

March 17, 1936.

W. I. GILLETTE
MANUFACTURE OF SHOES

2,034,031

Filed Aug. 2, 1934

2 Sheets-Sheet 1

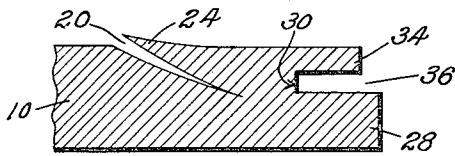


Fig. 1.

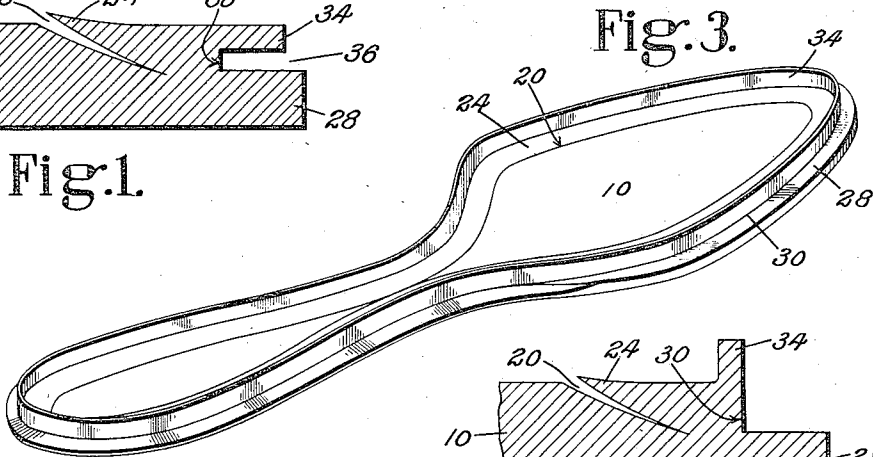


Fig. 3.

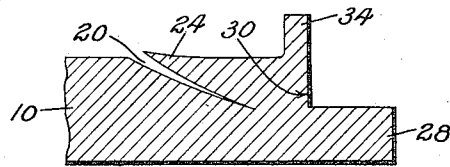


Fig. 2.

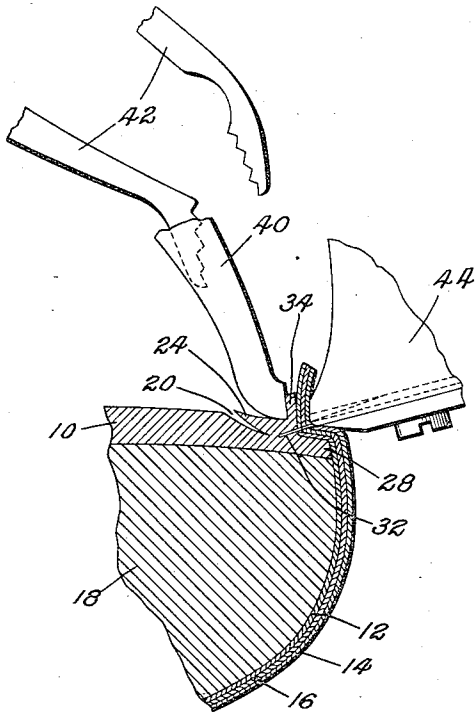


Fig. 4.

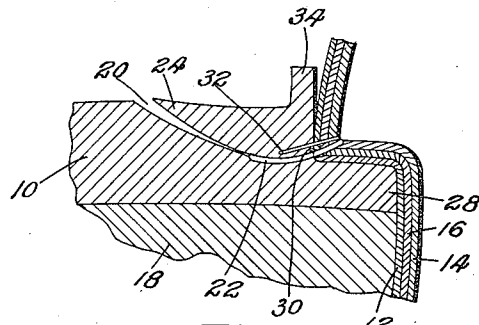


Fig. 5.

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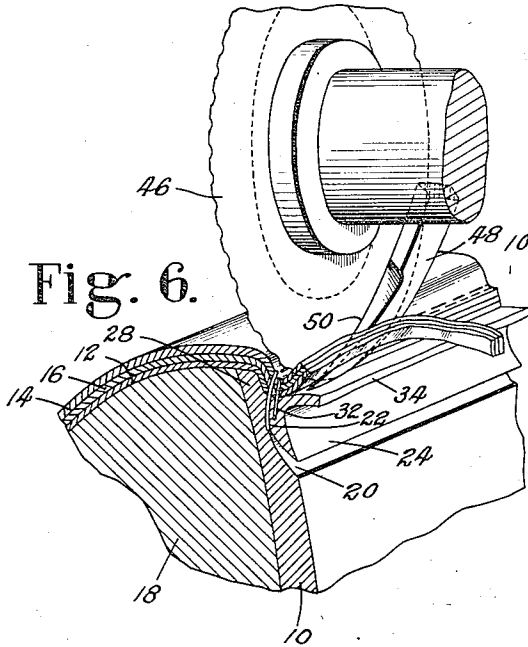


Fig. 6.

