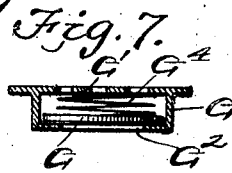
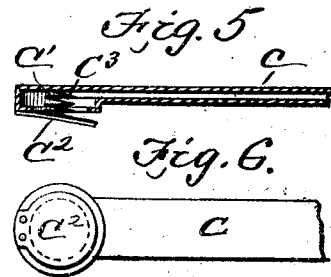
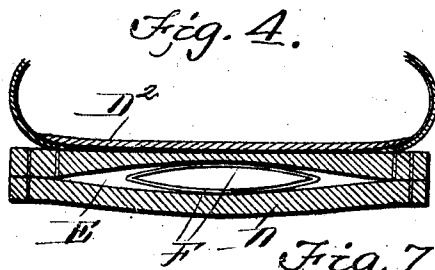
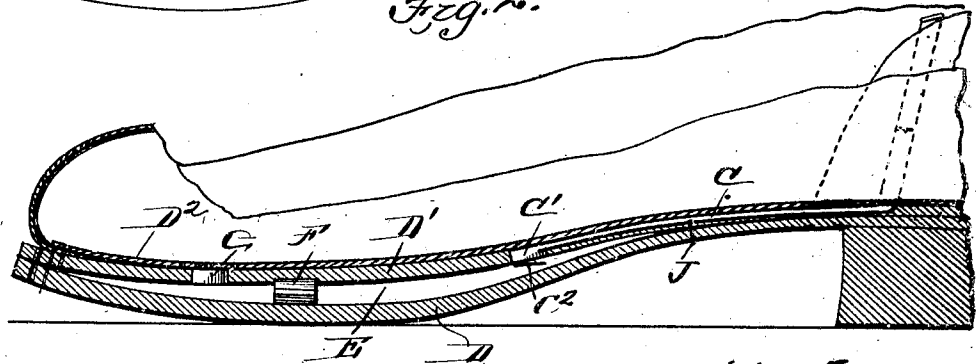
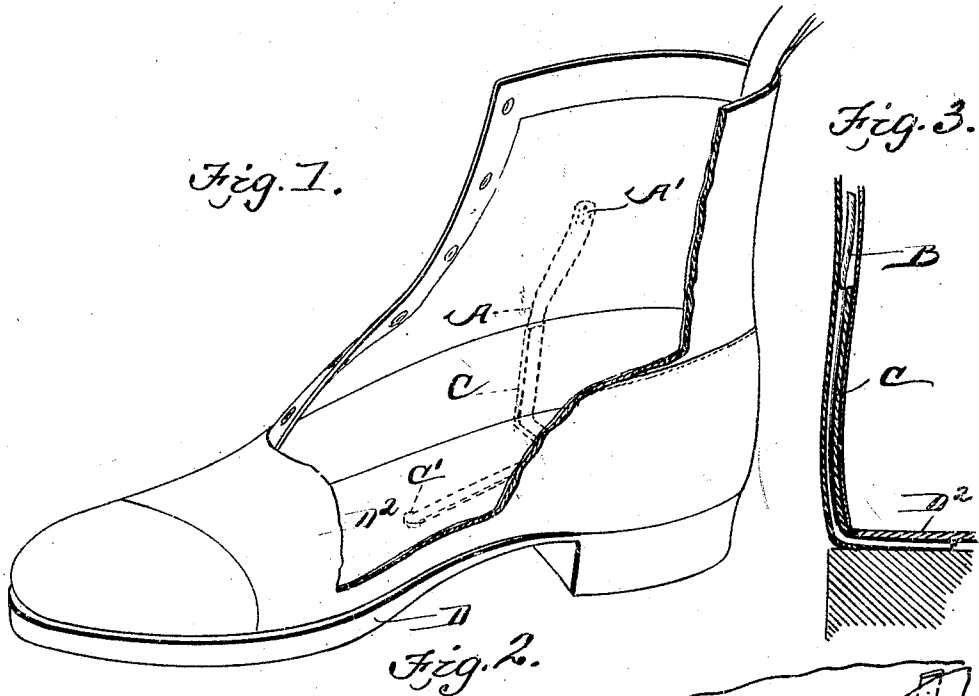


No. 890,966

PATENTED JUNE 16, 1908.

