

No. 669,022.

Patented Feb. 26, 1901.

L. A. CASGRAIN.

BOOT OR SHOE.

(Application filed May 25, 1900.)

(No Model.)

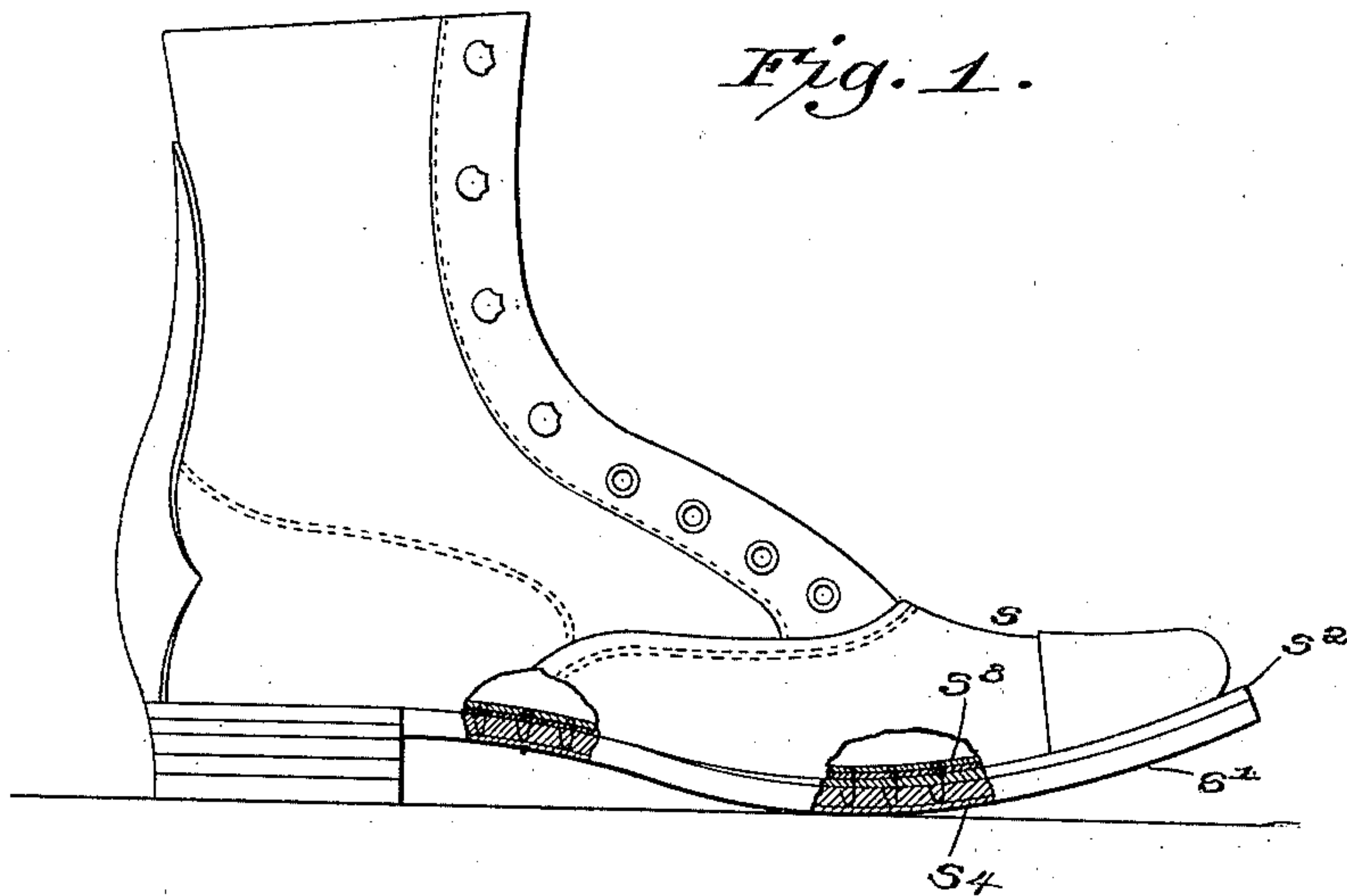


Fig. 2.

