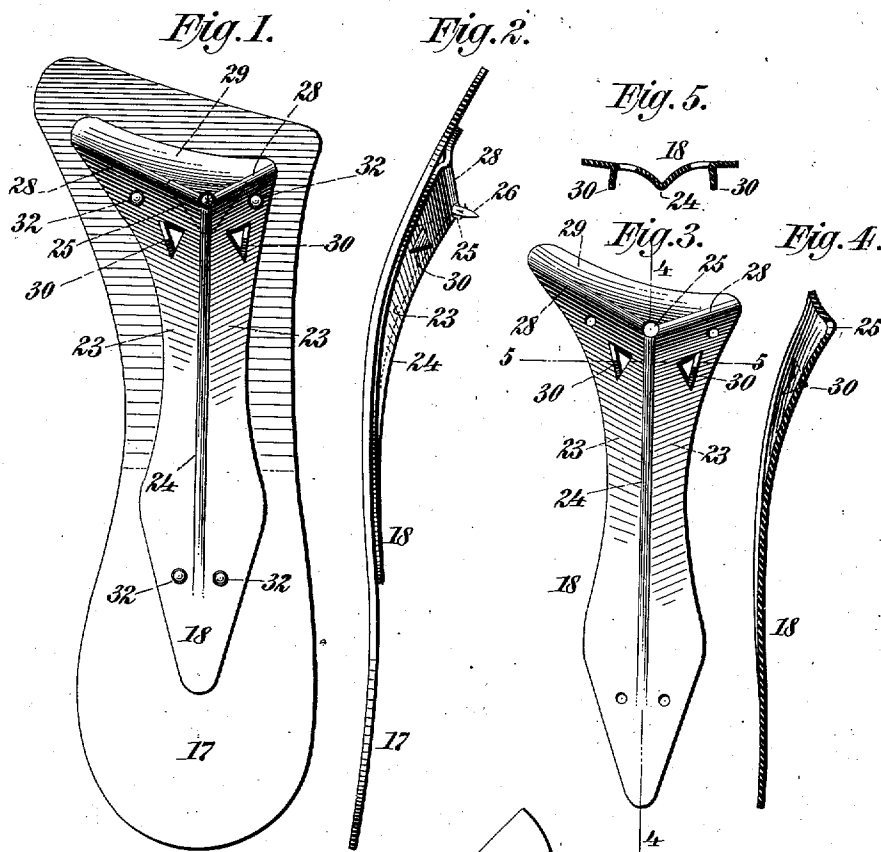
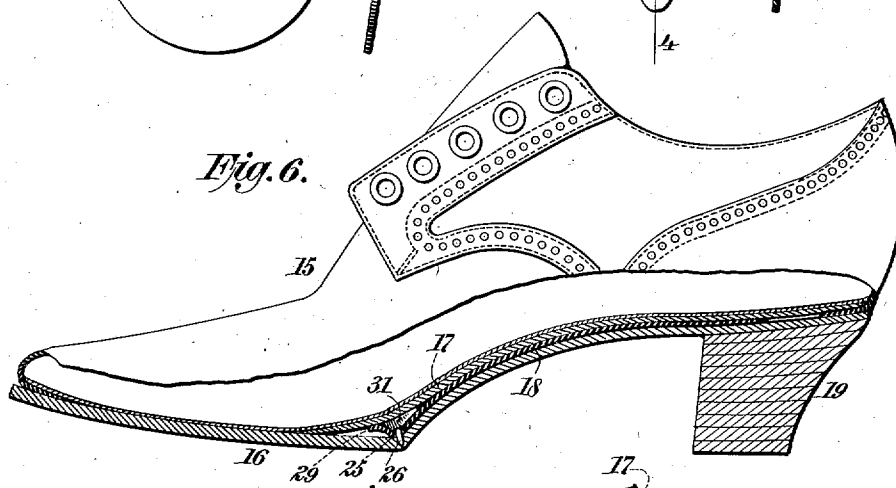


No. 874,396.

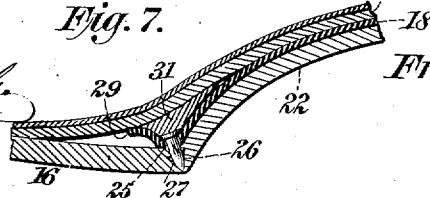
PATENTED DEC. 24, 1907.

