F. A. NOLAN.

RUBBER SOLE.

APPLICATION FILED AUG. 2, 1917.

1,298,551.

Patented Mar. 25, 1919.

Fig. 2

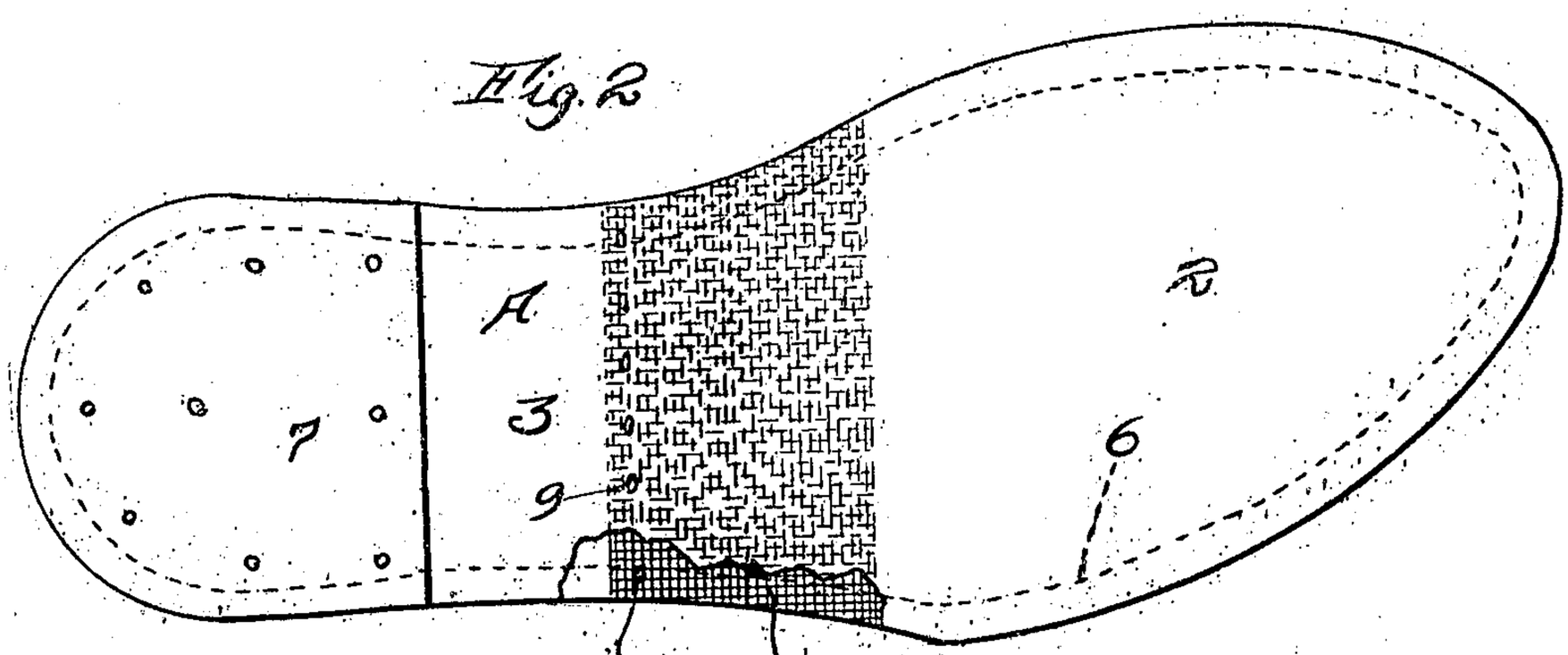

Fig. 1.