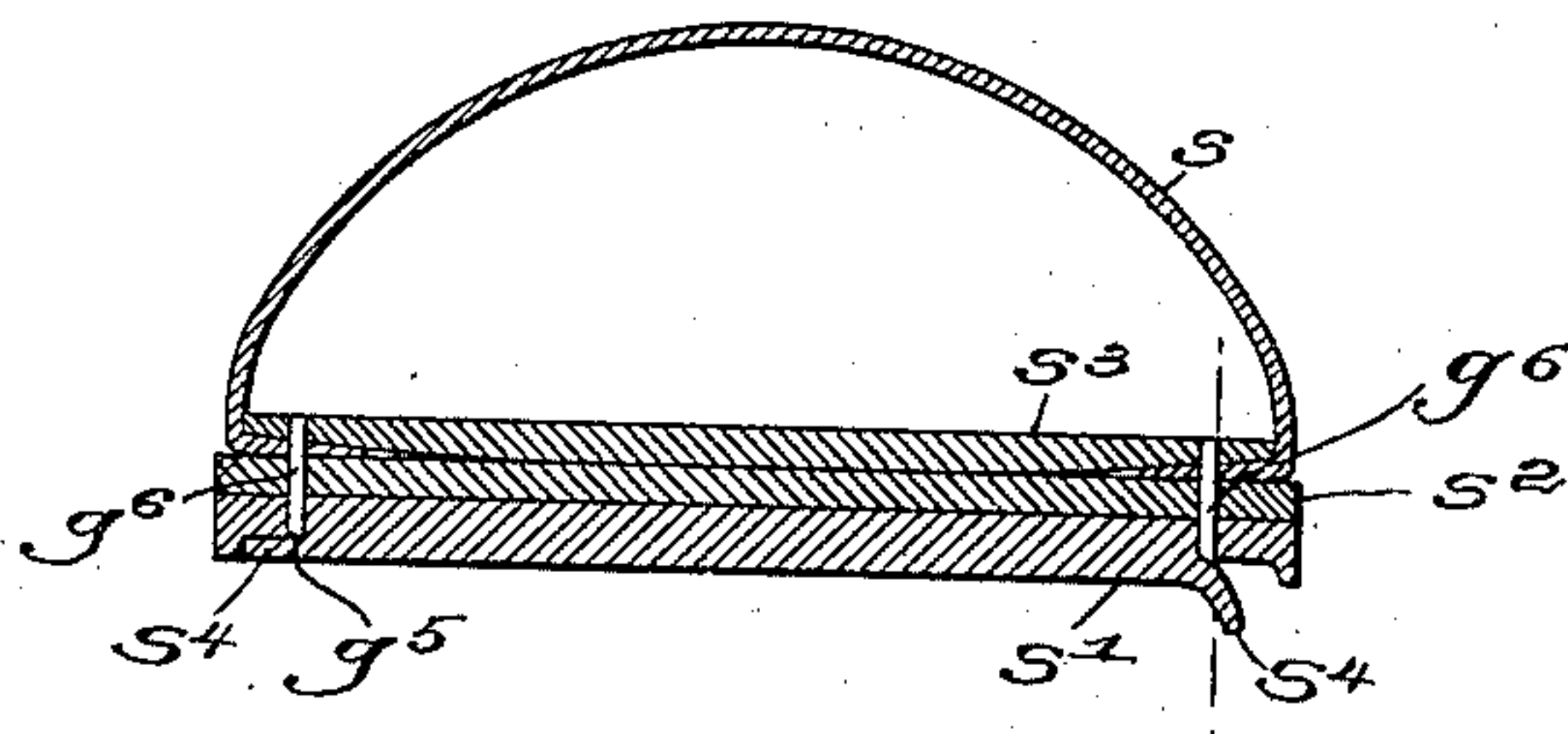


Fig. 4.