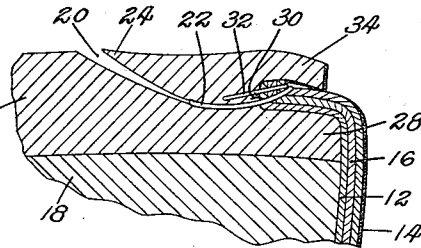


Fig. 7.

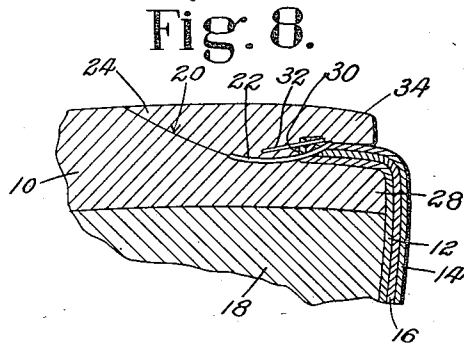


Fig. 8.

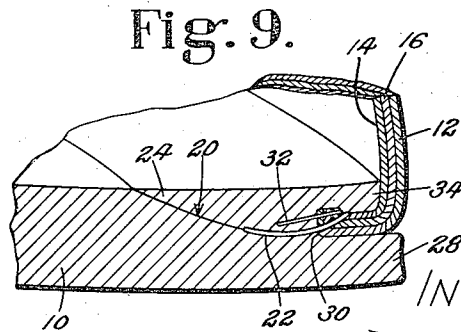


Fig. 9.

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UNITED STATES PATENT OFFICE

2,034,031

MANUFACTURE OF SHOES

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Application August 2, 1934, Serial No. 738,041

8 Claims. (Cl. 12—142)

This invention relates to improvements in the manufacture of turn shoes.

A turn shoe as customarily manufactured is provided with a single leather sole having on its flesh side a marginal sewing rib formed between an outside upper-attaching shoulder and an inside stitch-receiving channel and the upper materials are secured to the marginal shoulder by stitching which extends through the sewing rib. In a shoe thus constructed the trimmed margins of the upper materials are exposed around the inside of the shoe bottom and they form an unfinished marginal ridge which is unsightly in appearance and which is liable to cause discomfort to the wearer of the shoe.

In order to insure against the formation of any such undesirable ridge around the marginal portion of the inside of the shoe bottom, the present invention, in one aspect, provides an improved method of making turn shoes which involves the use of a sole provided with a marginal lip and a feather and with an upper-attaching shoulder between the lip and the feather and having a channel spaced inwardly from the shoulder in the lipped face of the sole and which comprises working an upper over such a sole on a last, securing the upper to the shoulder by stitches extending into the channel, trimming the upper close to the line of stitching, laying the lip to cover the stitches and conceal the trimmed edge of the upper, and finally removing the last and turning the shoe.

In lasting the upper of a turn shoe it has been a common practice heretofore to fasten the upper in lasted relation to the sole by means of tacks which are driven through the margin of the upper and into the body portion of the sole in directions toward that face of the sole which is outermost in the finished shoe. This practice, however, is objectionable inasmuch as it not infrequently happens that the lasting tacks are driven entirely through the sole with the result that when they are removed they leave tack holes which are likely to result in unsightly stains visible on the tread face of the sole.

For the purpose of avoiding such an undesirable condition the invention, in another aspect, seeks to do away with the employment of temporary lasting fastenings and contemplates securing the upper margins in overlasted relation to the sole by means of fastenings which are driven into the shoulder of the sole and are allowed to remain as permanent fastenings.

The invention further resides in an improved article of manufacture consisting of a turn shoe

embodying the features of construction herein-after described and claimed.

