(No Model.)

C. W. GLIDDEN.

METHOD OF MANUFACTURING HEELS.

No. 399,607. Patented Mar. 12, 1889.

Fig. 1

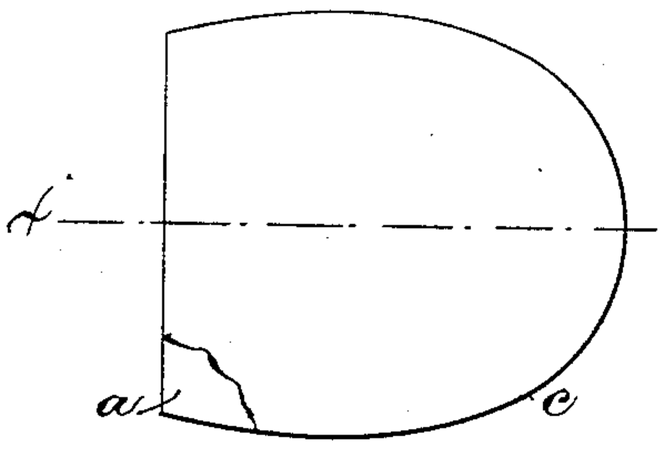


Fig. 3.

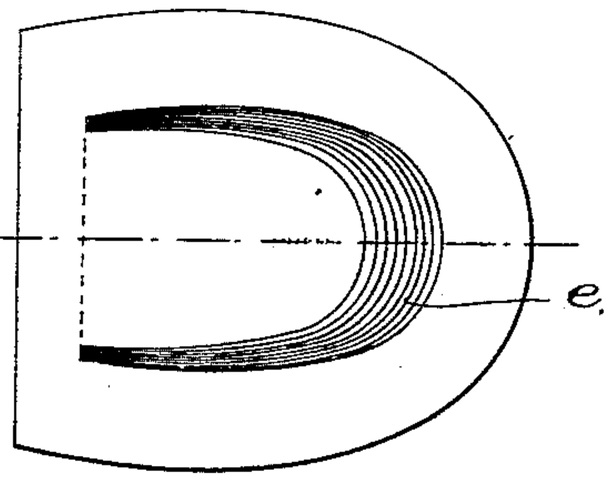


Fig. 2.

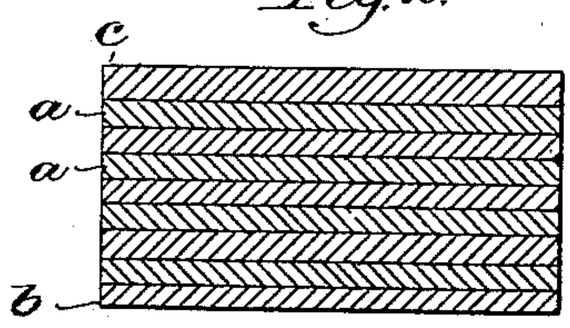


Fig. 4.

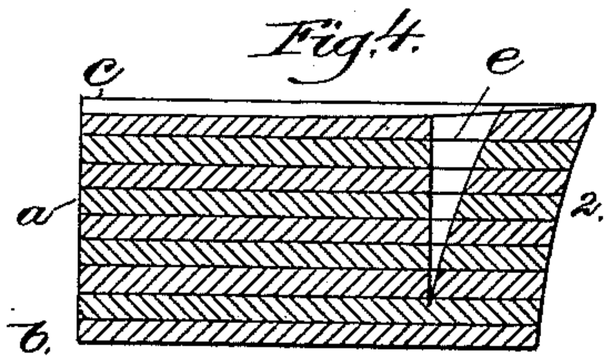
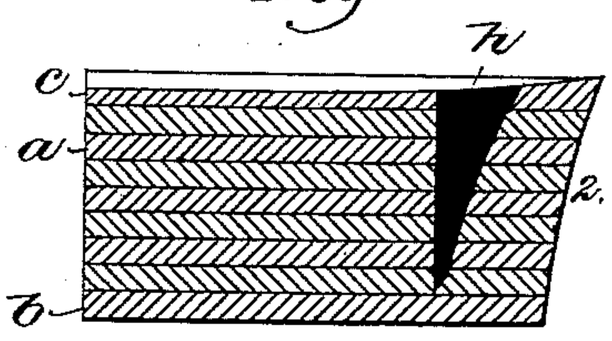


Fig. 5.



Witnesses.
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UNITED STATES PATENT OFFICE.

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METHOD OF MANUFACTURING HEELS.

SPECIFICATION forming part of Letters Patent No. 399,607, dated March 12, 1889.

Application filed June 25, 1888. Serial No. 278,143. (No model.)