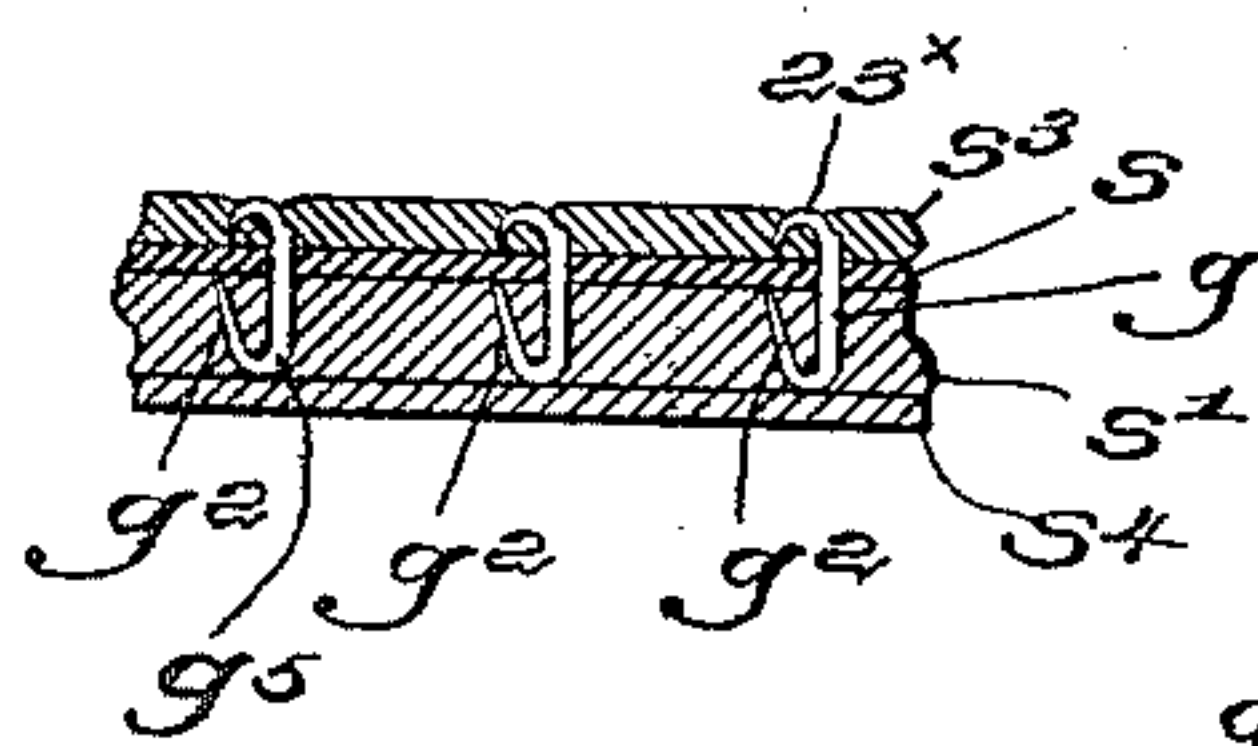


Fig. 5.

