J. CAVANAGH.

METHOD OF MANUFACTURING SHOES.

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1,315,210. Patented Sept. 9, 1919.

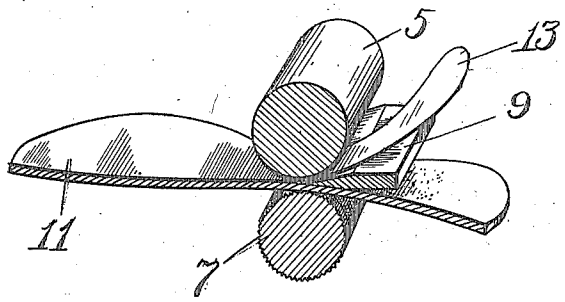


Fig. 1.

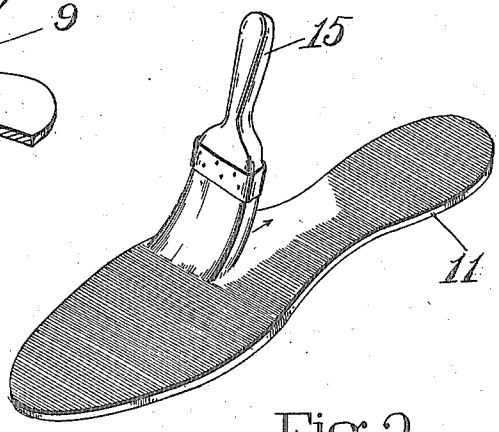


Fig. 2.

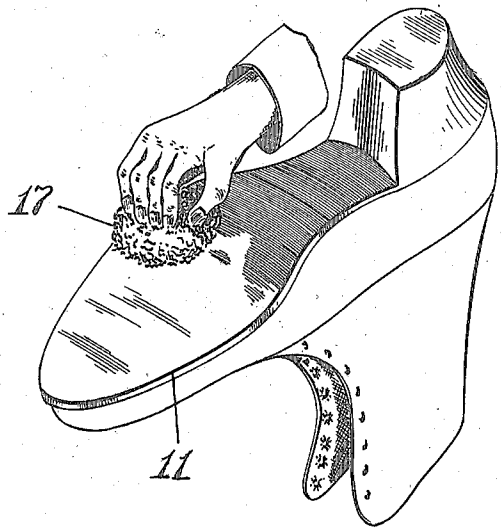


Fig. 3.

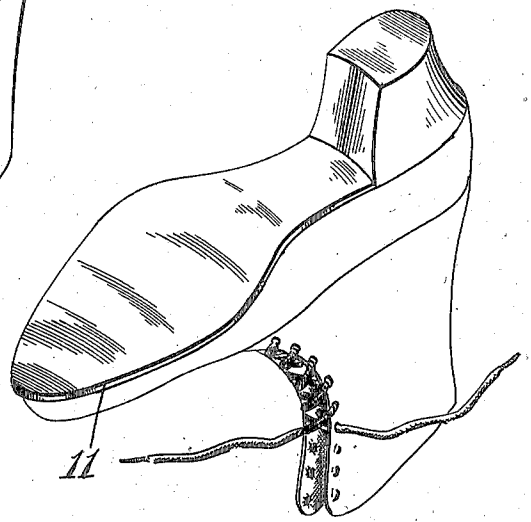


Fig. 4.

INVENTOR.

James Cavanagh

By his Attorney

Nelson B. Howard

UNITED STATES PATENT OFFICE.

JAMES CAVANAGH, OF BOSTON, MASSACHUSETTS, ASSIGNOR, BY MESNE ASSIGNMENTS, TO UNITED SHOE MACHINERY CORPORATION, OF PATERSON, NEW JERSEY, A CORPORATION OF NEW JERSEY.

METHOD OF MANUFACTURING SHOES.

1,315,210. Specification of Letters Patent. Patented Sept. 9, 1919.

