

May 7, 1935.

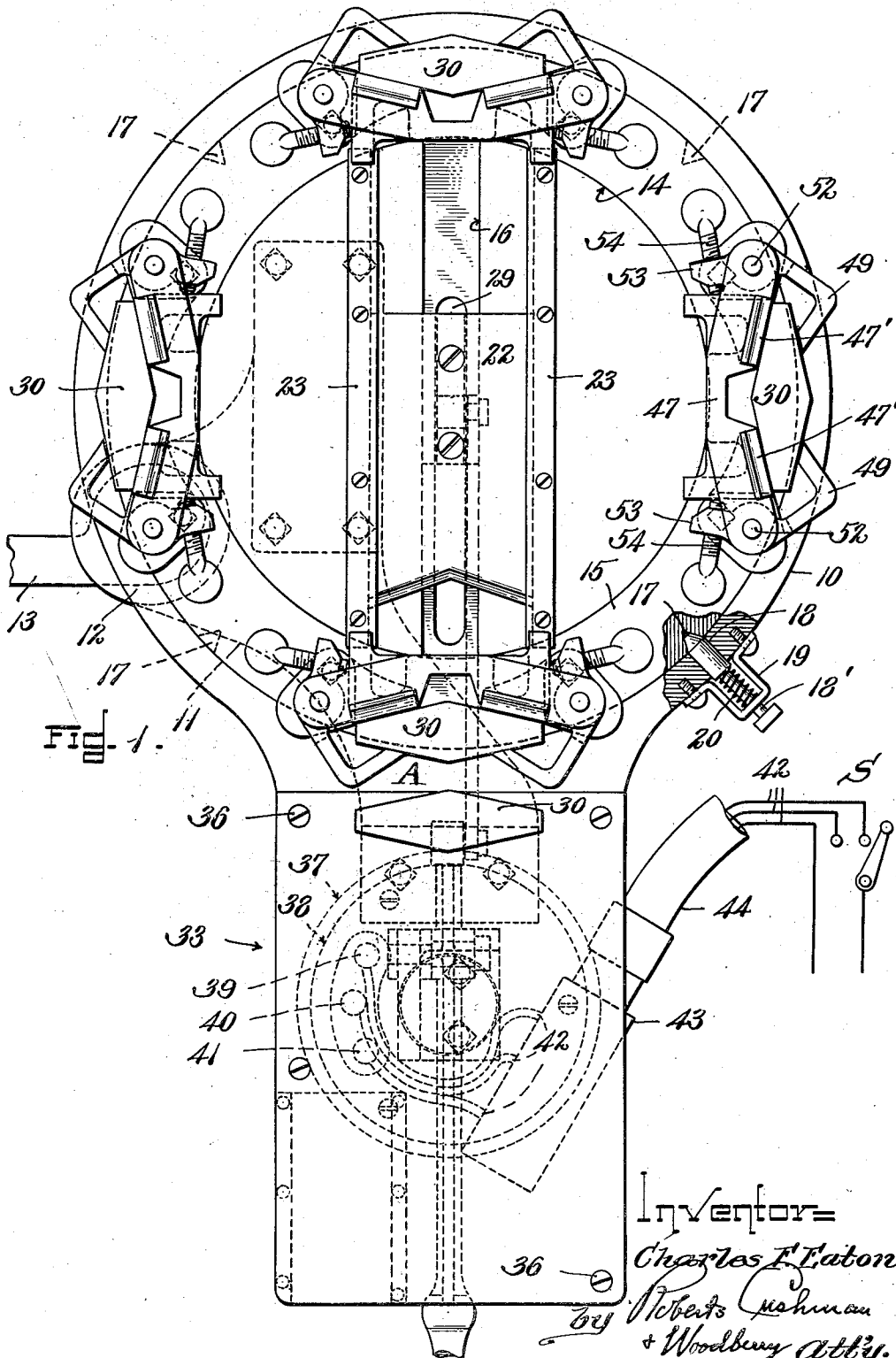
C. F. EATON

2,000,321

MAGAZINE SHOE FILLER UNIT

Filed Oct. 20, 1933

3 Sheets-Sheet 1



May 7, 1935.