In the accompanying drawings,

Fig. 1 is a cross-sectional view, on an enlarged scale, of the marginal portion of a sole for a turn shoe showing how the sole is fitted for use in the practice of my invention;

Fig. 2 is a view similar to Fig. 1 but showing the outer marginal lip of the sole as it appears after it has been raised to facilitate the lasting of the upper materials over the feather of the sole;

Fig. 3 is a perspective view of the sole showing the outer lip in raised position;

Fig. 4 is a view illustrating the step of attaching the upper materials in the side lasting operation;

Fig. 5 is a fragmentary sectional view of the shoe as it appears after the upper materials have been stitched to the sole;

Fig. 6 is a fragmentary sectional view of the shoe illustrating the step of trimming the upper materials;

Fig. 7 is a fragmentary sectional view of the shoe showing particularly the appearance of the overlasted margins of the upper materials after they have been trimmed and the outer lip of the sole has been laid to cover the trimmed edges of the upper materials and to conceal the lasting fastenings and the stitches;

Fig. 8 is a view similar to Fig. 7 but illustrating the shoe as it appears after the outer lip of the sole has been smoothed or leveled; and

Fig. 9 is a fragmentary sectional view showing the shoe as it appears after it has been turned and relasted.

The turn shoe illustrated in the drawings comprises a sole 10 and an upper consisting of the usual upper leather 12, lining 14 and doubler 16. These parts are assembled wrong-side out upon a last 18 after which the lasting operation is performed, preferably first at the toe of the shoe, then along the sides, and finally at the heel end, the shoe herein shown being one of the sewed heel-seat type. For the toe lasting operation there may be advantageously employed a combined pulling-over and toe-lasting machine of the type disclosed in United States Letters Patent No. 1,280,613, granted October 1, 1918, upon application of Orrell A. Ashton, in which the upper is first subjected to a lengthwise pull and then wiped inwardly over the sole around the toe and secured in lasting position by tacks, the machine being so constructed that the tacks are

driven without any substantial danger of penetrating entirely through the sole.

As shown, the sole 10 is provided with an inside channel 20 to receive the stitching 22 whereby the upper is secured to the sole along the sides and around both ends of the shoe after the lasting operations have been performed, the channel 20 being formed with the usual lip 24 for covering and concealing the inner portions of the stitches. The illustrated sole 10 is provided also with the usual feather 28 and with a marginal shoulder 30 adjacent to the inner edge of the feather to which the upper is secured in lasted relation to the sole along the sides of the forepart and shank portions of the sole by lasting fastenings herein illustrated as comprising fine wire staples 32. For the purposes of the present invention the sole 10 is further provided with an integral marginal lip 34 which in its normal position extends outwardly beyond the shoulder 30 in substantially parallel relation to the feather 28 at the channeled side of the sole, the lip 34 being separated from the feather by means of an edge groove 36 (Fig. 1) the bottom or inner portion of which constitutes the shoulder 30. The lip 34 is herein shown as being somewhat narrower than the feather 28, the lip having been trimmed preferably during the operation of forming the edge groove 36 so that it will not extend beyond the edge of the second last and consequently will lie smoothly over the stitched and trimmed edge portion of the upper in the finished shoe. If desired, however, the trimming of the lip 34, instead of being performed as a stock fitting operation upon an unattached sole, may take place after the upper has been stitched to the insole and before the shoe has been turned. Further to prepare the sole 10 for the securing of an upper in lasted relation thereto the lip 34 is raised by any suitable means to a substantially upright position, as indicated in Figs. 2 and 3. Thereafter the sole is tacked to the bottom of the last in the customary manner.

So far as the present invention is concerned, the lasting of the upper along the sides of the shoe may be performed in any known or suitable manner. In the commercial practice of the present invention, as herein illustrated, this operation may advantageously be performed by a machine of the type disclosed in United States Letters Patent No. 1,796,451, granted March 17, 1931, upon application of George Goddu, the machine preferably, however, incorporating certain improvements disclosed in a pending application Serial No. 670,525, filed May 11, 1933, in the name of Oscar Lawson, whereby the machine is adapted to form staples having deflected ends arranged to follow curved paths in the work as the staples are driven so that the staples will anchor themselves in the work without the use of a clenching anvil.

In the use of a staple lasting machine such as that just referred to the shoe is presented by the operator in engagement with a work rest 40 (Fig. 4) and while thus positioned the upper is pulled heightwise of the last and inwardly over the toe by gripper members 42 and is then pressed inwardly against the shoulder 30 by a staple-guiding nozzle 44. After the upper has thus been pressed against the shoulder 30 a staple 32 is driven through the upper and into the substance of the sole between the shoulder 30 and the inside channel 20, the legs of the staple extending in directions approximately parallel to the faces of the sole and if the lasting machine is provided with the improved features disclosed in the co-

pending application above referred to, the staple legs being deflected away from each other in curved paths as the staple is driven so that the staple will anchor itself in the substance of the sole, it will be understood that in this side lasting operation the upper is worked successively in different locations along the sides of the shoe into lasted relation to the sole and is secured in lasted position in each location by means of a staple.