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To all whom it may concern:

Be it known that I, JAMES CAVANAGH, a citizen of the United States, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented certain Improvements in Methods of Manufacturing Shoes, 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 improvements in the art of manufacturing boots and shoes, and is herein set forth in connection with a method of treating outsoles or outsole stock whereby the final buffing operation, as now commonly carried out on the outsole, is obviated.

In the manufacture of boots and shoes the tread face or bottom of the sole becomes more or less soiled with dirt or grease or both during the various operations by which the sole is attached to the upper, the edges trimmed, etc. After all these operations have been carried out and the shoe, except for the bottom, is practically finished, it is customary to buff the grain off the bottom of the sole so as to remove the dirt and grease, after which the bottom may be further finished, if desired, by waxing, staining, blacking, polishing or other suitable finishing operations.

There are certain disadvantages involved in the procedure which has been outlined above. First the grain, or a portion of it, is removed. In some cases it may be desirable to do this, as for example where a particular finish is imperative which can be obtained only in this way. Many manufacturers, however, would prefer to leave the tough grain undisturbed and thus to add considerably to the wearing qualities of the sole. Again, even in those cases in which it is desirable to remove the grain, the operation of buffing it off and thereby reducing it to dust is extremely wasteful. This grain is valuable and if it could be removed in a thin sheet could be used in making various articles such for example as sock linings, pocketbooks, book covers, etc.

The present invention is set forth in connection with a method of manufacture in which the bottom of the sole is protected from becoming soiled so that the grain may be removed before the sole is attached to the upper or may be left undisturbed as may be desired. In either event the bottom of the sole comes through all the operations unsoiled, and no buffing operation is then necessary.

In one of its aspects the method comprises applying a protective covering to outsole stock, incorporating the protected stock in a shoe and afterward removing the covering. In carrying out this procedure the stock may be covered either before or after the soles are died out. The covered sole is attached to the upper and operated upon in the usual manner after which the covering is removed.

In another aspect the method comprises removing the grain from a piece of leather such as outsole stock, covering that side of the stock from which the grain has been removed, incorporating the covered stock in a shoe, and afterward removing the covering. The grain may be removed by splitting it off in a thin sheet from the stock before or after the soles have been died out, and the sheets or shavings which result may be used by the shoe manufacturer or sold.

Referring now to the accompanying drawings,—

Figure 1 is a perspective of a piece of stock, which may be a sole, in the process of having the grain removed;

Fig. 2 is a perspective of a piece of stock, shown as a sole, in the process of receiving a protective covering;

Fig. 3 is a perspective of a shoe after the sole has been incorporated therein and part of the protective covering removed, and

Fig. 4 is a perspective of a completed shoe after the bottom of the sole has been finished by waxing and polishing or any of the usual treatments.

In carrying out the method the first step is to remove the grain or to coat the stock according to whether grain is to be retained on the finished sole or not. Assuming that the grain is to be removed, this operation may be carried out in a splitting machine in which two rolls 5 and 7 feed the stock to a knife 9 in the usual well known manner. In Fig. 1 of the drawings this splitting operation is being carried out on a died-out sole 11 to remove a split from the grain in the form of a thin shaving 13 which may later be used as a sock lining. It should be understood,

however, that the piece of stock might well be a large piece of sole leather. In such case the sheet of grain would be suitable for pocketbook work, etc., and the soles would be died out of the stock after the grain had been split off. In either case there would result a sole or soles from the grain side of which a split had been removed.

The next step is to apply a protective covering to the clean, freshly exposed surface of the stock. In Fig. 2 an adhesive coating comprising a solution of celluloid in a mixture of alcohol and ether is being applied to a died-out sole by means of a hand brush 15. It will be obvious that the coating might, if desired, be applied to a large piece of stock before the soles were died out. In either event there would result a sole or soles of which the clean, freshly exposed surface would be covered by the coating. The alcohol-ether solvent, being volatile, quickly evaporates leaving an adhesive film of impervious celluloid.