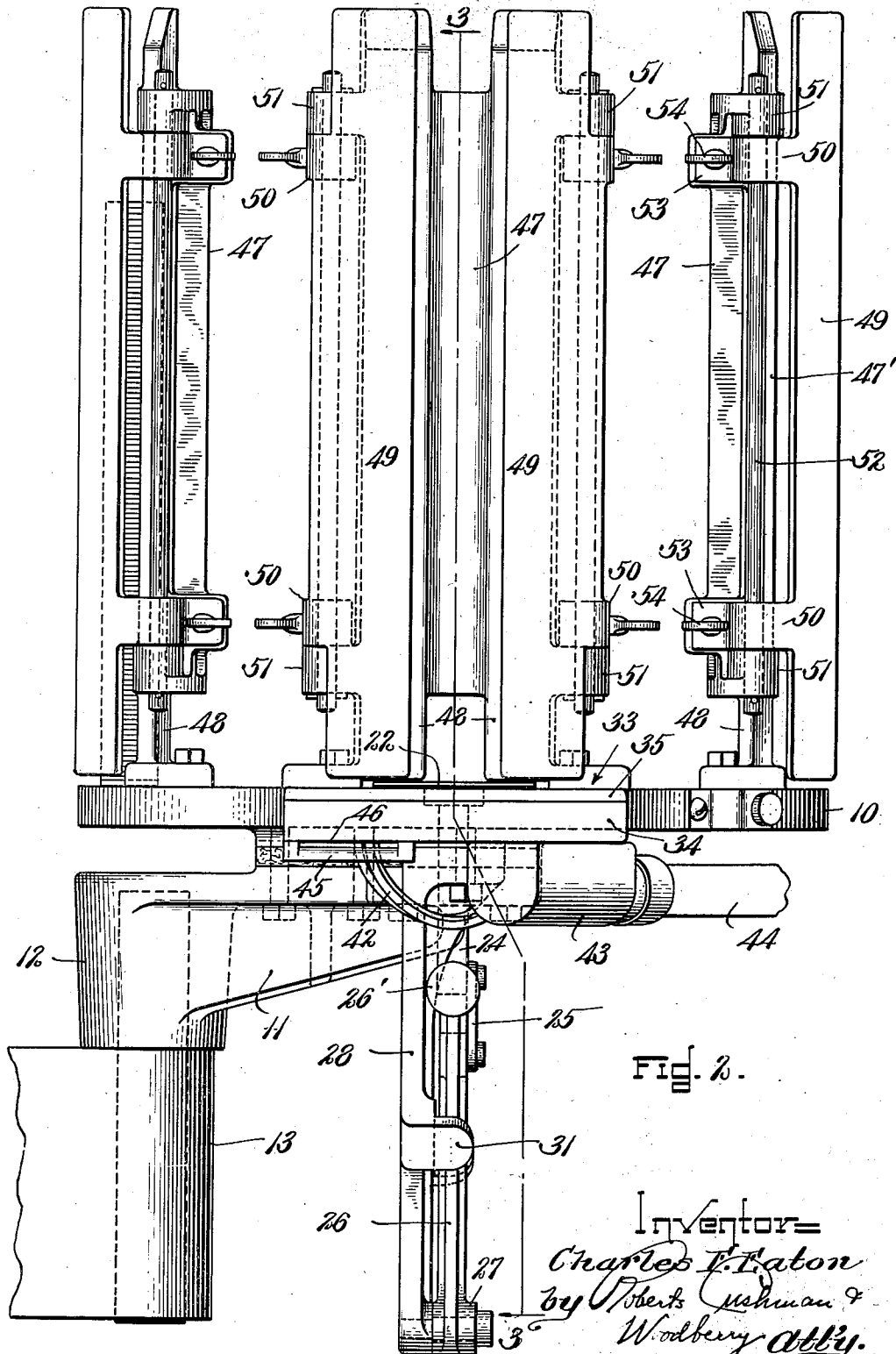
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MAGAZINE SHOE FILLER UNIT

