

No. 781,236.

PATENTED JAN. 31, 1905.

C. C. SMALL.

TOP LIFT.

APPLICATION FILED OCT. 24, 1903.

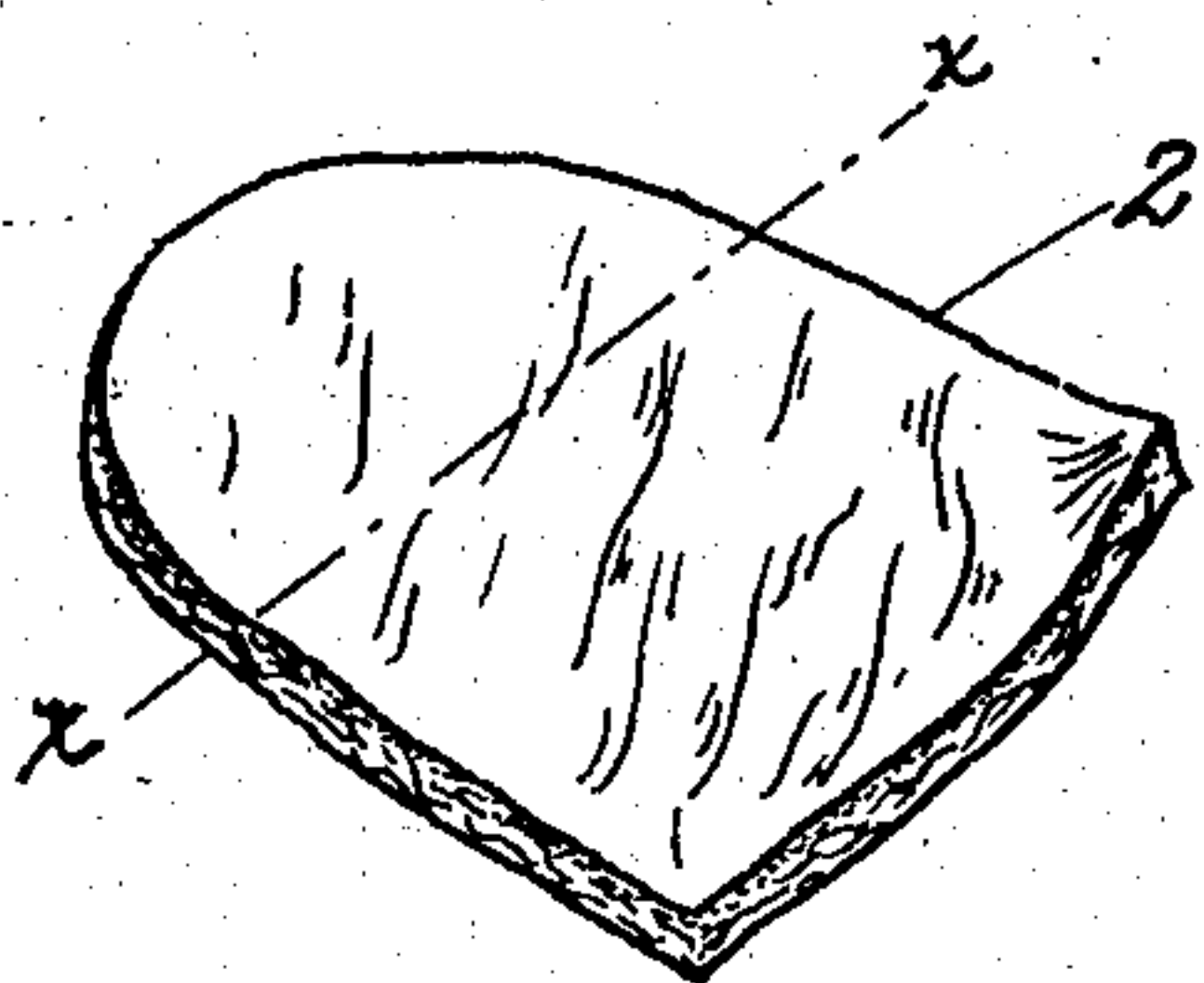


Fig. 1.

