

UNITED STATES PATENT OFFICE.

JOSEF MICHEEL, OF KERVENHEIM, GERMANY.

MANUFACTURE OF BOOTS AND SHOES.

978,324.

Specification of Letters Patent.

Patented Dec. 13, 1910.

No Drawing.

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To all whom it may concern:

Be it known that I, JOSEF MICHEEL, manufacturer, a subject of the King of Prussia, and resident of Kervenheim, near Kevelaer, in Rhenish Prussia, have invented certain new and useful Improvements in the Manufacture of Boots and Shoes, of which the following is a full, clear, and exact description.

The invention relates to shoes and boots and particularly to the making of both the toe and heel-caps, and consists mainly in employing for forming the same the upper leather and lining, these parts themselves being stiffened for the purpose at that place only where the cap is to be formed, by applying a celluloid-solution.

This invention entirely does away with the great disadvantages connected with the caps up to now used, which all the means hitherto employed were not able to remove.

Up to the present for shoes and boots requiring stiff caps, there were employed always separate bodies of different material, which bodies were cut out in their special necessary size and shape and then inlaid and secured between the upper leather and the lining at the heels and toes of boots and shoes, thus forming the stiff caps. Therefore, for employing and applying such caps, not only the material for the separate and special cap bodies was necessary, but also the work of making said bodies by stamping or cutting them out and forming or molding them, and further the adhesive material, such as paste, glue, or the like, and the work for placing, fixing and securing the special cap bodies at the desired place between upper leather and lining. Such separate caps were usually either thick leather caps, or shaped celluloid caps, both of which were very expensive, or ready shaped cardboard caps, or caps of material coated with paste, the latter of which however were not previously finished and stiffened, but, when required were cut out of the material, coated with the paste and inserted between the upper leather and the lining. But neither the latter stiffeners, nor the cardboard caps, are proof against perspiration, warmth and wet, but become limp in wearing and do not remain elastic, but crease and get out of shape.

With my new invention the manufacture of boots and shoes with perfect caps is very much simplified and rendered cheaper, because separate and special caps are done

away with and therefore all the disadvantages of such caps previously used are avoided.

The invention is based upon a new and original employment of a celluloid-solution working upon and in combination with the upper leather and the lining of the shoe and consists in an improved process for making caps for boots and shoes.

I state that the term "celluloid solution" comprises the material known as celluloid or one of the varieties of the same, some of which are known as xylonite, parkesine etc., and also the ground-material of celluloid or its varieties, i. e. pyroxylin or nitro-cellulose, dissolved in any suitable liquid, as acetone, acetic acid and the like.

The new process consists in the following: At that place in the boots and shoes where the caps are to be made, at the heel as well as at the toes, the upper leather and its lining are plastered at their adjacent sides opposite to each other with the celluloid-solution in such extension and shape, as is necessary for forming the cap, the two parts are laid upon each other with their plastered places together, united in the usual manner, mounted upon a last, and pressed together, until the solution is dried and hardened. Thus the thin materials forming the leather and lining at the said place are stiffened in themselves and form themselves the cap without using special cap-pieces or bodies made of thick leather, solid celluloid, cardboard, fabric coated with paste, or the like, such as were hitherto always used for making the caps.

With this process very thin caps of a very great stiffness and elasticity are produced, no ready cut material in the form of the cap and no special stiffener between the upper leather and its lining being used.

As already stated above, I am quite aware that caps of ready cut and pressed, or molded pieces of solid celluloid are known and used in the art, further I am aware that celluloid-solution has been made use of for manufacturing caps by cementing together with such solution layers of fabric and then forming special cap pieces or bodies from the thus prepared and united fabric-layers and inserting such cap pieces between the leather and the lining of the shoe. But never up to now has the celluloid-solution been made use of for stiffening the upper leather and the lining of boots or shoes to

such extent as is necessary for the cap, by plastering the opposite sides of said two parts, *i. e.* the under or inside of the upper leather and the upper side of the lining, 5 with celluloid solution, thus causing the pores in the leather and lining to be filled up by the celluloid and thereby the said parts to be immediately stiffened themselves. In this manner the boot or shoe is stiffened to 10 the desired extent at its heel as well as at the toe and provided with a so-called cap without applying and inserting a proper cap, *i. e.*, a specially prepared cap-piece or body, such as has been always used previously.

15 Having now fully described my invention, what I claim and desire to secure by Letters Patent, is:—

The process herein described of providing caps for boots and shoes, which consists in 20 stiffening corresponding parts of the upper

leather and its lining by plastering them at that part of the boot or shoe, where a cap is to be formed, on their adjacent sides opposite each other with celluloid-solution to such extent and shape, as corresponds to the 25 form of the cap which is to be made, thus filling up the pores of the leather and the lining with celluloid, and then laying the two parts upon each other with their plastered places together and uniting the same 30 in any usual manner, and finally mounting the whole upon a last and pressing it until the solution is dried and the whole hardened.

In testimony, that I claim the foregoing as my invention I have signed my name in 35 presence of two subscribing witnesses:

JOSEF MICHEEL.

Witnesses:

BRUCE WALLACE,
C. F. HENSLEY.