

UNITED STATES PATENT OFFICE.

CHARLES KEENE, OF SUSSEX PLACE, ENGLAND.

IMPROVEMENT IN MAKING BOOTS, SHOES, &c., OF GUTTA-PERCHA COMBINED WITH OTHER FABRICS.

Specification forming part of Letters Patent No. 5,593, dated May 23, 1848.

To all whom it may concern:

Be it known that I, CHARLES KEENE, of Sussex Place, Regents Park, in the county of Middlesex, esquire, a subject of the Queen of Great Britain, have invented or discovered new and useful Improvements in Boots, Shoes, Gaiters, Overalls, and other Articles; and I, the said CHARLES KEENE, do hereby declare that the nature of my said invention and in what manner the same is to be performed, are fully described and ascertained in and by the present specification thereof.

My improvements in boots, shoes, gaiters, overalls, and other like articles of apparel, consist in rendering the same more or less weather and water proof, and more easy of wear by the application to the same or the making of the same in whole or in part of the substance called "gutta-percha."

First. I coat the pieces of leather, cloth, or other material of which the boots, shoes, gaiters, overalls, or other articles are made, and either on one or both sides, with a solution of gutta-percha or a solution of gutta-percha mixed with a portion or portions of caoutchouc, or sulphur, or coloring-matter, or any other substance or thing which may be calculated to improve the quality of the said solution, and this I do either once, twice, or oftener, according to the thickness of the solution and the thickness desired to be given to the coating; and sometimes, instead of so coating the whole of the said pieces, I coat those pieces which are likely to be most exposed to the weather and wet—as, for example, the outer sole and upper leathers only.

Second. I protect in like manner the said pieces of leather or other material, some or all of them, by covering the same either on one or both sides with a layer or layers of gutta-percha in the plastic state, or of gutta-percha combined in the said plastic state with a portion or portions of caoutchouc, or sulphur, or coloring-matter, or of French chalk, or other soft powder.

Third. Instead of either coating or covering as aforesaid the materials of which the boots and other articles before mentioned are made, I sometimes interpose between the same, or certain portions of the same—as, for example, between the inner and outer soles, or

between the upper-leathers and lining-pieces of gutta-percha in any of the sheet states in which it is manufactured.

Fourth. I manufacture boots, shoes, gaiters, overalls, and other like articles in whole or in part of a compound fabric formed by adding to gutta-percha while in the kneading-machine (whether previously combined or not combined with caoutchouc, or sulphur, or coloring-matter, or French chalk, or other soft powder, as aforesaid), a portion of leather-dust, or hair, or bristles, or ground cork, or woolen shearings, or other membranous or fibrous substance in a finely-comminuted state.

Fifth. I also manufacture boots, shoes, gaiters, and other like articles in whole or in part of a fabric formed by saturating a bat or fleece of cotton, wool, or other fibrous material with a solution of gutta-percha or a mixed solution of gutta-percha and caoutchouc, preferring, however, for the purpose of this branch of my invention such bats or fleeces as have been saturated with a solution containing in it a portion more or less of sulphur and of some coloring-matter.

Sixth. Instead of uniting the different parts of which boots and shoes and other articles aforesaid are made by stitching or sewing as usual, whenever any two of these parts or any one or two parts consist or consists of gutta-percha, or of a mixture of gutta-percha and caoutchouc, in any of the sheet states aforesaid, I pass a hot iron over the joint or joints, which causes the two surfaces to adhere firmly together. Articles thus made differ from similar articles made with caoutchouc, in that the surface is not tacky and does not need to be vulcanized, and still admits of uniting the edges to form the seams by heat and pressure alone. Such articles cannot be advantageously made with caoutchouc, because if not vulcanized the surface continues to be tacky, which tackiness can only, so far as is known, be avoided by the well-known process of vulcanizing to the injury of the fabrics or other substances lined with it; but by the use of gutta-percha the most beautiful and delicate fabrics can be lined and made up into various articles of apparel, &c., without the slightest injury to their texture.

Having now described the nature of my

said invention and in what manner the same is to be performed, I declare that what I claim, and desire to secure by Letters Patent, is as follows:

The making of boots, shoes, and other articles of any known kind of cloth or leather lined or coated as herein described with gutta-percha, in any of its states of preparation or

combination by cementing instead of sewing or stitching them together, as before described.

CHARLES KEENE.

Witnesses:

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