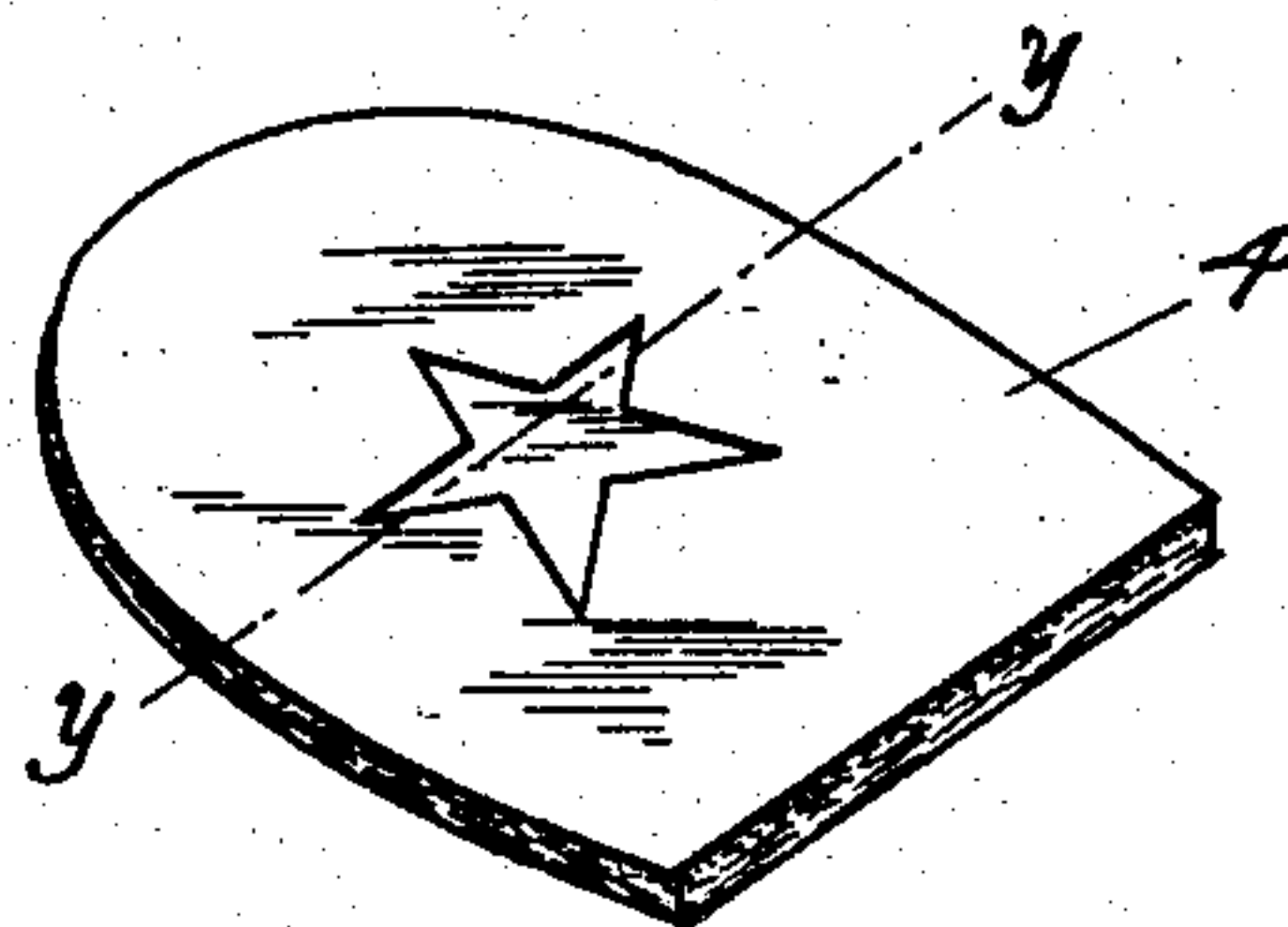


Fig. 3.

