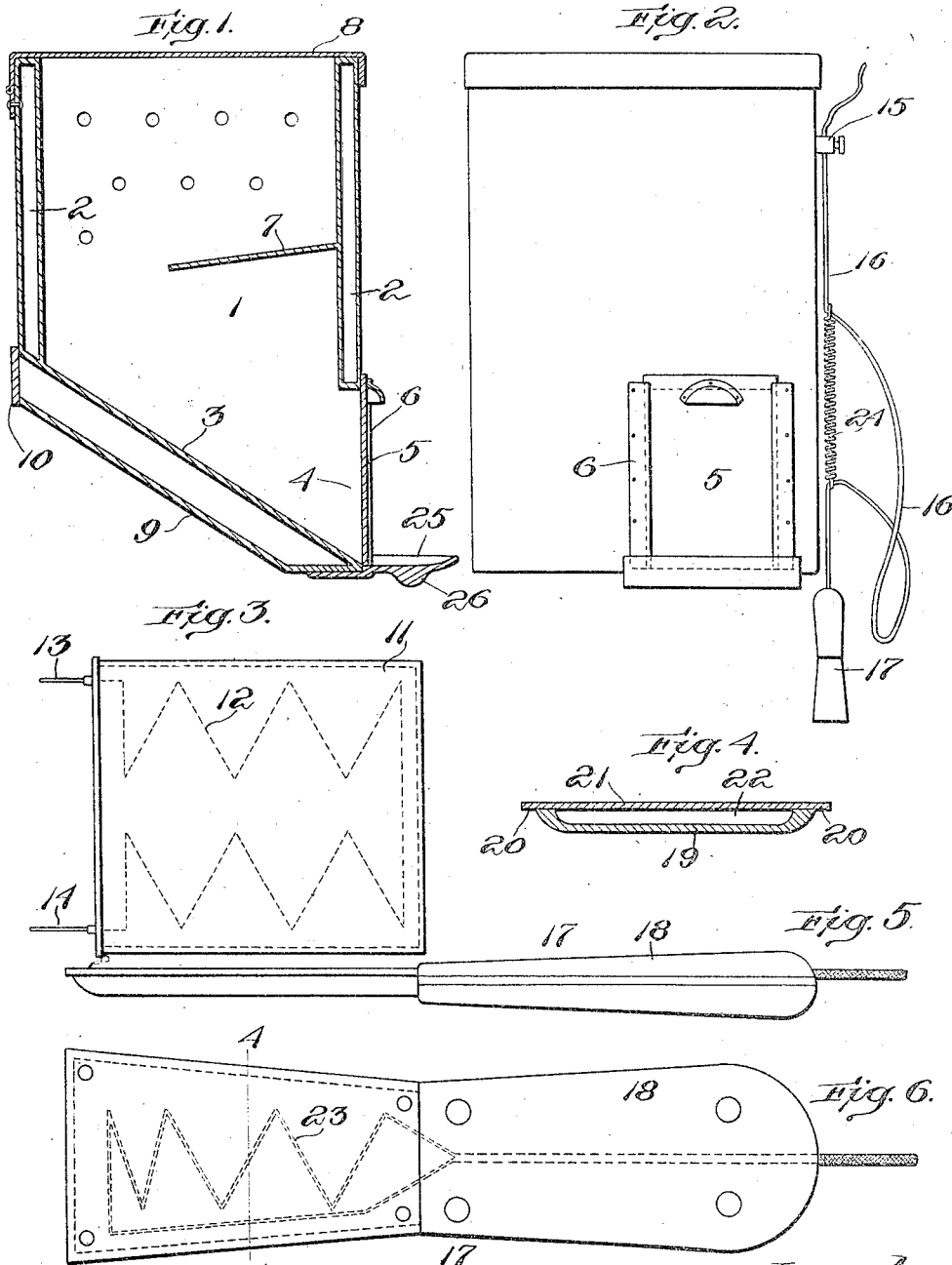


A. THOMA.
SHOE FILLER APPARATUS.
APPLICATION FILED MAR. 5, 1906.

957,393.

Patented May 10, 1910.



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UNITED STATES PATENT OFFICE.

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SHOE-FILLER APPARATUS.

957,393.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, ANDREW THOMA, a citizen of the United States, residing at Cambridge, in the county of Middlesex and State of Massachusetts, have invented an Improvement in Shoe-Filler Apparatus, of which the following description, in connection with the accompanying drawings, is a specification, like numerals on the drawings representing like parts.

In my Letters Patent No. 808,224, dated December 26, 1905, I have described the leading characteristics of my shoe filler and method of applying it to shoes, and in the present application I will set forth my apparatus for handling said filler and carrying out my method. This shoe bottom filler is normally semisolid and is prepared in the form of loaves, which require to be melted slowly in the presence of a uniform and continuous low heat, until the filler crumbles from the loaf shape into a heap or disintegrated approximately-fluid mass, in which condition it may readily be applied to the cavity of the innersole and pressed in place. The filler sets almost immediately upon coming in contact with the cold, damp leather, so that its fluid or semifluid condition is only temporarily required as a means of enabling the filler to be handled with ease, rapidity, economy and efficiency.