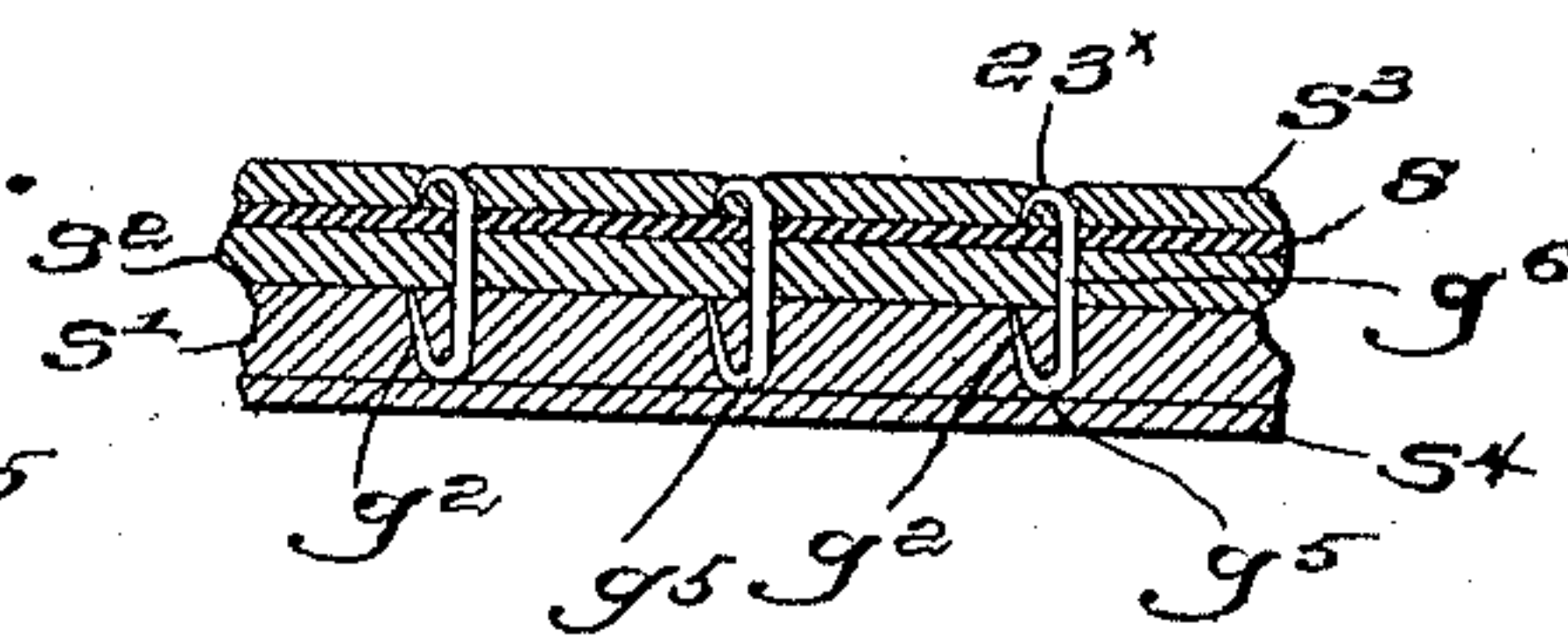
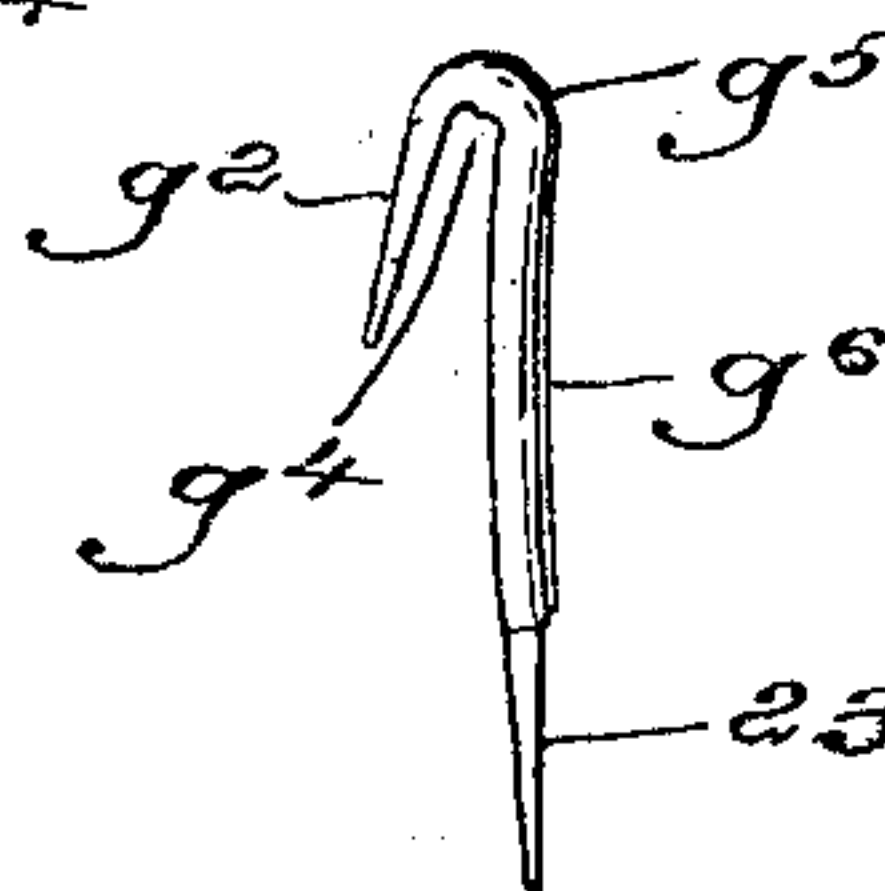


Fig. 3.