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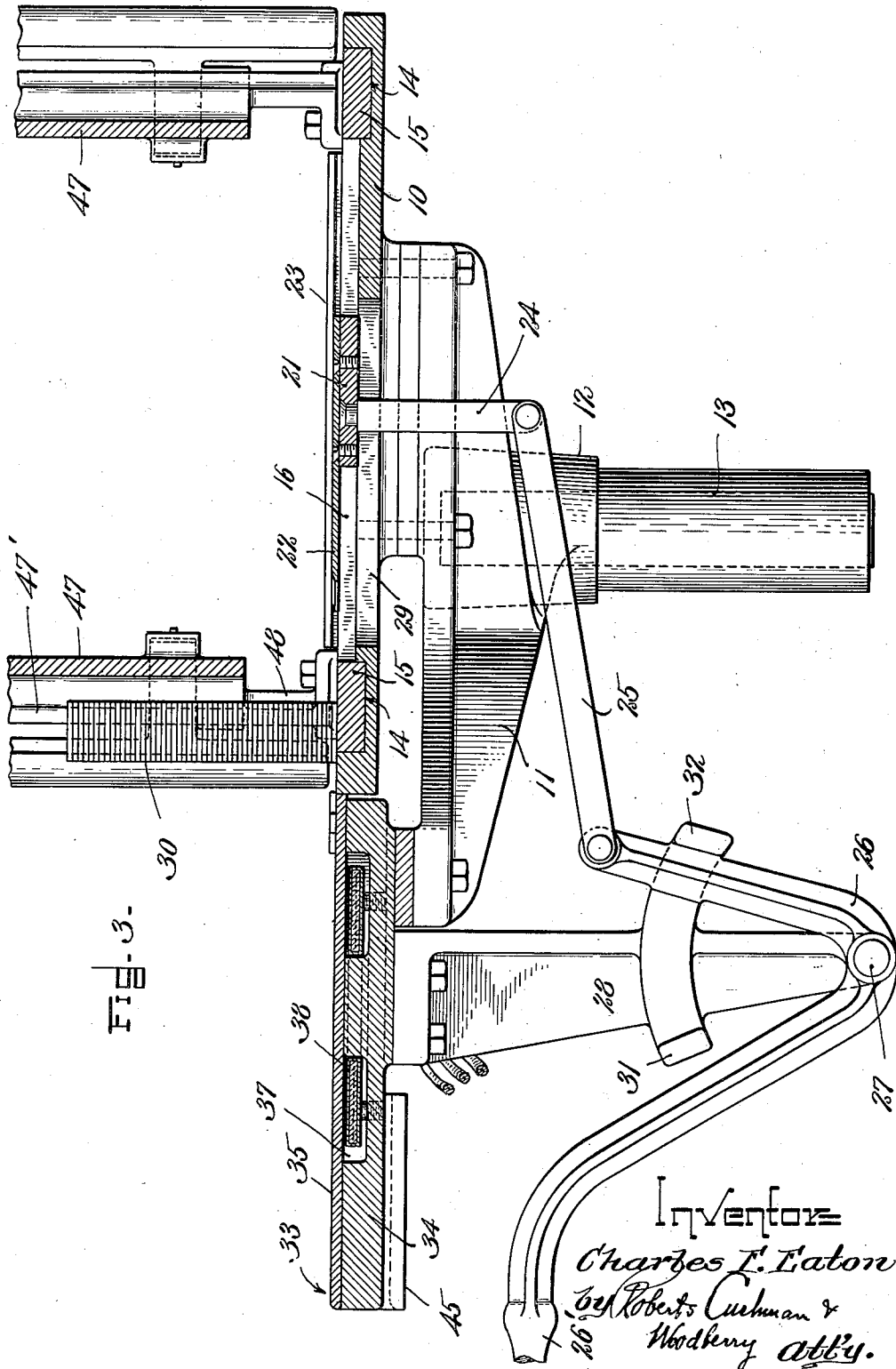
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MAGAZINE SHOE FILLER UNIT