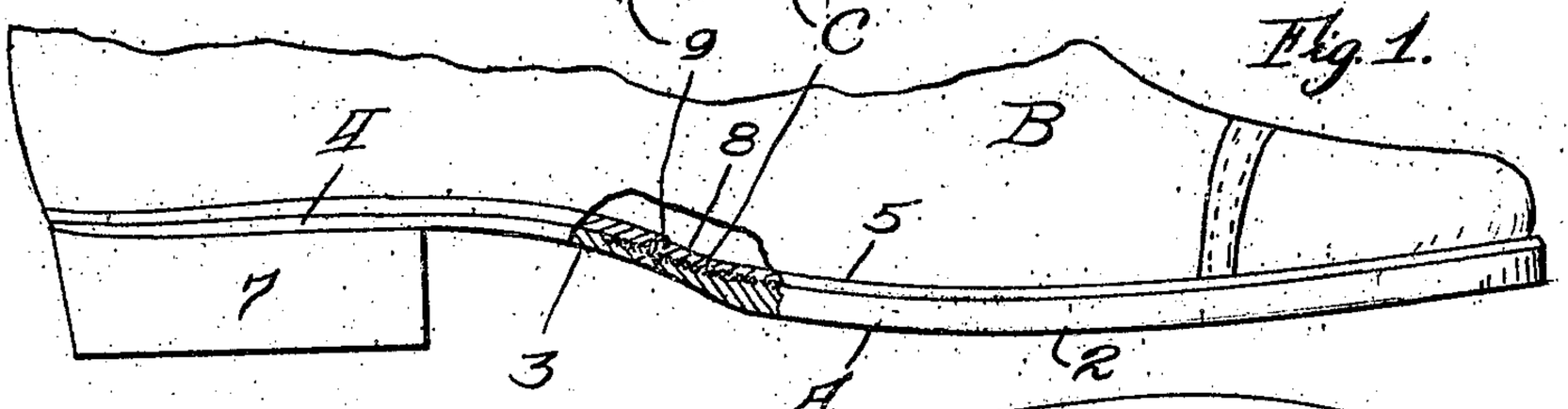

Fig. 4

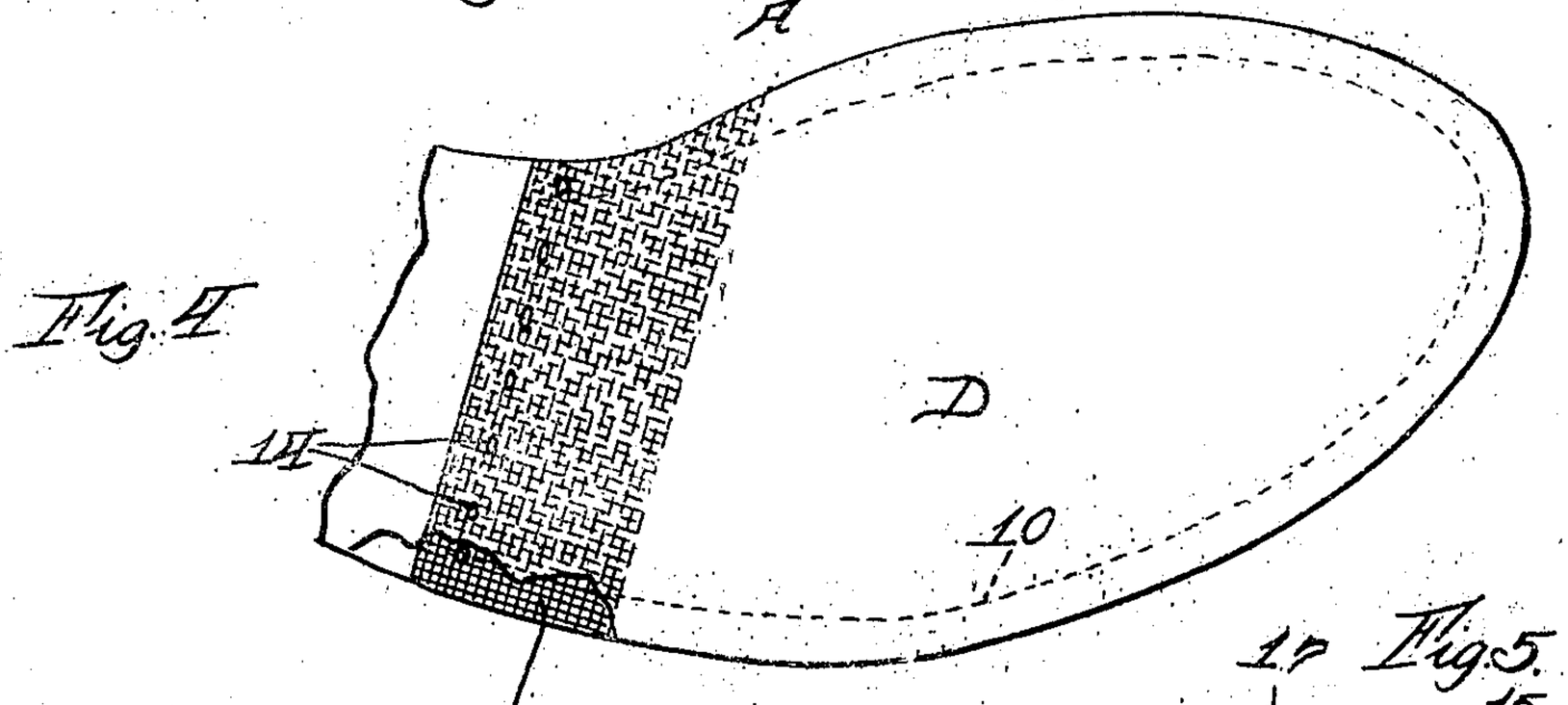

Fig. 5.

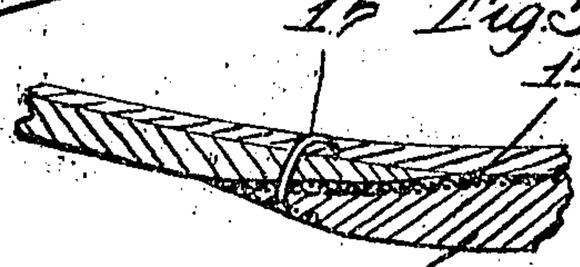

Fig. 3

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UNITED STATES PATENT OFFICE.

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RUBBER SOLE.

1,298,551. Specification of Letters Patent. Patented Mar. 25, 1919.

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To all whom it may concern:

Be it known that I, FRANCIS A. NOLAN, a citizen of the United States, residing at St. Paul, in the county of Ramsey and State of Minnesota, have invented a new and useful Improvement in Rubber Soles, of which the following is a specification.

This invention relates to certain new and useful improvements in rubber soles, for boots, shoes or other footwear, and more particularly relates to a new article of manufacture, which is especially designed for permanent attachment to said footwear in a ready and efficient manner at the expenditure of little manual effort and without sacrificing strength or rigidity at any point throughout its several dimensions. Heretofore soles of the type mentioned, namely rubber or other elastic soles have been reduced or made thinner throughout their entire shanks than the tread portions, in order to enable them to be more easily attached and fitted to the arch of the shoe, but this particular formation has been found objectionable due to lessened support at this point of the shoe and a consequent increased tendency to break or crack. An object of this invention is to reinforce that portion of the shank which is most likely to break or crack and to so fasten the shank portion of the sole, that full strength and rigidity are maintained without any danger of the sole cracking. Other and further objects and advantages will be apparent from the following description.

In the accompanying drawing forming part of this specification, Figure 1 is a side elevation of a detail of a shoe equipped with my improved sole, a portion being broken away and in section for the purpose of more clearly illustrating my improvement; Fig. 2 is a bottom plan view of the structure shown in Fig. 1; Fig. 3 is a side elevation of a detail of a shoe showing my invention constructed as a half sole; Fig. 4 is a bottom plan of the structure shown in Fig. 3; and Fig. 5 is a section of a detail illustrating an alternative construction.

