried by said hood below said support for intercepting visible radiation emitted by said lamp toward said opening, said plates being disposed in spaced relation providing for radiation therethrough from the lamp to the support.

ERNEST HARRY SIMMS.

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