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Att'y's.

UNITED STATES PATENT OFFICE.

LOUIS A. CASGRAIN, OF WINCHESTER, MASSACHUSETTS, ASSIGNOR TO
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BOOT OR SHOE.

SPECIFICATION forming part of Letters Patent No. 669,022, dated February 26, 1901.

Application filed May 25, 1900. Serial No. 17,939. (No model.)

To all whom it may concern:

Be it known that I, LOUIS A. CASGRAIN, a citizen of the United States, residing at Winchester, in the county of Middlesex and State of Massachusetts, have invented an Improved Boot or Shoe, of which the following description, in connection with the accompanying drawings, is a specification, like characters on the drawings representing like parts.

10 Heretofore in the production of boots and shoes the outer sole has been united to the inner sole and upper by stitches, by wooden pegs or metallic fastenings, or by staples presenting two legs of equal length extended
15 entirely through the said soles and upper. Uniting the soles on a sewing-machine adds materially to the cost of production of the boot or shoe and requires elaborate machinery, which must be handled by skilled operators,
20 and the stitches when worn off fail to properly hold the sole and upper together. Also when the soles are united on a sewing-machine which sews "through and through"—*i. e.*, which sews the outer sole directly to the
25 inner sole—the waxed thread in the channel in the outer sole where the channel-lip is laid down over the thread, and also the waxed thread is very objectionable on the inside of the shoe,
30 where it comes in contact with the foot. This latter objection is especially noticeable where breaks of the thread occur, causing lumps of thread and wax on the inner sole. Shoes the soles of which are united by pegs or metallic
35 fastenings such as heretofore common have their soles materially stiffened, chiefly on account of the comparatively large diameter and stiffness of the fastenings used. When staples are used to attach the soles, both legs
40 of the staples pass entirely through the outer and inner soles and are clenched in the inner sole, stiffening the soles, so that it is impossible to secure a flexible sole when staples are used. In my experiments I have aimed to
45 devise a shoe having its soles united by metallic fastenings without destroying the flexibility of the shoe, and I have accomplished this desirable result by employing in my new shoe a metallic fastening for the soles which
50 consists of a single strand of wire having a

shank passing through the inner sole and outer sole and having hooked portions at each end, which hooked portions are respectively forced into the inner sole and outer sole, making what may be called a "double clench." 55 By reason of this construction of fastening, in which but a single strand of wire is employed to bind together the outer sole and inner sole, a comparatively small wire may be used, as the soles are held firmly together, 60 primarily, because of the gripping action of the two hooks. By this improved construction the inner sole and outer sole of the shoe are very firmly attached and at the same time have much more flexibility than can be se- 65 cured by the use of any other metallic fastening. Hence this fastening may be used for uniting the soles of shoes in which metallic sole-fastenings have hitherto never been used. 70

In the drawings, Figure 1 in side elevation, partially broken out, represents my novel shoe having its sole attached by fastenings in accordance with my invention, the shoe being partially broken out to represent some 75 of the inserted fastenings. Fig. 2 is a cross-section of the shoe represented in Fig. 1, said Fig. 2 showing the fastenings inserted in the channel in the outer sole, the lip at one side of the shoe being in place to cover the heads 80 of the fastenings, the lip on the other side being opened. Fig. 3 is an enlarged view of the fastening which I use in making my novel shoe, said figure showing the fastening before it is inserted in the stock. Fig. 4 is an 85 enlarged view showing in section the shank of a shoe embodying my invention. Fig. 5 is a similar view showing a section of the fore part of such a shoe.