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3 Sheets-Sheet 3



UNITED STATES PATENT OFFICE

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MAGAZINE SHOE FILLER UNIT

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14 Claims. (Cl. 18—1)

For the filling of shoe bottom cavities filler material is increasingly coming into use in the form of individual filler units or pieces of standardized sizes and shapes of the kind described and claimed in the Thoma Patent No. 1,793,340 dated February 17, 1931. Such filler units may be laid and spread in the shoe bottom cavity by hand, or by a filling machine of the general character illustrated in the Eaton Patent No. 1,927,279 dated September 19, 1933. The filler units are usually made of a heat plastic material and it is therefore desirable not only that a suitable supply of filler units be made readily accessible to the shoe filling operator and that the units be delivered to him one by one as required but that the units be heat-conditioned to render them plastic as they are successively delivered to the operator for laying and spreading in the shoe.

The present invention relates to apparatus for holding or storing a supply of shoe-bottom filler units and individually delivering them to the operator and individually heat-conditioning them preparatory to spreading them in the shoe bottom cavities. Such filler units are commonly furnished in an elongated six-sided rhomboidal form and the apparatus herein shown is especially designed to handle such forms, although the invention is not limited to any particular shape of filler units. The invention is also especially although not exclusively intended for association and use in connection with and as an adjunct or attachment to a shoe filling machine.

In the accompanying drawings:

Fig. 1 is a plan view of apparatus embodying the invention;

Fig. 2 is a front elevation of said apparatus; and

Fig. 3 is a section on line 3—3 of Fig. 2.

In the embodiment of the invention herein illustrated 10 represents a base consisting of a metal plate fastened upon the outer end of a bracket arm 11, which is provided with an apertured hub 12 pivotally mounted upon the end of an arm 13 by which the whole apparatus is supported. The arm 13 is fixed to the frame or standard of a shoe bottom filling machine (not shown) so as to support the apparatus in convenient association and relation for use in conjunction with the filling machine.

The top side of the base 10 is in the main flat and is formed with an annular groove 14 within which is rotatably mounted a ring 15 which constitutes a rotatable annular support carrying four upright magazines uniformly spaced apart about

the ring and also uniformly spaced from the center of the ring. The top of the base 10 within the ring 15 is also formed with a straight diametrical groove 16 whose opposite ends open into the groove 14 as shown in Fig. 3.

The ring 15 is formed upon its outer periphery with four sockets 17 uniformly spaced around the ring and adapted severally to cooperate with a locking bolt 18 which slides endwise in a radial bearing provided on the base 10. The locking bolt 18 is made at its outer end with a stem 18' which extends loosely through an aperture provided in a bracket 19 fastened to the base 10. A coil spring 20 surrounds the stem 18' and bears at one end against a shoulder provided on the bolt 18 and at its opposite end against bracket 19 thus yieldingly urging the bolt 18 toward and against the ring 15. When the bolt 18 engages one of the sockets 17 the ring 15 is thereby releasably locked in position and held against accidental rotative displacement. When in any one of its locked positions one of the four magazines carried by the ring occupies position A (Fig. 1) at one end of the diametrical groove 16, which constitutes the delivery station for the magazine.