F. G. DELBON.
MANUFACTURE OF SHOES.
APPLICATION FILED NOV. 20, 1906.

2 SHEETS—SHEET 1.



WITNESSES:
Gustave Dietrich
Edwin H. Dietrich



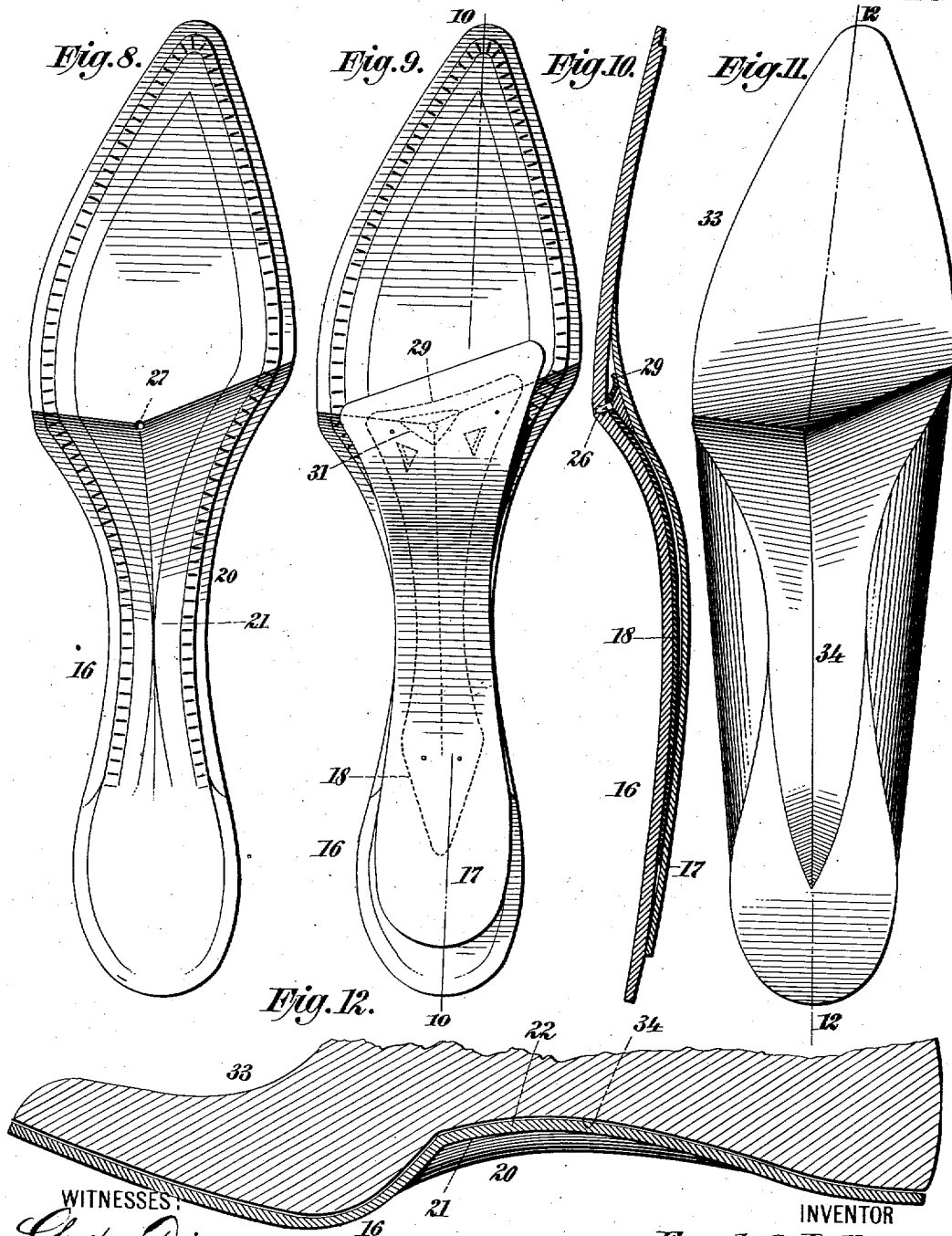
INVENTOR
Frank G. Delbon
BY *Chas. C. Gill*
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WITNESSES:
Gustav Friedrich
Edwin H. Britton

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UNITED STATES PATENT OFFICE.

FRANK G. DELBON, OF BROOKLYN, NEW YORK, ASSIGNOR TO HYGIENIC SHOE SHANK COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

MANUFACTURE OF SHOES.

No. 874,396.

Specification of Letters Patent.

Patented Dec. 24, 1907.

Application filed November 20, 1906. Serial No. 344,212.

To all whom it may concern:

Be it known that I, FRANK G. DELBON, a citizen of the United States, and a resident of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in the Manufacture of Shoes, of which the following is a specification.

The invention relates to the manufacture of shoes, and pertains more especially but not exclusively to means adapted for the manufacture of "turn-shoes" of "cottage-roof" style.

