

Nov. 15, 1927.

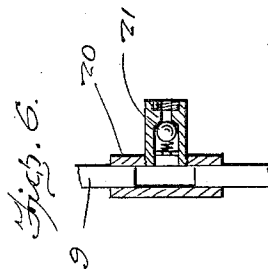
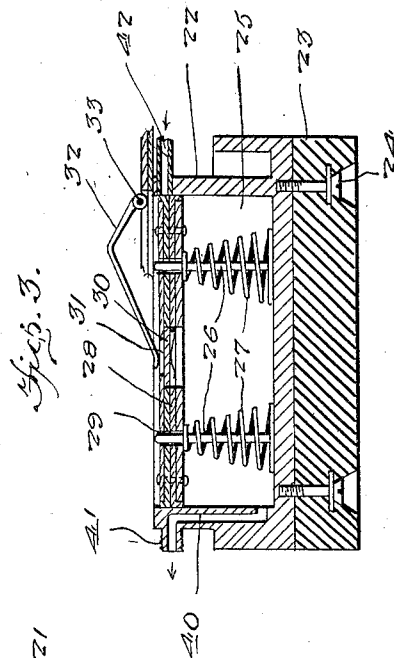
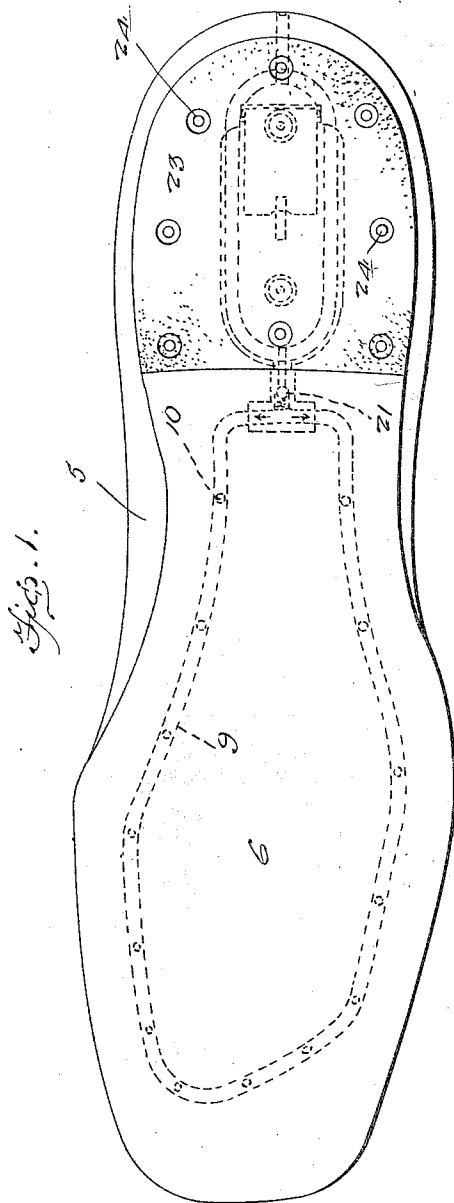
1,649,236