F. A. CRITZ, JR.
SHOE.

APPLICATION FILED JUNE 21, 1906.



WITNESSES

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SHOE.

No. 890,966.

Specification of Letters Patent.

Patented June 16, 1908.

Application filed June 21, 1906. Serial No. 322,778.

To all whom it may concern:

Be it known that I, FRANK A. CRITZ, JR., a citizen of the United States, residing at West Point, in the county of Clay and State of Mississippi, have invented a new and useful Improvement in Shoes, of which the following is a specification.

This invention relates to a shoe and especially to means for ventilating a shoe, and to means for preventing back pressure through the ventilating tube in the act of walking.

This invention consists of the novel features of construction hereinafter fully described, pointed out in the claims and shown in the accompanying drawings, in which:

Figure 1 is a perspective view of a shoe having an upper partially cut out to show the interior, certain ventilating tubes being shown in dotted lines. Fig. 2 is a longitudinal section through the insole. Fig. 3 is a vertical section through the rear portion of the upper, the heel being partially shown in section. Fig. 4 is a transverse view through the sole, a portion of the vamp being shown. Fig. 5 is a detailed sectional view illustrating the construction of the ventilating tube and a valve. Fig. 6 is an inverted plan view of the portion shown in section in Fig. 5, and Fig. 7 is a detailed sectional view through a valve casing showing a spring pressed valve in elevation.

The shoe upper A does not differ from the usual form of upper with the exception that it is provided with a flexible tube B which extends downwardly between the upper and its inner lining and which at its lower end is connected to a middle tube C which is arranged within the foxing which tube passes in under the heel portion of the insole and is carried forwardly along the longitudinal center of the shoe to a point immediately in advance of the instep where it is provided with an annular enlargement C', having a hinged bottom C², which bottom acts as a check valve and is controlled by a spring C³. Beneath the bottom and middle soles D and D', respectively is formed an air chamber E and the spring F, is arranged in said chamber immediately beneath the ball of the foot and said spring being arranged transversely with respect to the shoe and adapted to hold the soles D and D' apart when the weight of the foot is not pressed upon the forward portion of the shoe, that is, when the foot is off the ground or when the weight is thrown upon the heel. Under the toe portion of the shoe

an opening is formed in the middle sole D', and in the insole D², and in this opening is fitted a flanged valve casing G, provided with a perforated top G' which top is flush with the insole D², and the casing is provided with a valve seat G², at the bottom upon which rests an upwardly opening check valve G³, normally held to its seat by a spring G⁴.

The tube A before mentioned opens inwardly at its upper end through the upper lining and in the ankle portion of the shoe said lining being more or less porous or provided with a plurality of small openings as shown at A'. An air tight seam J, is run transversely across the shoe in the rear of the valve C².

The operation of the invention as above described is as follows: The air occupying the space around the ankle and upper part of the foot enters the flexible tube A through the opening A', and passes downwardly through the middle conduit C and is discharged from the forward end of the same into the chamber E and passes upwardly through the valve casing G and perforated toe G', into the toe end of the shoe. This circulation of air is automatically established in the act of walking for as the weight of the foot is thrown from the heel upon the ball of the foot the spring F is compressed and the air chamber E more or less diminished in size, and the air therein being prevented from passing back into the tube C by reason of the check valve C², lifts the valve G³, and is forced upwardly into the shoe. When the foot is lifted and the weight is thrown back upon the heel, the spring F expands and the air chamber E is restored to its normal size, but as the check valve G³, does not permit a return passage of the air from within the shoe through the valve casing G, a vacuum is partially formed in the chamber E and the valve C², is opened and air turned into the chamber E, through the tube A and conduit C and is again expelled through the casing G when the chamber E is again compressed.

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

A combination with a shoe having an air chamber formed between the bottom and middle soles, a flexible tube extending downwardly between the upper and the inner lining of the shoe, a tube arranged within the foxing and passing under the heel portion of the insole and carried forwardly along the

longitudinal center of the shoe to a point adjacent the instep, said tube being enlarged at its inner end, a spring pressed valve forming a bottom for said enlargement, a check valve
5 controlling communication between the toe portion of the shoe and the chamber between the bottom and middle soles, and means ar-

ranged within said chamber between the two valves for preventing collapse of the chamber.

FRANK ARCHELOUS CRITZ, JR.

Witnesses:

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