Within the groove 16 is mounted a slide 21, 22, the bottom member 21 of the slide moving in the groove 16, and the side margins of the member 22 of the slide being confined in and guided by a pair of flanged guideways 23 fastened to the top of the base 10. Attached to the bottom of the slide is a depending arm 24 whose lower end is connected by a link 25 with one of the arms of a hand lever 26 fulcrumed at 27 on a bracket 28 which is fastened to the under side of the heater presently to be described. The arm 24 extends downwardly from the slide through a slot 29 provided in the base 10 through the middle of groove 16. The free end of the hand lever 26 is equipped with an operating handle 26'.

Each of the four magazines carried on ring 15 is loaded with a stack of filler units 30, the stack being supported mainly on the ring 15. When a loaded magazine is at delivery station A (Fig. 1) it is in such position that the reciprocating feed slide 22 may move back and forth through the bottom of the magazine and stack of units and push the lowermost unit in the stack out of the magazine in a direction radial of the ring 15. The forward end of the feed slide 22 is beveled upon its top side so as to insure that the thickness of the end of the feed slide will be less than the thickness of a filler unit and will engage and deliver only one unit from the bottom of the stack,

thus permitting the handling of units of considerable variation in thickness. The feed slide is reciprocated by the hand lever 26 and the movement of the lever and slide in its forward or delivery direction is limited by engagement of the lever 26 with a stop lug 31 on bracket 28, while the movement of the lever and slide in the opposite direction is limited by engagement with a second stop lug 32 on bracket 28.

During each forward or delivery movement of the feed slide its upper member or plate 22 engages the edge of the lowermost filler unit in the magazine at the delivery station A and pushes it forward out of the magazine and on to a heater 33 by which the unit is warmed to render it plastic and spreadable. The unit is then transferred to the bottom cavity of the shoe for the spreading and filling operation in the filling machine. In practice several filler units are usually kept in position upon the heater 33 and each time a heated filler unit is transferred to a shoe the lever 26 is operated to feed another unit from the hopper to the feeder. The units are then removed from the heater and used in the order in which they are fed to the heater from the magazine so that the proper heating and conditioning of one or more filler units may go on while a preceding unit is being laid in the shoe.

The heater 33 is a shelf-like structure comprising an iron base plate 34 and a brass or copper top plate 35 fastened together by screws 36 (Fig. 1). The top surface of the plate 35 is the heating surface for the filler units and is on the same level as the bottom of the magazines and close to the magazine at the delivery station A; hence the surface of the heater forms a slideway surface which is substantially a continuation of the bottom of the magazine. The base plate 34 is fastened by screws to the top of the pivotally supported bracket arm 11 and has secured to its under side the bracket 28 on which the operating lever 26 is fulcrumed as already described. Upon the top of the base plate 34 of the heater is an annular cavity 37 within which is placed an annular electric heating unit 38 provided with three binding posts 39, 40 and 41, the binding posts 39 and 41 being connected with the opposite ends of the usual filament of the heating unit and the binding post 40 being connected with an intermediate part of said filament. Conductors 42 lead from the binding posts of the heating unit into a junction box 43 secured to the under side of the base plate 34 and thence through a flexible conduit 44 to a source of electric current. A switch S is installed in said line by means of which the heater can be turned on or off and by means of which the action of the heater can be regulated so as to operate with greater or less intensity.

A small hand knife or spatula similar to a putty knife is used by the operator in transferring a filler unit from the heater 33 to the shoe and may also be used for spreading or partly spreading the material of the filler unit within the shoe bottom cavity. It is important that this knife be heated and for this purpose a small recessed plate 45 is secured to the under side of the base plate 34 of the heater to provide a slot or socket 46 adapted to receive the blade of the spatula and to hold it in heating relation to the heater. It is usual in practice to use two such spatulas in connection with each apparatus so that while one is in use the other may be placed in the socket 46 and be being heated.