After the shoe has been lasted at the toe and at the sides, the heel end of the upper may be and preferably is shaped to the heel end of the last and its marginal portion wiped inwardly over the feather 28 of the sole and against the shoulder 30 in accordance with the method disclosed in United States Letters Patent No. 1,737,727, granted December 3, 1929, on application of Herman Newmann. A machine adapted for use in practicing the method disclosed in the above-mentioned Newmann patent is disclosed in United States Letters Patent No. 1,770,976, granted July 22, 1930, on application of Joseph Fausse.

After the heel end of the shoe has been shaped to the heel end of the last the upper is secured to the sole by a thread seam comprising the stitches 22 already referred to, which may be hand-sewed or made by a turn sewing machine of the usual type.

The upper materials including the upper leather 12, the lining 14 and the doubler 16 are then trimmed close to the staple fastenings 32 and the line of stitches 22.

This trimming operation may be accomplished by any suitable means herein conventionally shown as comprising a rotary cutting disk 46 and an arcuate blade 48 having a shearing edge 50 for cooperating with the edge of the rotary cutter 46, the blade 48 being constructed and arranged to extend between the upper materials and the lip 34 and thereby to separate the former from the latter and to prevent the lip from being injured during the trimming operation. In accordance with the usual practice in making turn shoes the lining 14 in the shank and heel portions of the shoe, instead of being lasted, sewed and trimmed as in the forepart of the shoe, may be left floating and untrimmed and finally laid over the inside of the sole before the turn shank piece is applied. After the upper materials have been trimmed at the forepart, and the upper leather and the doubler have been trimmed in the shank and heel portions of the shoe, the upstanding lip 34 is laid over the adjacent margins of the trimmed upper materials so as to cover the trimmed edges of the latter as well as to conceal the stitches and the lasting fastenings.

It is to be noted that the lasting fastenings and the stitches are inserted in such positions relatively to the shoulder 30 that the trimmed edges of the upper materials will be substantially in line with the top of the shoulder 30, so as to facilitate the laying of the lip with its upper surface substantially flush with the upper surface of the remaining portion of the sole. The lip may be laid by hand or by means of any suitable lip laying machine. If, as a result of the lip laying operation, the lip does not lie substantially flat, it may be pressed down or flattened out by means of a subsequent smoothing, pounding or leveling operation so that the lip will appear as shown in Fig. 8, there being no ridge where the lip overlies the trimmed edge portions of the upper material. Preferably, a coating of cement, such as rubber latex, will be applied to the overlapped upper margin includ-

ing the trimmed edges of the upper materials and to the inner or flesh side of the lip 34 before the lip is laid so that it will be securely and permanently held in the position in which it is shown in Fig. 8.

The lip 34 having been laid and cemented in place, the shoe is turned and relasted in the usual manner, the completed shoe appearing as indicated in Fig. 9. It will be seen that the lip 34 not only covers the trimmed edges of the upper materials and conceals the upper fastenings but it provides a smooth flat surface for engagement with the foot along the outer marginal portion of the shoe bottom and imparts a finished appearance to the inside of the shoe. It will also be noted that by trimming the overlapped margins of the upper materials close to the lines of the lasting fastenings and stitches, as described, it becomes practicable to form a narrower edge groove in the sole than would be required to receive the upper materials if, instead of being trimmed as described, they were permitted to extend a substantial distance beyond the stitches 22 or to be turned outwardly beneath the lip 34. By thus making a comparatively narrow edge groove in the sole for the reception of the upper materials it becomes practicable, without increasing the thickness of the sole, to produce a thicker and consequently a better wearing feather.

Inasmuch as the overlapped margins of the upper are customarily covered in the heel and shank portions of a turn shoe by means of the turn shank piece the lip 34 may be formed only around the forepart of the sole, the heel and shank portions being formed with the usual upper-attaching shoulder but no outer lip, or the lip 34 may be formed all around the sole as illustrated and subsequently trimmed off or cut away in the heel and shank portions. When no outer lip is utilized in the heel and shank portions of the shoe to cover the overlapped margins of the upper materials the latter may be trimmed at a substantial distance from the upper-attaching stitches, or they may be left untrimmed, inasmuch as they will be covered by the turn shank piece.