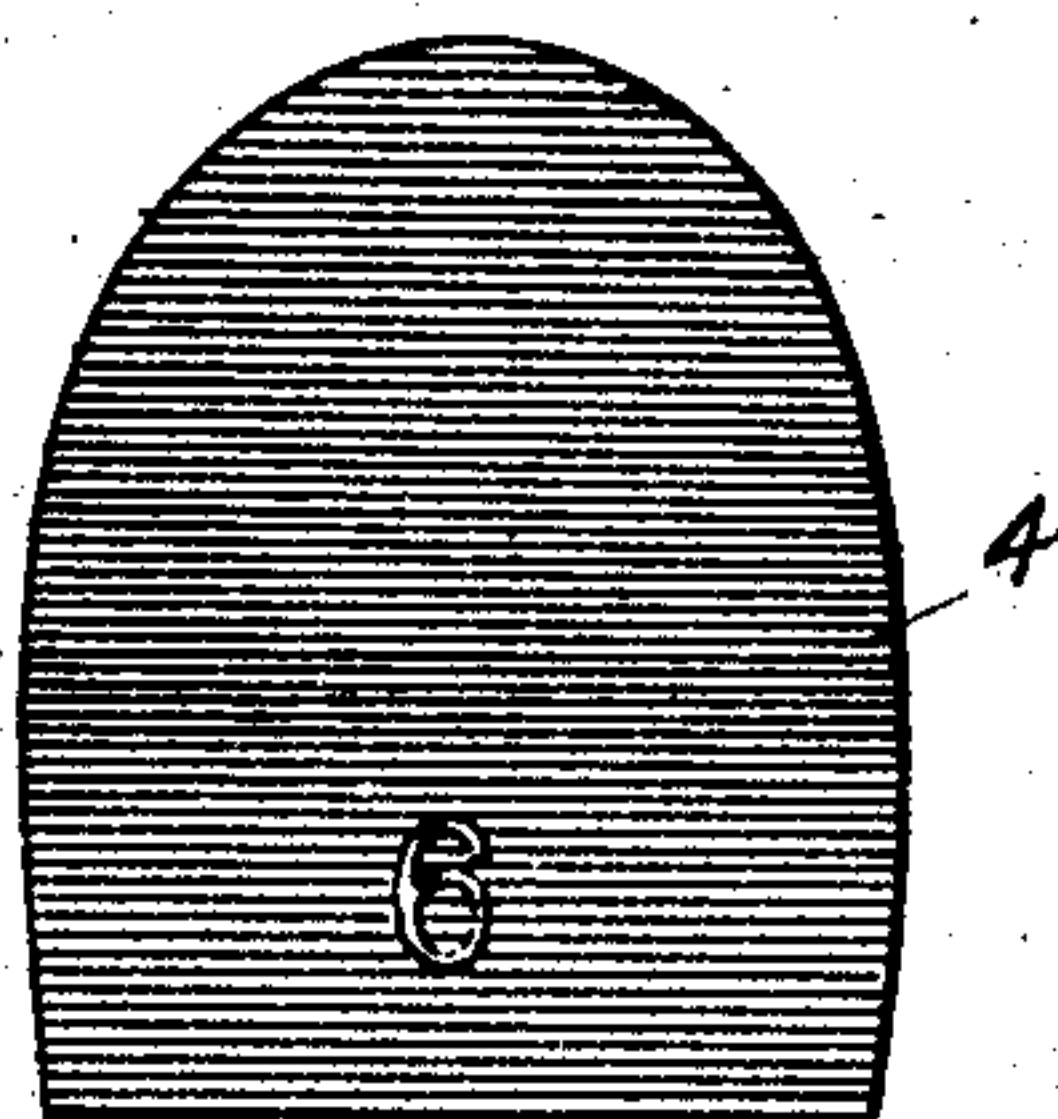


Fig. 5.



Fig. 2.



Fig. 4.

WITNESSES.

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CHESTER C. SMALL, OF NEWTON HIGHLANDS, MASSACHUSETTS, ASSIGNOR
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TOP LIFT.

SPECIFICATION forming part of Letters Patent No. 781,236, dated January 31, 1905.

Application filed October 24, 1903. Serial No. 178,437.

To all whom it may concern:

Be it known that I, CHESTER C. SMALL, a citizen of the United States, residing at Newton Highlands, in the county of Middlesex and Commonwealth of Massachusetts, have invented certain Improvements in Top Lifts, of which the following description, in connection with the accompanying drawings, is a specification, like reference characters on the drawings indicating like parts in the several figures.

This invention relates to top lifts used in the manufacture of boots and shoes.