Each of the several magazines for holding the

stacks of filler units 30 comprises an upright rear wall 47 provided with a pair of side wings 47' for engaging and guiding the rear edges of the filler pieces 30 in the stack and a pair of legs 48 seated upon and fastened by screws to the ring 15. The lower end of the wall 47, 47', is formed to provide a space or passage between the legs 48 for the passage of a filler unit and the feed slide.

Pivoted to the opposite edges of the walls 47' are two vertical front rails 49 for engaging and guiding the front edges of the units in the stack. Each front rail 49 is of angular shape in cross section, as best shown in Fig. 1, so that only the inner edge thereof engages the stack of units. Each front rail 49 is made with a pair of hub lugs 50 disposed between a pair of lugs 51 which project from the sides of the rear walls 47'. A pintle 52 extends through aligned holes in lugs 50 and 51 and provides the pivotal connection by which the front rail 49 is hinged to the back wall.

Each hub lug 50 of the front rail is provided with an ear 53 formed with a threaded hole within which is mounted an adjustable stop screw 54. The stop screws 54 engage the sides of the back walls 47' to hold the rail against pivotal movement in one direction on its pintle 52, while the stack of units 30 within the magazine prevents pivotal movement of said rail in the opposite direction. Thus the two front rails together with the back walls loosely confine the units of the stack so that they may move downwardly in the magazine by gravity. By adjusting the stop screws 54 the cross sectional area of the magazine may be varied to accommodate different sized filler units.

When the supply of filler units in the magazine which is at delivery station A is exhausted the operator withdraws the locking bolt 18 from its socket 17 and turns the ring 15 until another magazine comes into position at station A whereupon the locking bolt 18 snaps into another socket 17 and holds the rotatable magazine support in its new position. Thus, a filled magazine may quickly and readily be substituted for an empty one and while the empty magazine is out of working position it may be refilled with a fresh stack of filler units. The tapered end of the locking bolt 18 and the correspondingly tapered sockets 17 serve not only to hold the rotatable support in adjusted position but to justify and accurately true up its position with relation to the reciprocating feed slide.

While I have shown for the purpose of illustration a turret-like or rotatable magazine structure having four magazines it is to be understood that the invention is not limited to any particular number of magazines.

I claim:

1. Apparatus for holding, delivering and heat-conditioning shoe-bottom filler units comprising, in combination, a magazine for holding a stack of filler units, a heater adjacent the magazine and means to transfer the filler units individually from the magazine to the heater.

2. Apparatus for holding, delivering and heat-conditioning shoe-bottom filler units comprising, in combination, a magazine for holding a stack of filler units, a heater adjacent the magazine having a top surface constructed and adapted to serve as a slideway for the filler units, and means to slide individual units one at a time from the magazine on to the slideway surface of the heater.

3. Apparatus for holding, delivering and heat-conditioning shoe-bottom filler units comprising, in combination, a magazine for holding a stack of

filler units, a heater adjacent the magazine and a reciprocatory feed slide to shove the lowermost filler unit of said stack out of the magazine on to the heater.

5 4. Apparatus for holding, delivering and heat-
conditioning shoe-bottom filler units comprising,
in combination, a magazine for holding a stack
of filler units, a heater adjacent the magazine
having a top surface constructed and adapted to
10 serve as a slideway for the filler units, the bottom
of the magazine constituting substantially a con-
tinuation of the slideway surface of the heater
and means to slide the lowermost unit of said
stack out of the magazine on to the slideway
15 surface of the heater.

5. Apparatus for holding, delivering and heat-
conditioning shoe-bottom filler units comprising,
in combination, a magazine for holding a stack of
filler units, a heater adjacent the magazine hav-
20 ing a top surface constructed and adapted to
serve as a slideway for the filler units, the bottom
of the magazine constituting substantially a con-
tinuation of the slideway surface of the heater and
a reciprocatory feed slide to shove the lowermost
25 filler unit of said stack out of the magazine on to
the heater.