The coated sole is then incorporated in the shoe and the shoe operated upon in the usual manner, after which the coating is removed in any suitable manner, as for example by means of a sponge 17 which has been saturated or moistened with the solvent. In Fig. 4 the coating has been removed from the forepart of the sole, and that on the shank will next be removed. After the solvent has evaporated and the sole becomes dry, the usual waxing, staining, polishing and other finishing operations may be carried out, if desired, to produce the completed shoe shown in Fig. 4.

The method has been described above in detail in connection with the manufacture of a shoe in which the grain or a portion of it is removed from the sole. In case it is desired to preserve the grain so as to increase the wearing qualities of the sole, the first step is to coat the stock, either in its original form or after it has been died out into soles, as illustrated in Fig. 2. After that the soles are attached and the coating removed as has been described.

Although for convenience, the method has been set forth in connection with certain treatment of outsole stock, it should be understood that the invention is not limited in the scope of its application to the particular stock which has been described.

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

1. That improvement in the art of manufacturing boots and shoes which comprises applying a protective covering to outsole stock, incorporating the stock thus covered in a shoe, proceeding with the manufacture of the shoe to the point at which the bottom of the sole is to be finished, and then removing the covering.

2. That improvement in the art of manufacturing boots and shoes which comprises applying a protecting coating to one side of outsole stock, incorporating the protected sole in a shoe, proceeding with the manufacture of the shoe to the point at which the bottom of the sole is to be finished, and then removing the coating.

3. That improvement in the art of manufacturing boots and shoes which comprises applying a protecting coating to the bottom of a sole, incorporating the protected sole in a shoe, proceeding with the manufacture of the shoe to the point at which the bottom of the sole is to be finished, and then removing the coating.

4. That improvement in the art of manufacturing boots and shoes which comprises removing a portion of the grain from outsole stock, covering that side of the stock from which said grain has been removed, incorporating the covered outsole in a shoe, and afterward removing the covering.

5. That improvement in the art of manufacturing boots and shoes which comprises removing a portion of the grain from the bottom of a sole, applying an adhesive coating to the exposed surface, incorporating the coated sole in a shoe, and afterward removing the coating.

6. That improvement in the art of manufacturing boots and shoes which comprises removing the grain from a piece of leather, applying an adhesive, impervious coating to that side of the piece from which the grain has been removed, incorporating in a shoe the piece thus coated, and then removing the coating.

7. That improvement in the art of manufacturing boots and shoe, which comprises removing a split of the grain from the bottom of a sole, covering the freshly exposed surface of the sole, incorporating the sole in a shoe, and afterward removing the covering.

8. That improvement in the art of manufacturing boots and shoes, which comprises removing a split of the grain from the bottom of a sole, applying an adhesive coating to the exposed surface, incorporating the sole in a shoe, and afterward removing the coating.

9. That improvement in the art of manufacturing boots and shoe, which comprises removing a split of the grain from the bottom of a sole, coating the exposed surface with an impervious substance, incorporating the sole in a shoe, and afterward removing the coating.

10. That improvement in the art of manufacturing boots and shoes which comprises removing a split of the grain from the bottom of a sole, coating the exposed surface with a solution comprising a volatile solvent and a substance which, when the solvent evaporates, assumes the form of a thin pro-

tecting film, incorporating the sole in a shoe, and afterward removing the coating.

11. That improvement in the art of manufacturing boots and shoes which comprises removing a split of the grain from the bottom of a sole, coating the exposed surface with a cellulose compound, incorporating the sole in a shoe, and afterward removing the coating.

12. That improvement in the art of manufacturing boots and shoes which comprises coating the exposed surface of a shoe part with a solution which upon standing assumes the form of a dry protective film, incorporating in a shoe the part thus coated, and then removing the coating.

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

JAMES CAVANAGH.