Accordingly my present invention aims to provide means for reducing the filler to its pliable condition and maintaining it in said condition for the short interval necessary in order properly to fill and shape the shoe bottom. To this end I have provided a supply chamber and molding apparatus, so arranged as greatly to facilitate the work of the operator in handling the normally intractable filler.

The details of construction and further advantages of my invention will be pointed out in the course of the following description, reference being had to the accompanying drawings, in which I have shown a preferred embodiment of my invention, and the latter will be more particularly defined in the appended claims, also forming a part of this specification.

In the drawings, Figure 1 is a vertical, transverse sectional view; Fig. 2 is a view in front elevation of the complete apparatus; Fig. 3 is a top plan view of the removable heater; Fig. 4 is an enlarged cross-sectional

detail, taken on the line 4-4, Fig. 6; and Figs. 5 and 6 are views in side elevation and top plan respectively, of a portion of the molding apparatus.

For convenience of illustration I have shown the heater or supply reservoir as square, although it will be understood that the cross-sectional shape is arbitrary and may be varied. The heater comprises an inner chamber 1, surrounded by hot air flues 65 or other heating jacket 2 and provided with an inclined bottom or filler support 3, leading to an opening 4, normally closed by a door 5, herein shown as sliding in ways 6. Preferably also in the upper portion of the chamber 1 I provide a shelf 7, slightly inclined and extending only partially across the chamber. The chamber is closed by a cover 8 for retaining the heat, and is provided with a pocket 9, preferably open at 10, for receiving the heating medium, herein shown as a resistance box or electric heater 11. I have not undertaken to show the details of construction of this heater, as the resistance wires 12 will be embedded therein in the usual manner common to electric heaters, the feed wires being indicated at 13, 14, and connecting to a suitable binding post, such as 15, at any convenient place on the apparatus. From the binding post 15 a conductor 16 extends downwardly to a hand molder 17, which may be grasped by its handle 18, and is provided with a forward metal part having a molding surface 19 with rounded corners, and opposite scraping edges 20, projecting from the flat top or spoonlike lifting side 21, the internal cavity 22 thereof containing the heating resistance 23, supplied by current from the feed wire 16. A spring 24 or other suitable means maintains the hand molder normally in position at the exit door of the heater, where I provide a shallow ledge or trough 25 for catching a reasonable amount of filler as the door is held or fastened partially open, said trough being of metal and of sufficient thickness to retain ample heat for maintaining the filler in its properly plastic and semifluid condition. On the bottom of the trough adjacent the front edge thereof, I provide a superheating tool or leveler 26, which coöperates with the hand molder 17 in molding, leveling and shaping the filler in the cavity of the inner-sole, and superheating the top surface of the filler by contact therewith.

It will be understood that in describing my apparatus above, I have set forth all the details of the preferred embodiment thereof as completely exhibited in the drawing, but that many variations are contemplated within the spirit and scope of my invention.

The manner of using my apparatus is as follows: The operator first places a suitable quantity of the filler in the chamber 1 resting on the heated bottom 3 of the filler, and when this has become sufficiently melted to begin operations he places one or more loaves of reserve filler on the shelf 7. The main mass of filler flows downward by gravity against the door 5, ready to pass through the opening 4 for use, and the reserve filler is meanwhile being softened so that it may later be dropped into the general mass of filler, and in fact will automatically deposit itself when it reaches the proper condition, because of the inclination of the shelf 7. The heat from the main heater 11 in the bottom of the apparatus, passes up the side flues so that a constant circulation is maintained, which gives the best and most rapid results. The operator raises the door 5 slightly, according to the amount of filler which he wishes to maintain in the trough 25, and then, with a shoe in his left hand, he lifts the proper amount of filler from the trough with his right hand, by means of the flat upper side 21 of the molder, and places said filler in the bottom cavity of the shoe, immediately smoothing down the heap of filler by means of the smoothing surface 19 of said hand molder, and immediately moves the top surface of the filler in pressing engagement with the lever 26, which serves to complete the molding and compacting operation necessary for properly placing the filler in its finished condition in the shoe, and then scrapes the filler from the welt and edges with the edge 20. This operation is accomplished almost instantly, the hand molder first dumping the filler in a heap on the shoe and then, reversed, and simply caused to slide lengthwise of the shoe over the filler and back again, thereby roughly placing the filler in proper position, whereupon the shoe is instantly placed in forcible sliding contact against the stationary molder or lever 26, and as it is pulled back therefrom a deft turn of the hand molder scrapes the welt and edges. As both the hand molder 17 and the stationary molder 26 are maintained hot, they cooperate in quickly accomplishing the desired result and at the same time further melt the contacting surface of the filler sufficiently to run the melted compound into the crevices and complete the waterproofing feature of the method, as more fully set forth in my patent above mentioned. Having filled a shoe in this manner, the operator deposits the filled shoe, grasps a fresh shoe, and repeats the opera-

tion, being enabled by my apparatus to fill readily two hundred pairs of shoes per hour.