6. Apparatus for holding and delivering shoe-
bottom filler units comprising, in combination, a
number of magazines, each for holding a stack of
filler units, means connecting the magazines to-
30 gether whereby they may be moved in unison to
bring them successively to a delivery station, a
heater adjacent the delivery station, and means
to deliver the filler units individually to the heater
35 from that one of the several magazines which is
at the delivery station.

7. Apparatus for holding and delivering shoe-
bottom filler units comprising, in combination, a
number of magazines, each for holding a stack
of filler units, means connecting the magazines
40 together whereby they may be moved in unison to
bring them successively to a delivery station,
a heater adjacent the delivery station, means for
locking the magazines at the delivery station, and
45 means to deliver the filler units individually to
the heater from that one of the several magazines
which is at the delivery station.

8. Apparatus for holding and delivering shoe-
bottom filler units comprising, in combination, a
50 rotatable support, a number of magazines carried
by said support, each magazine adapted to hold
a stack of filler units, the support being rotatably
adjustable to bring the magazine successively to
a delivery station, a heater adjacent the delivery
55 station, and means to deliver the filler units in-
dividually to the heater from that one of the
several magazines which is at the delivery sta-
tion.

9. Apparatus for holding and delivering shoe-
bottom filler units comprising, in combination, a
60 rotatable support, a number of magazines carried
by said support, each magazine adapted to hold
a stack of filler units, the support being rotatably
adjustable to bring the magazines successively to
a delivery station, a heater adjacent the delivery
65 station, means for locking the support in its ad-

justed positions, and means to deliver the filler
units individually to the heater from that one of
the several magazines which is at the delivery
station.

10. Apparatus for holding and delivering shoe-
5 bottom filler units comprising, in combination, an
annular support, a number of magazines carried
by said annular support, each magazine adapted
to hold a stack of filler units, the annular sup-
port being rotatably adjustable to bring the
10 magazine successively to a delivery station, a
heater adjacent the delivery station, and a re-
ciprocatory feed slide operating from within the
annular support to deliver the filler units in-
dividually to the heater from that one of the
15 several magazines which is at the delivery station.

11. Apparatus for holding and delivering shoe-
bottom filler units comprising, in combination, an
annular support, a number of magazines carried
by said annular support, each magazine adapted
20 to hold a stack of filler units, the annular sup-
port being rotatably adjustable to bring the maga-
zines successively to a delivery station, a heater
adjacent the delivery station, means for locking
the support in its adjusted positions, and a re-
25 ciprocatory feed slide operating from within the
annular support to deliver the filler units in-
dividually to the heater from that one of the
several magazines which is at the delivery sta-
tion.

12. Apparatus for holding, delivering and heat-
conditioning shoe-bottom filler units comprising,
in combination, a rotatable support, a number of
magazines carried by said support, each magazine
35 adapted to hold a stack of filler units, the top side
of the support constituting the bottom of each
magazine, a heater adjacent the rotatable sup-
port having a top surface constituting substan-
tially a continuation of the bottom of each maga-
40 zine when the magazine is in delivery position, the
support being rotatably adjustable to bring the
magazines successively into delivery position op-
posite the heater, and a feed slide operable to
shove the lowermost filler unit from that one of
45 the magazines which is in delivery position onto
the heater.

13. Apparatus as claimed in claim 1 further
characterized in that said magazine comprises
an upright rear wall for engaging and guiding one
50 side of the stack of filler units arranged in the
magazine and an upright front wall for engaging
and guiding the other side of the stack of filler
units, said walls being relatively adjustable to-
ward and from each other to accommodate filler
55 units of different sizes.

14. Apparatus as claimed in claim 1 further
characterized in that said magazine comprises
an upright rear wall for engaging and guiding
one side of the stack of filler units arranged in
60 the magazine, a pair of upright rails for engag-
ing and guiding the other side of the stack of
filler units, said rails being adjustable toward
and from the rear wall, and adjustable stops for
limiting the movement of said rails away from
65 the rear wall.

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