The top lift is one of the parts of a shoe which is subjected to the greatest wear, and it has heretofore been the practice to make top lifts of only good grades of leather which will resist wear and which will take a good finish. Such leather is expensive on account of the large percentage of poor leather in a hide, this poor leather usually being soft, spongy, and wrinkled and of little or no value for top lifts.

I have discovered that a top lift which has been compressed and condensed by great pressure is firm and hard and not readily affected by wear and in appearance is superior to a top lift which has not been compressed and condensed. Moreover, a compressed top lift made of wrinkled and spongy leather looks much better than and will wear as well as an uncompressed top lift made of a much better grade of leather, for the compression of the top lift smoothes out the wrinkles and forces the fibers of the leather closely together, thereby making the top lift very dense and hard.

A compressed top lift also has many other advantages. For example, it is level and of uniform thickness and its edges are hard, regular, and even.

In the drawings, Figure 1 is a perspective view of an uncompressed top lift. Fig. 2 is a section on line *xx* of Fig. 1. Fig. 3 is a perspective view of a top lift after it has been compressed. Fig. 4 is a section on line *yy* of Fig. 3, and Fig. 5 is a bottom plan view of the compressed top lift shown in Fig. 3.

Referring to the drawings, Figs. 1 and 2 show a top lift 2 cut from a poor grade of

leather, in which the fibers are loose and the grain side of the leather is full of wrinkles. The looseness of the fibers makes the leather soft and spongy, so that it will not withstand wear, and the wrinkles in the leather are so deep that the grain of the leather would very likely be cut through in the operation of buffing the top lift to obliterate the wrinkles, thus spoiling the finish of the top lift.

The top lift is so crooked and warped that there is great danger of its not being properly handled by the machine used for attaching the heel and top lift to the shoe, and the edges of the top lift are irregular and uneven. Such irregularity and unevenness in the edges of the top lift affect the shape of the heel, as it is the practice to use the edges of the top lift as a guide when presenting the heel to the knives of the heel-trimming machine. Consequently any irregularity or unevenness in the edges of the top lift causes the heel to be trimmed unevenly. Another disadvantage of such a top lift when used on a compressed heel is that the stain used in finishing the heel and top lift will soak into the edges of the top lift more than into the edges of the heel, so that after they have both been polished the edges of the top lift will not have the same luster as the edges of the heel. Still another disadvantage of an ordinary top lift is that when made of oak-tanned leather, which in other respects is well adapted for top lifts, the edges will feather or roughen up as soon as the top lift has been subjected to wear, and this has caused some manufacturers to abandon the use of such leather for top lifts.

In Figs. 3 and 4 I have shown my improved top lift, which is formed by compressing with great pressure a top-lift blank—such, for example, as is shown in Figs. 1 and 2. The compression of the top lift is preferably effected by the dies of a powerful compressing-machine which exert pressure positively and directly upon the top lift itself and not through any yielding substance or material, this pressure being exerted upon the top lift in all of its dimensions and compressing and condensing the top lift. A machine which may be

adapted for this purpose by the substitution of suitable dies is shown in United States Letters Patent No. 776,787, granted December 6, 1904. It will be seen that the fibers of the leather in the compressed top lift are very close together and that the top lift is very dense and firm. Such a top lift will wear much longer than an uncompressed top lift such as is shown in Figs. 1 and 2 and will even wear longer than an uncompressed top lift made of a much better grade of leather.

The wrinkles in the face of the top lift have been removed by the compressing operation and the top lift made substantially level and of uniform thickness throughout its body, with its faces in parallel planes. These are both great advantages, the first because the time required for buffing a top lift is reduced to a minimum, the cost of buffing material, such as emery-paper, is much less, and the liability of cutting through the grain of the leather, and thus spoiling the finish of the top lift, is prevented, and the second for the reason that when a top lift is flat and of uniform thickness it can be handled more accurately by the machine used for attaching the heel and top lift to the shoe, besides being of much better appearance when on a shoe. The machines commonly employed for this purpose are provided with clamps or fingers adapted to engage the edges of the top lift to carry it into position to be attached, and if the top lift happens to be warped, as shown in Figs. 1 and 2, which is very often the case with an uncompressed top lift, the clamps frequently fail to engage the edges of the top lift properly, thus displacing the top lift, so that in the attaching operation the top lift will be jammed between the heel and the clamp, thereby spoiling the top lift. When the top lift is flat, all liability of such failure of the clamps to engage the top lift and present it properly to the attaching mechanism is obviated.