M. JURCSAK

AUTOMATIC FRESH AIR SHOE

Filed Sept. 27, 1926

2 Sheets-Sheet 1



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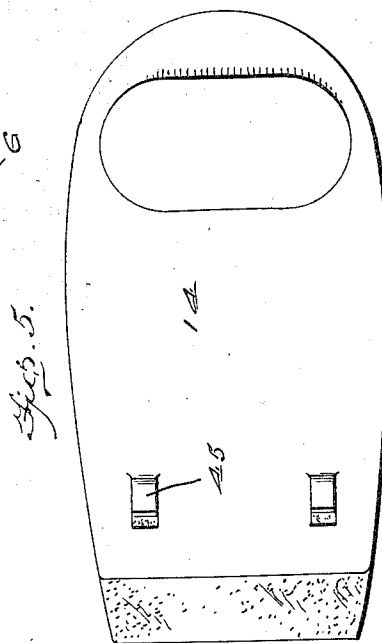
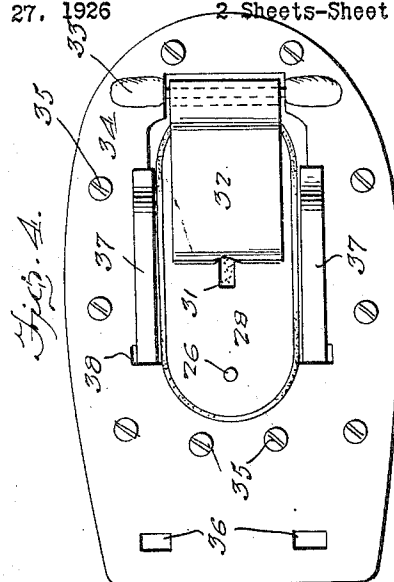
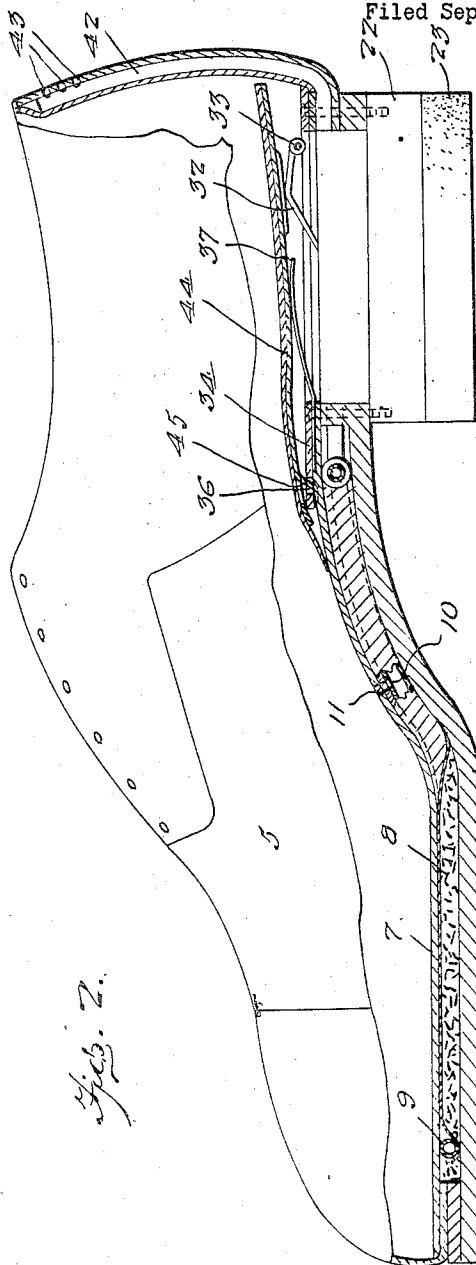
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M. JURCSAK

AUTOMATIC FRESH AIR SHOE

Filed Sept. 27, 1926

2 Sheets-Sheet 2



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UNITED STATES PATENT OFFICE.

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AUTOMATIC FRESH-AIR SHOE.

Application filed September 27, 1926. Serial No. 137,979.

The present invention relates to an improvement in shoes whereby fresh air may be delivered to the feet therein automatically when a person walks along.

5 An important object of the invention lies in the provision of an improved pump structure mounted in a shoe which will be operated by the walking of the person wearing the shoe for delivering fresh air to the foot
10 in the shoe.

Another very important object of the invention lies in the provision of an improved pump which is operated by the motion of a person's heel in the heel of the shoe.

15 A still further very important object of the invention lies in the provision of a structure of this nature which is simple, capable of being manufactured at a reasonably low cost, yet strong and durable, efficient and
20 reliable in operation, and otherwise well adapted for the purpose for which it is designed.

With the above and numerous other objects in view as will appear as the description proceeds, the invention resides in certain novel features of construction, and in the combination and arrangement of parts as will be hereinafter more fully described and claimed.

30 In the drawings:

Figure 1 is a bottom plan view of the shoe embodying the features of my invention,

Fig. 2 is a sectional side elevation thereof,

35 Fig. 3 is a detail longitudinal section through the heel of the shoe,

Fig. 4 is a top plan view of the heel,

Fig. 5 is a bottom plan view of the actuating plate,

40 Fig. 6 is a detail sectional view of the check valve in the distributing conductor.

Referring to the drawing in detail, it will be seen that the numeral 5 denotes the upper of the shoe which may be of any suitable or preferred formation. The numeral 6 denotes the usual outer sole and the numeral
45 7 the usual inner sole. Between the inner and outer soles there is mounted the usual cork material 8. The numeral 9 denotes a flexible conductor which is arranged about the cork material 8 between the soles 6 and 7 as is indicated to advantage in dotted lines in Fig. 1 and at predetermined points is provided with openings 10 registering with openings 11 in the inner sole 7. The ends
50 of the continuous flexible conductor are en-

gaged in a coupler 12 with which is connected a check valve 21.