Having described my invention, what I claim as new and desire to secure by Letters Patent of the United States is:

1. That improvement in methods of making turn shoes which consists in working an upper over a last having a sole thereon, the sole being provided with a raised marginal lip and a feather and having a shoulder between the feather and the lip and having also a channel spaced inwardly from said shoulder in the lipped face of the sole and turning the marginal portion of the upper inwardly over the feather, securing the inturned upper margin to said shoulder by stitches extending into said channel, trimming the upper close to said stitches so that the trimmed edge will be substantially flush with the adjacent surface of the inturned upper margin, laying said lip to cover said stitches and conceal the trimmed edge of the upper, and finally removing the last and turning the shoe.

2. That improvement in methods of making turn shoes which consists in tensioning an upper over a last having a sole thereon, the sole having a raised marginal lip and a feather and being formed with a shoulder between the feather and the lip and with a channel in the lipped face of the sole spaced inwardly from said shoulder and turning the marginal portion of the upper

inwardly over the feather, securing the inturned upper margin to said shoulder by stitches extending into said channel, trimming the upper close to said stitches, laying said lip and cementing it to the trimmed edge and the adjacent surface of the inturned upper margin to cover the latter and conceal the stitches, and finally removing the last and turning the shoe.

3. That improvement in methods of making turn shoes which consists in tensioning an upper over a sole on a last, the sole having a raised marginal lip and a feather and having a shoulder between the feather and the lip and a channel spaced inwardly from said shoulder in the lipped face of the sole, securing the upper to said shoulder by stitches extending into said channel, trimming the upper close to said stitches about the forepart and along the shank of the insole, cutting away said lip along the shank, laying the lip at the forepart to cover and conceal the stitches and the trimmed edge of the upper, and finally removing the last and turning the shoe.

4. That improvement in methods of making turn shoes which consists in tensioning an upper over a sole on a last, the sole having a raised marginal lip and a feather and having a shoulder between the feather and the lip and a channel in the lipped face of the sole spaced inwardly from said shoulder and thereby forming a sewing rib between the channel and the shoulder, driving lasting fastenings through the upper and through said shoulder into the sewing rib to hold the upper in overlapped relation to the sole, stitching through the upper and through the sewing rib, trimming the upper close to the line of stitching, laying said lip to cover and conceal the trimmed edge of the upper and the stitching, and finally removing the last and turning the shoe.

5. That improvement in methods of making turn shoes which consists in assembling shoe materials wrong-side out upon a last, said materials comprising an upper and a sole having a feather and an outside lip and having also a shoulder between said lip and said feather, and an inside channel in the lipped face of the sole spaced inwardly from said lip and said shoulder, lasting the upper and securing its margin in overlapped relation to the sole by fastenings inserted in said shoulder, stitching the upper to the substance of the sole between said shoulder and said channel, trimming the upper close to the line of stitching, cementing said outer lip to the trimmed edge of the upper materials to cover them and conceal the stitches, and finally removing the last and turning the shoe.

6. A turn shoe comprising a sole having an edge groove and an inner channel formed in the inner or foot-engaging face of the sole and having a feather and a marginal shoulder adjacent to the inner edge of the feather, an upper having its marginal portion turned inwardly over said feather and secured to said shoulder by stitches extending into said channel and having a trimmed edge close to the line of stitching substantially flush with the adjacent surface of the inturned upper margin, and a lip integral with the sole and covering and concealing the stitching and the trimmed edge and adjacent inturned surface of the upper.

7. A turn shoe comprising a sole having an edge groove and an inner channel formed in the inner or foot-engaging face of the sole and having a feather and a marginal shoulder adjacent to the inner edge of the feather, an upper se-

5 cured to said shoulder by stitches extending into said channel and trimmed close to the line of stitching, and a lip integral with the sole cemented to the trimmed edge and adjacent marginal surface of the inside of the upper and covering and concealing the latter and the outer portions of the stitches.

10 8. A turn shoe comprising a sole having a marginal lip and a feather and having a shoulder between the feather and the lip and a channel in the lipped face of the sole spaced inwardly from

said shoulder and thereby forming a sewing rib between the channel and the shoulder, and an upper secured to the sole by lasting fastenings extending through said shoulder and into the sewing rib and by stitches extending through said rib and into said channel, the margin of the upper being trimmed close to said stitches and said lip overlying and concealing the outer portions of said stitches and the trimmed edge of the upper.

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