The edges of the compressed top lift (shown in Figs. 3 and 4) are regular and even, so that the heel will be guided properly while it is being trimmed. Moreover, the edges are so hard and firm that they will not run over or wear away as quickly as those of an uncompressed top lift, the liability of a feather-edge forming is obviated, and when used on a compressed heel the finish on the edges of the top lift and heel will be uniform, because the leather in the compressed top lift is so dense that the stain used in finishing will not soak into the edges of the top lift more than into the edges of the heel.

The tread-face of a compressed top lift also has a fine luster after it has been finished, because the leather is so firm and dense that the stain will not soak into the leather.

From the foregoing description it will be seen that a compressed top lift is far superior to an uncompressed top lift for many rea-

sons, among which are the improvement in the wear-resisting qualities and appearance of the top lift and the reduced expense of its production and its use in the manufacture of shoes.

If desired, the compressed top lift may have stamped on its tread-face a trade-mark or design, as shown in Fig. 3, and its inner face or flesh side may be corrugated or roughened to form a good holding-surface for the glue used in attaching it to the heel, and it may also be stamped with a number to designate the size of the top lift, as shown in Fig. 5.

I find that the amount of pressure required to produce my top lift varies greatly according to the kind, quality, and condition of the stock—as, for example, a hard and warped or badly-wrinkled top-lift blank requires much more pressure than a smooth and flat blank, while a “tempered” top-lift blank requires less pressure than an untempered blank cut from the same stock, and my experiments indicate that the qualities of the top lift are improved as the amount of pressure imparted is increased. Whatever the grade of stock may be, however, the pressure must be sufficient to produce a substantial change in the characteristics or qualities of the top lift.

Processes which may be employed in the production of my improved top lift are described and claimed in my pending applications, Serial No. 178,438 and Serial No. 178,439, both filed October 24, 1903, and in Letters Patent of the United States No. 772,840, granted October 18, 1904.

A boot or shoe having a heel provided with my improved top lift is described and claimed in my pending application, Serial No. 178,440, filed October 24, 1903.

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

1. As a new article of manufacture, a top lift comprising a blank cut from a piece of leather and thereafter compressed and condensed by great pressure both upon its faces and its edges to such an extent that substantial changes are effected in its characteristics or qualities, substantially as described.

2. As a new article of manufacture, a top lift cut from soft or spongy leather and thereafter compressed and condensed by great pressure both upon its faces and its edges to such an extent that substantial changes are effected in its characteristics or qualities, substantially as described.

3. As a new article of manufacture, a top lift comprising a piece of leather compressed and condensed and having its tread-face and its edges hardened by great pressure exerted positively and directly upon the top lift to such an extent that substantial changes are effected in its characteristics or qualities, substantially as described.

4. As a new article of manufacture, a top

lift comprising a blank cut from a piece of leather and thereafter compressed and condensed by great pressure both upon its faces and its edges to such an extent that substantial changes are effected in its characteristics or qualities, substantially as described, and having a design impressed in one of its faces by such pressure.

5. As a new article of manufacture, a top lift comprising a blank cut from a piece of leather and thereafter compressed and condensed by great pressure both upon its faces and its edges to such an extent that substantial changes are effected in its characteristics or qualities, substantially as described, and having its flesh side corrugated or roughened by such pressure.

6. As a new article of manufacture, a top lift comprising a blank cut from a piece of leather and thereafter compressed and condensed by great pressure both upon its faces and its edges to such an extent that substantial changes are effected in its characteristics

or qualities, substantially as described, and having its diameter reduced by such pressure. 25

7. As a new article of manufacture, a top lift comprising a blank cut from a piece of leather and thereafter compressed and condensed in all its dimensions to a uniform thickness to such an extent that substantial changes are effected in its characteristics or qualities, substantially as described. 30

8. As a new article of manufacture, a top lift of leather the characteristics and qualities of which have been substantially changed by the compression and condensation of said lift throughout and in all of its dimensions, substantially as described. 35

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses. 40

CHESTER C. SMALL.

Witnesses:

WELLS L. CHURCH,
ARTHUR L. RUSSELL.