One main advantage of having an apparatus electrically operated is that thereby a uniform heat may readily be maintained in all parts of the apparatus (it being understood that a suitable rheostat, cut-out switch, etc., will be provided in connection with the supply current), also the electric apparatus keeps longer in repair and is neater than other available means of heating. The arrangement of surrounding flues and inclined supporting surfaces gives the uniformity of melting which experience has proved to be necessary for my special filler, the heat being applied on the top as well as on the bottom by the circulation of hot air and the internal shape of the apparatus, causing the bottom portion of the filler to be delivered at the exit first, so that there is a continual shifting of relative position between the bottom and top portions, thereby preventing the filler from oxidizing and becoming overheated, etc., while the provision of two separate melting devices, one to operate in connection with each hand, conduces to rapidity and efficiency of work. The operator uses the stationary molder or superheating tool 26 by pressing the shoe against it, said shoe being held in his left hand while he operates upon the shoe with the movable molder held in his right hand, and the fact that both of these molding devices are maintained continually hot notwithstanding their contact with the filler also facilitates the rapid turning out of the work. The shelf-like trough or ledge 25 serves to check the outward flow of filler and constitutes an automatic control for the discharge, inasmuch as it will always remain approximately filled if the door is left open slightly, the mass of filler pouring sluggishly forward as the operator dips out of the trough, and the inclined bottom operates as an automatic delivering device for said trough.

The hand molder, *per se*, has been divided from this case and is therefore not herein claimed, but is covered by a divisional co-pending application for patent.

Having described my invention, what I claim as new and desire to secure by Letters Patent is,

1. A shoe filler apparatus, comprising a heating chamber adapted to hold shoe filler material which is normally self-sustaining but requires to be melted for use, said chamber containing a support for said material inclined downwardly toward the discharge end of said chamber for delivering automatically the filler when melted, said chamber having double walls which provide a surrounding air jacket for the circulation of heated air around said chamber, the inner walls of said chamber being perforated to provide flues for the passage of said

heated air from between said double walls into the interior of the chamber in direct contact with the filler material therein, means for maintaining a supply of said hot air between said double walls for delivery through into the chamber, and a discharge outlet at the lower end of said inclined support.

2. A shoe filler apparatus, comprising a heating chamber having a heated inclined bottom for melting the filler, a shelf above said bottom for partially softening a reserve supply of filler, means permitting free circulation of hot air throughout the chamber, means for supplying said heat, and a discharge outlet at the lower end of said bottom.

3. A shoe filler apparatus, comprising a chamber having a lower melting portion for melting the filler, a shelf extending partially across the chamber above said lower portion, for holding a reserve supply, means for maintaining extra heat at the bottom and moderate heat around the top of the chamber and a discharge outlet at the lower end of said chamber.

4. A shoe filler apparatus, comprising a heating chamber adapted to hold shoe filler material which requires melting for use, said chamber having double walls which provide a surrounding air jacket for the circulation of heated air around said chamber, said chamber also containing a double bottom normally open at one side, a self-contained electric heater fitting the cavity in said double bottom, removable therefrom without disturbing the apparatus, and means for closing said bottom when the heater is in place therein, said chamber having a discharge outlet adjacent the bottom, and means for regulating the discharge of the melted filler at said outlet.

5. A shoe filler apparatus, comprising a heating chamber having double walls, heating wires between said walls, a discharge opening at the bottom of said chamber, and an approximately horizontal shelf-like extension from said opening for automatically checking the flow of material and rendering it available to the operator.

6. A shoe filler apparatus, comprising a heating chamber provided with means for affording an even heat, and containing an

upper heated compartment for the initial heating of the filler material, a lower compartment to receive the latter when softened, means for superheating said lower compartment and a receiving device, in position to receive by gravity said softened but not liquid filler material, constructed and arranged to automatically control the discharge of the filler.

7. A shoe filler apparatus, comprising a heating chamber for receiving the filler to be melted, said chamber being provided with means including an external trough for automatically receiving from the interior and holding stationary a continuous supply in predetermined amount of the softened material.

8. A shoe filler apparatus, comprising a heating chamber having double walls, removable heating means containing electric resistance wires between said walls, a lateral discharge opening adjacent the bottom of said chamber, a hand molder located at said opening, and means for delivering electric current to said resistance wires and to said hand molder, the latter being yieldingly connected to said chamber for permitting free manipulation without permanently changing the location thereof.

9. A shoe filler apparatus, comprising a heating chamber for melting the filler, a discharge outlet at the lower end of said chamber, and molding mechanism permanently fixed to said apparatus at said outlet for molding the filler from said outlet when placed in a shoe, said mechanism including a stationary part of said apparatus and a hand-operated part for permitting the operator to employ both hands in the molding operation.

10. A shoe filler apparatus, comprising a heating chamber having a discharge opening at its lower end, a trough for receiving filler therefrom, a superheating molder on the under side of said trough, and means for maintaining said parts evenly heated.

In testimony whereof, I have signed my name to this specification, in the presence of two subscribing witnesses.

ANDREW THOMA.

Witnesses:

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