Various difficulties have been encountered in the manufacture of turn-shoes of high-heel cottage-roof character, and among these it may be mentioned that it has been practically impossible heretofore, to equip a shoe of this kind with a shank-stiffener capable of adequately supporting the arch of the foot and preserving the proper lines in the shoe, in consequence of which the shoes have not been durable or lasting and have been incapable of retaining their original shape. The manual labor incident to the formation and preservation of the cottage-roof in the sole of a turn-shoe has also been a source of considerable expense. In accordance with my invention it is entirely convenient and practicable to produce a turn-shoe of the cottage-roof style and equip the same with a shank-stiffener of unyielding material extending from the heel to the tread of the sole.

My invention, as claimed herein, resides in the novel features connected with and present in the shank-stiffener, the inner sole carrying the same, and the outer sole adapted to receive said stiffener and be firmly secured thereto and which outer sole is pressed or molded into cottage-roof style before being applied to the last, the cottage-roof formation being thereby permanently set in the sole and capable of being preserved therein.

In utilizing my invention, the sole of the shoe is molded or pressed into the cottage-roof form and, for the first lasting, is applied to a special last which is recessed to receive the roof formation of the sole, the wearing or outer side of the sole being placed against the sole of the last. The recess in the last preserves the cottage-roof formation of the sole during the lasting, and upon the last being withdrawn and the shoe turned the roof formation appears on the outer side of the sole, while within the shoe the sole presents an

elongated recess extending entirely along the shank thereof and created by said roof formation. Within the said recess in the inner side of the sole I apply the shank-stiffener, which is of steel and carried by a piece of leather or short insole covering the heel and shank portion of the main sole, said stiffener extending from the heel portion to the tread of the sole. The second lasting or that after the shoe has been turned, will be performed in the usual way and on the customary form of last.

The invention will be fully understood from the detailed description hereinafter presented, reference being had to the accompanying drawings, in which:

Figure 1 is an elevation of the shank-stiffener and the short inner sole by which it is carried; Fig. 2 is an edge view of same; Fig. 3 is a detached bottom view of the shank-stiffener; Fig. 4 is a central longitudinal section of same on the dotted line 4—4 of Fig. 3; Fig. 5 is a transverse section of same on the dotted line 5—5 of Fig. 3; Fig. 6 is a side elevation, partly broken away and partly in section, of a completed shoe embodying the features of my invention; Fig. 7 is an enlarged longitudinal section of a portion of same; Fig. 8 is an elevation of the inner side of the pressed or molded cottage-roof sole; Fig. 9 is a like view of same with the shank-stiffener and short inner sole which carries the same applied thereto; Fig. 10 is a longitudinal section of same on the dotted line 10—10 of Fig. 9; Fig. 11 is a bottom view of the recessed last which during the first lasting of the shoe, while it is inside out, preserves the cottage-roof formation of the sole, and Fig. 12 is a central vertical longitudinal section, partly broken away, of the last with the sole applied thereto, the outer or wear side of the sole being against the last with its cottage-roof formation pressed into the recess formed in the last to receive it.

In the drawings, 15 designates the upper of the shoe, 16 the cottage-roof sole, 17 the short inner sole to which the shank-stiffener 18 is secured and which carries the same, and 19 the heel, said upper and heel being of usual character.

The sole 16 is distinctive in that it is pressed or molded, as a separate step in my process of manufacture, with the cottage-roof formation 20, which thus becomes perma-

nently set, creating the elongated V-shaped recess 21 (Fig. 8) extending along the inner side of the arch or shank of the sole and a corresponding ridge 22 (Fig. 12) along the outer side of the like part of said sole. The recess 21 increases in width as it approaches the tread of the sole (Fig. 8) and terminates at the inner end thereof.

The shank-stiffener 18 is of pressed steel and conforms as nearly as may be to the V-recess 21 formed in the sole 16, said stiffener having downwardly converging sides 23 to seat within said recess and form a ridge 24 which terminates at the point 25, whereat said stiffener is provided with a pin 26 adapted to enter a very close fitting hole 27 in the sole 16. The forward end of the stiffener 18 is broadened and formed with the sharp angular ridges 28 diverging from the terminus 25 of the main ridge 24 and forming between them a section 29 which is curved upwardly (Figs. 6 and 7) so as not to press upon the sole 16 and to increase the strength and unyielding character of the stiffener and allow the ridges to engage the inner edges of the tread of said sole and define the end of the cottage-roof formation and also to resist the downward pressure exerted by the wearer upon the arch of the sole. The heel end of the stiffener 18 is flat so as to lie upon the shoe-heel 19. The forward portion of the stiffener 18 has lips 30 cut in it and these lips are bent downwardly to form darts which are pressed into the sole 16 and cooperate with the pin 26 in securing the stiffener to said sole and maintaining the stiffener in proper position. Within the recess formed at the inner side of the forward end of the stiffener 18 by the junction of the ridges 24, 28 I place a filler 31, which in addition to serving as a filler furnishes a backing for the pin 26 and prevents the latter during the use of the shoe from being driven upwardly to the discomfort of the wearer.