Referring to the drawings, s represents the 90 upper of a shoe, s' the outer sole, s^3 the inner sole, and s^2 a tap or slip sole. The outer sole is represented as provided with a channel formed by cutting into the sole, leaving the lip s^4 . 95

In order to introduce into the shoe the form of fastening which is characteristic of my invention—that is, a fastening which in the shoe has hook-shaped ends engaging the outer sole and inner sole, with a single strand of 100

wire connecting said ends—I find it convenient to employ a fastening which before it is inserted into the shoe has, as shown in Fig. 3, a shank or body g^6 , with a clenching end or point 23^x and a curved head g^5 , with a point g^2 depending from the head. In applying this fastening to the shoe I find it convenient to insert the shank of the fastening in the outer sole, preferably in a channel, force the shank through the outer sole, tap, or slip-sole, (if one is used,) upper, and inner sole. In the latter part of the movement of the shank through the stock the point g^2 , depending from the head, enters the outer sole, the fastening being completely driven, so that the stock completely fills the space between the shank of the fastening and the depending point of the head. As the point 23^x of the fastening emerges from the inner sole it is turned back or clenched into the inner sole, a portion of the inner sole being embraced between the point 23^x and the shank.

By reference to Figs. 1, 2, 4, and 5 it will be seen that my improved shoe has its outer sole secured to the inner sole by a fastening which has a hook-shaped end g^2 engaging the outer sole and a hook-shaped end 23^x engaging the inner sole, with a single strand of wire g^6 connecting said hook-shaped ends. The hook-shaped end g^2 embraces between itself and the shank of the fastening g^6 a portion of the leather of the outer sole, and the hook-shaped end 23^x embraces between itself and the shank g^6 a portion of the leather of the inner sole.

The fastenings used in attaching the sole of my novel shoe will preferably all be formed with the portions g^2 , which I have called the "depending point" of the head, all of the same length; but it is preferable to vary the length of the portions g^6 , which I have called the "shank" or "body" of the fastening, according to the thickness of the stock. Varying the lengths of the fastenings in this way will secure uniformity in the shapes and positions in the stock of the hook-shaped ends 23^x .

It is obvious that the advantages of uniting layers of leather or similar flexible material in the manner above described are not limited to boots or shoes, as layers of such stock not designed for use in boots or shoes may be advantageously secured together in this way where a combination of flexibility with great holding power is desired. My claims, therefore, are not all limited to boots or shoes, but are intended to cover the more general application of my invention.

The method of attaching soles of boots or shoes or uniting layers of material by means of the novel fastening herein shown has been made the subject-matter of application for United States Letters Patent, Serial No. 42,374, filed January 7, 1901, which application is a division from this application.

Having thus described my invention, what

I claim as new, and desire to secure by Letters Patent, is—

1. A boot or shoe having its outer sole attached by means of a fastening having a shank or body provided with a clenching-point turned backwardly into the stock and having a head with a depending point.

2. A boot or shoe having its outer sole and inner sole united by metallic fastenings having heads with depending points and shanks or bodies longer than the depending points, the ends of the shanks of the fastenings being turned backwardly into the inner sole.

3. A boot or shoe having its outer sole and inner sole united by metallic fastenings having heads with depending points and shanks or bodies longer than said depending points, the depending points being of uniform length, the shanks varying in length according to the thickness of the stock and having their ends turned backwardly into the stock.

4. A boot or shoe having its outer sole and inner sole united by metallic fastenings having heads with depending points of uniform length and shanks or bodies longer than said depending points and varying in length according to the thickness of the stock, the depending points of the heads entering the outer sole and the ends of the shanks being turned backwardly toward the depending points of the heads and clenched in the inner sole opposite to the depending points.

5. A boot or shoe having an outer sole and an inner sole united by metallic fastenings each presenting a shank or body having both ends turned backwardly with relation to the shank, one of said ends entering the outer sole from its outer side, the other of said ends entering the inner sole from its inner side, portions of the outer sole and of the inner sole respectively being embraced between each of said ends and the shank of the fastening and each of said ends terminating in the stock between the outer face of the outer sole and the inner face of the inner sole.

6. A boot or shoe having its outer sole attached by means of a fastening having a hook-shaped end entering the inner sole and a hook-shaped end entering the outer sole, with a single strand of wire connecting said ends.

7. The combination with two or more layers of leather or similar flexible material, of a metallic fastening uniting said layers of material and having a narrow hook-shaped end entering one side of the material and a narrow hook-shaped end entering the other side of the material, with a single strand of wire connecting said hook-shaped ends.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

LOUIS A. CASGRAIN.

Witnesses:

NELSON W. HOWARD,
EDWARD H. PALMER.