To all whom it may concern:

Be it known that I, CHARLES W. GLIDDEN, of Lynn, county of Essex, State of Massachusetts, have invented an Improvement in the Method of Manufacturing Heels, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

In the manufacture of heels for the better class of boots and shoes it is customary to lay a series of heel-shaped pieces of leather in a pile until the pile is of sufficient height for a heel, and as all such heels must slope or incline at the end of the heel and along the sides according to the prevailing taste, the said lifts are made of different sizes, and the heel is brought into shape externally by a trimming operation, the edges of the lifts being cut away. The necessity of employing lifts of different diameter and then cutting the same away results in waste of very considerable stock, which it is the object of the inventor to avoid.

In accordance with my invention the lifts are laid in a pile of substantially uniform cross-section, and such piles of proper height for a heel are placed, preferably, in a mold the inner wall of which is of substantially the shape desired for the exterior of the heel, and the heel is entered vertically from the heel-seat end by a tapering horseshoe or U-shaped cutter, which, as it cuts into the heel, forces outwardly the substance of the heel outside the outer wall of the cutter, thus giving to the rear end and sides of the heel the desired pitch, slope, or incline, the tapering cavity made by the wedge-shaped cutter being filled, preferably, by some cheap and suitable material to keep the moistened and expanded heel from resuming its position.

My invention in the method of manufacturing heels consists in piling the lifts in a pile for the height of the heel and then forcing into the said lifts a U-shaped wedge-like cutting-tool to slit the heel and force the rear portion of the side walls outwardly to stretch or expand and give to the heel the desired taper.

Figure 1 is a top or plan view of a heel-blank embodying my invention. Fig. 2 is a section thereof in the line *x;* Fig. 3, a plan view like Fig. 1, but cut and stretched to give to the heel the desired pitch; Fig. 4, a longitudinal section of Fig. 3, and Fig. 5 a like section showing the cut and stretched heel filled to prevent it from contracting.

The heel herein shown is composed of a series of heel-shaped lifts, *a a*, laid one upon another, the pile being shown as terminated at its lower end by a tread lift, *b*, the top of the pile having laid upon it a rand lift, *c;* but the rand lift may, if desired, be omitted, but preferably it will be retained.

The parts so far described will be united by paste, cement, or by other usual means.

The lifts described will, when laid in a pile, be of substantially the same size as in Figs. 1 and 2, and as so far described the heel is old. The described heel is not, however, desirable, for it lacks the necessary pitch or incline at its rear end and along its sides adjacent thereto.

To give the desired pitch or incline to this substantially straight-walled heel, I cause to descend upon the seat end of the heel a U-shaped wedge-shaped cutter or plunger, which cuts into the heel, forming a V-shaped groove, *e*, the cutter or plunger during such time forcing outward the stock of the heel outside the said cutter or plunger, being the outer wall, 2, of the heel at the rear end of the heel and partially along its sides, of substantially the taper or pitch desired. During this operation the heel will preferably be contained in a metallic mold having a chamber the inner wall of which presents the pitch or incline corresponding with that desired for the heel.

The tool carrying the cutter referred to as employed to cut into the heel is shown in my application. This tool, beside the cutter referred to, has a convexed rim outside the cutter, which, during the descent of the tool, acts upon the rand lift *c* to concave the same, as best shown in Fig. 4, to fit the upper laid over and about the heel end of the usual inner sole.

If desired, all that part of the lifts *a a* at the center of the heel and within the slit made by the cutter may be removed by making an

additional cut down through the lifts and across from one to the opposite end of the slot in the dotted line shown in Fig. 3.

The space left by cutting into the heel from its seat may and preferably will be filled, as shown in Fig. 5, with paper pulp or other low-cost material *h* of sufficient rigidity to prevent the contraction of the heel as the same dries, it having been moistened and softened before the cutting operation described.

Cutting and stretching the heel as described enables the production of a shape which, prior to my invention described, was required to be made from lifts of different sizes, the surplus stock not required in the heel being removed by a heel-trimming tool.

The saving of this stock in a large factory is a very material item of economy.

I claim—

1. In the art or method of manufacturing heels, piling the lifts in a pile and forming in the same a U-shaped wedge-like opening, thereby stretching or expanding the heel to pitch or incline the same, substantially as described.

2. In the art or method of manufacturing heels, piling the lifts in a pile and forming in the same a U-shaped wedge-like opening, thereby stretching or expanding the heel to pitch or incline the same, and concaving the top of the heel outside the U-shaped cut therein, substantially as described.

3. In the art or method of manufacturing heels, piling the lifts in a pile and forming in the same a U-shaped wedge-like opening, thereby stretching or expanding the heel to pitch or incline the same, and then filling the said cut with a filling to prevent the contraction of the heel, substantially as described.

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

CHARLES W. GLIDDEN.

Witnesses:

H. P. FAIRFIELD,

W. C. WILLSON.