The stiffener 18 is secured to the short inner sole 17 by means of pins 32, said inner sole amply covering the top of said stiffener and being adapted to the sole 16. The stiffener 18 by being secured to the inner sole 17 holds the latter in proper shape and the two parts may be handled as one. The pin 26 and integral darts 30 serve to firmly maintain the stiffener 18 and inner sole 17 in proper position upon the main sole 16, and when the inner sole, stiffener and main sole are secured together the shoe structure becomes very firm and durable and capable of maintaining its shape. The stiffener 18 itself forms an inflexible support affording comfort to the wearer and being of great advantage to the shoe.

A feature of novelty in the stiffener 18 is the substantially triangularly shaped section 29 turned upwardly and cooperating in form-

ing the outwardly diverging angular ridges 28, which strengthen the forward portion of the stiffener and engage the inner end edge of the tread of the sole 16, while the section 29 is removed from contact with said sole and is prevented from creating a wear-spot below it in said sole. The stiffener 18 increases in depth along the ridge 24 from its upper end to the point 25 and ridges 28, as shown in Figs. 2, 3 and 4, thereby producing an arch effect along said ridge 24 and a construction of great resisting power.

The upper 15 and sole 16, in the manufacture of turn-shoes, are first lasted while inside out, and this lasting is performed on the last 33, which is formed with the elongated V-shaped recess 34 in the arch portion of its sole or lower surface to receive the cottage-roof formation 20 of the sole 16 and preserve the same during the lasting operation. The sole 16 is applied to the last 33 with its outer or wear-side placed against said last, and in thus applying said sole the cottage-roof formation 20 will be pressed closely within the recess 34 of said last, as shown in Fig. 12. During the lasting of the shoe while inside out on the last 33, the recess 34 preserves the cottage-roof formation in the sole 16 and in so doing prevents the same from becoming broken down or flattened out, which is a feature of very great importance. After the lasting on the last 33 has been completed, the last will be withdrawn and the shoe turned in the usual manner, the exterior surface of the cottage-roof formation then appearing on the outer side of the shoe and the elongated recess 21 formed thereby being positioned on the inner side of the shoe to receive the shank-stiffener 18, the latter being applied to said recess and secured by the pin 26 and darts 30 and covered by the inner sole 17. The second lasting of the shoe is performed with the shoe applied upon the usual form of last and in the customary way.

The shoe as finished has an unyielding shank and a very flexible tread, which is an ideal construction for the shoe, and in addition the shoe has a permanent cottage-roof formation which adds to its attractiveness.

The features of my invention are very well adapted to the manufacture of turn-shoes, as will be understood from the foregoing explanation, and in this regard are of special importance. I do not however limit the invention to use in connection with turn-shoes, since it is also suited for use in welt-shoes.

The novel features described in this application and which under existing rules it may not be permissible to claim herein are to be made the subject of one or more separate applications for Letters-Patent.

What I claim as my invention and desire to secure by Letters-Patent, is:—

1. A metal shank-stiffener of a length to

extend from above the heel to the inner end of the tread of the sole of a shoe and formed with downwardly converging sides 23 creating a longitudinal angular ridge 24 and with
 5 a broadened forward end having angular ridges 28 extending from the ridge 24 and an upwardly curved section 29 intermediate said ridges 28 and extending upwardly and forwardly therefrom; substantially as set
 10 forth.

2. A metal shank-stiffener for shoes adapted to extend from the heel to the inner end of the tread of the sole and formed with downwardly converging sides creating a longitudinal angular ridge 24 and with a broad-
 15 ened forward end having ridges 28 extending from the ridge 24, and a pin at the junction of said ridges 24, 28 adapted to enter the main sole; substantially as set forth.

20 3. A metal shank-stiffener for shoes adapted to extend from the heel to the inner end of the tread of the sole and formed with downwardly converging sides creating a longitudinal angular ridge 24 and with a broad-

ened forward end having ridges 28 extending 24
 from the ridge 24, a pin at the junction of said ridges 24, 28 to enter the sole, and a filler within the recess formed at the inner side of the stiffener above said pin; substantially as set forth. 30

4. A metal shank-stiffener of a length to extend from above the heel to the inner end of the tread of the sole of a shoe and formed with downwardly converging sides and a broadened forward end having an upwardly 35 and forwardly curved section 29, and a short stiff inner sole 17 fastened thereto and covering and extending beyond the edges of the same and adapted to the surfaces of the main sole surrounding said metal stiffener; 4 substantially as set forth.

Signed at New York city, in the county of New York and State of New York, this 17th day of November, A. D. 1906.

FRANK G. DELBON.

Witnesses:

CHAS. C. GILL,
 ARTHUR MARION.