My improved heel includes a casting 22 preferably of some light metal such as aluminum and has fixed to the bottom surface thereof an ordinary rubber heel 23 by means of screws 24. The improved heel 22 is formed with the well 25 from the bottom of which rise a pair of rods 26 having cone-shaped spiral springs 27 disposed thereabout. A plunger 28 moves up and down in the well 25 and has apertures 29 for receiving the guide rods 26. The springs 27 normally hold the plunger upwardly in the position shown in Figure 3. A spring
60 pressed clapper valve 30 is normally closed over the opening 31 in the center portion of the plunger 28. An angular plate 32 is hinged in the shoe at one end as at 33 and the free end engages the plunger 28. It is
65 preferable to hinge this plate 32 on a cap plate 34 engaged with the heel through screws 35 and having its forward end provided with slots 36. Springs 37 of release type have their forward ends held in place
70 by passing through openings 38 in the plate 34 so as to terminate between this plate 34 and a portion of the insole 8 adjacent the heel as is clearly illustrated in Fig. 2. A
75 passage 40 is formed in the heel 22 leading from the bottom of the well 25 to a threaded nipple 41 at the forward upper portion of the heel 22 for engaging with the check valve 21. The rear of the upper is provided with a conduit 42 having breather openings 43
80 at the upper end thereof and communicating with the heel 22 at the upper rear portion thereof. An actuating heel plate 44 is provided with tabs 45 adjacent its forward end which extend through the slots 36 and
85 this actuating heel plate rests on the springs 37 and the angular hinged plate 32. It will thus be seen that as the person walks with this shoe and places the heel on the ground and his weight on the actuating plate 45, this
90 causes the bending of springs 35 and the swinging of hinged plates 32 so as to depress the plunger 28 and thereby force the air in the well 25 through the conduit or passage 40, through the check valve 21,
95 through the coupling 20 into the flexible conductor 9 and out through the openings 11 to cool the foot in the shoe. As the person goes on his toes, the weight is released from the actuating plate 44 and so
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the springs 37 will lift this plate and allow the springs 27 to raise the plunger 28 so that the flat valve 30 will open to allow air from the passage 42 to rush in through the opening 31 into the well 25. It will thus be seen that continuous puffs of air are delivered to the foot in the shoe as a person walks along.

The present embodiment of the invention has been disclosed in detail merely by way of example since in actual practice it attains the features of advantage enumerated as desirable in the statement of the invention and the above description. It will be apparent that numerous changes in the details of construction, and in the combination and arrangement of parts may be resorted to without departing from the spirit or scope of the invention as hereinafter claimed or sacrificing any of its advantages.

Having thus described my invention, what I claim as new is:

1. A shoe of the class described including a heel having a well, a plunger slidable in the well, spring means for normally holding the plunger normally raised in the well, a spring pressed flat valve associated with an opening in the plunger, said heel having a passage leading from the bottom of the well to the top of the heel, a hollow conductor connected with said passage and leading to the interior of the shoe, and means for operating said plunger.

2. A shoe of the class described including a heel having a well, a plunger slidable in the well, spring means for normally holding the plunger normally raised in the well, a spring pressed flat valve associated with an opening in the plunger, said heel having a passage leading from the bottom of the well to the top of the heel, a hollow conductor

connected with said passage and leading to the interior of the shoe, a hingedly mounted plate having its free end engaged with the plunger, and an actuating plate hingedly mounted in the shoe at the heel thereof over the first mentioned hingedly mounted plate.

3. In combination, a shoe provided with a well, a valved plunger slidable in the well, means normally holding the plunger raised in the well, said shoe having a passage leading from the bottom of the well to the interior of the shoe, and means for operating said plunger.

4. In combination, a shoe provided with a well, a valved plunger slidable in the well, means normally holding the plunger raised in the well, said shoe having a passage leading from the bottom of the well to the interior of the shoe, an operating plate hingedly mounted in the shoe over the well, an actuating plate having one end secured in the shoe and the other end resting over the first-mentioned plate, and springs associated with the second plate for normally holding it raised.

5. A shoe of the class described, including a heel having a well, a plunger slidable in the well, spring means for normally holding the plunger raised in the well, a spring pressed slot valve associated with an opening in the plunger, said heel having a passage leading from the bottom of the well to the interior of the shoe, a hingedly mounted plate having its spring ends engaged with the plunger, an actuating plate hingedly mounted in the shoe at the heel thereof over the first-mentioned hingedly mounted plate, and springs under the actuating plate normally holding the same raised.

In testimony whereof I affix my signature.

MICHAEL JURCSAK.