In the drawing, let A indicate a full length outsole constructed in accordance with my invention and made out of rubber or other suitable flexible elastic material. This sole has a flexible tread or foreportion 2, shank portion 3 and heel portion 4, said shank and heel portions being of less thickness than the tread portion. This sole is adapted to be secured to the welt 5 of the shoe such as B by a line of stitching 6 around the marginal portion of the sole, including the tread, shank and heel portions and the heel 7 is secured over the heel portion of the sole in the usual manner to the shoe.

It has been found in practice that the forward portion of the shank 3 of the sole usually cracks or breaks under the constant bending action of the shoe sole when in use, and to overcome this objection, a strip of webbing, canvas C or other suitable material is secured across the upper surface of the sole immediately above the contiguous portions of the tread and shank portions. This strip of fabric is secured by vulcanizing into the upper surface during the process of manufacturing the sole and produces a unitary part of the sole which reinforces its strength materially, so that the reinforced part of the sole will not crack or break under long continued hard use. The forward portion of the shank near the rearward edge of the strip of fabric C is secured to the insole 8 by a series of attaching nails 9, which are driven through the rubber and fabric portions of the whole sole and through the insole 8, the inner ends of the nails being upset or clenched to thus securely fasten the shank of the whole sole to the insole and assist the fabric in reinforcing the strength and supporting properties of the shank. The fabric prevents the nails from tearing loose from the whole sole.

My invention is equally applicable for use in connection with half soles. In Figs. 3 and 4 the half sole D which is made out of rubber or other suitable material is gradually reduced in thickness at its rearward end in the usual manner where it extends over the forward portion of the shank of the shoe, and the sole is secured by the line of stitching 10 to the welt 11. The inner surface of the rearward end of the half sole is provided with the reinforcing strip of fabric or webbing E, which is embedded or secured to the half sole by vulcanizing during the process of manufacturing the half sole out of rubber or other material. The reduced portion of the half sole which extends over the forward portion of the shank 12 of the shoe is secured to the shank and insole 13 by fastening nails 14, the heads of which are prevented from tearing loose from the half sole by the reinforcing element E as in the pre-

ferred construction. The inner ends of the nails are clenched through the insole and the strip of fabric or webbing serves to assist with the fastening nails in reinforcing the strength of the shank of the shoe and prevent the shank portion of the half sole from breaking or cracking by the bending action of the shoe.

In the construction illustrated in Fig. 5, the strip of fabric or web 15 overlaps the rearward reduced end of the half sole 16, so as to incase the rearward edge of the half sole. In securing the rearward edge of the half sole to the shank of the shoe, the fastening nails 17 are driven through both portions of the reinforcing material. In producing this structure, the plies of the fabric are vulcanized to the rubber half sole during the process of manufacturing the latter. When the invention is constructed in the form of a whole sole it can be cut in two between its ends across the reinforcing strip, the tread portion being adapted for use as a half sole and its rearward edge provided with my improvement.

By securing the reinforcing strip of webbing, canvas or other suitable material to the outer surface of the sole instead of embedding it in the material the manufacture of soles having means for accomplishing the results attained by my invention is reduced in cost and made easier.

In accordance with the patent statutes, I have described the principles of operation of my invention, together with the apparatus which I now consider to represent the best embodiment thereof, but I desire to have it understood that the construction shown is only illustrative, and that the invention can be carried out by other means and applied to uses other than those above set forth within the scope of the following claims.

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

1. An elastic shoe sole having tread and shank portions, part of the outer surface of said shank portion being surfaced with an exposed thin flexible strengthening strip vulcanized on the sole to prevent cracking and for engaging and holding fasteners, the surface of said strip substantially coinciding with the outer surface of said sole.

2. An elastic shoe sole having a tread formed with a shank of less thickness than the tread, the end of said shank being completely housed within an exposed strip of flexible reinforcing material vulcanized on its surface, adapted to act as fastener holding means.

3. A full length outsole having flexible fore-part and shank portions, the adjacent portions of said fore-part and shank portions being surfaced with an exposed flexible strengthening strip vulcanized thereto and adapted to be penetrated by fasteners and to act as a fastener holder.

In testimony whereof, I have signed my name to this specification.

FRANCIS A. NOLAN.