

G. WATKINSON.
Manufacture of Rubber Boots.

No. 214,332.

Patented April 15, 1879.

fig. 1.

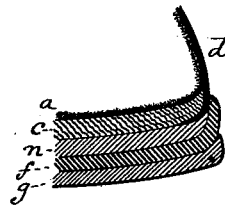
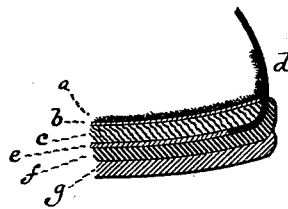


fig. 2.



Witnesses:
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UNITED STATES PATENT OFFICE.

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IMPROVEMENT IN MANUFACTURE OF RUBBER BOOTS.

Specification forming part of Letters Patent No. **214,332**, dated April 15, 1879; application filed
February 17, 1879.

To all whom it may concern:

Be it known that I, GEORGE WATKINSON, of New Haven, in the county of New Haven and State of Connecticut, have invented a new Improvement in Rubber Boots; and I do hereby declare the following, when taken in connection with the accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, a transverse section of the sole at one edge; Fig. 2, a like section of the common construction.

This invention relates to an improvement in the manufacture of rubber boots, with special reference to the soles.

The usual construction is illustrated in Fig. 2.

The insole consists of felt or other fleecy material *a*, upon the under side of which is a thin layer of india-rubber, *b*. These materials are united in the sheet, and the insole cut therefrom and laid upon the last. Then what is called the "rag sole," *c*, is laid upon the insole, and the lower edge of the upper *d* drawn on and gummed to the rag sole *c*. This rag sole is cut from sheets made by combining cut rags or other suitable fiber with the rubber in the process of grinding, to give stiffness to the sole. Onto this rag sole the filling *e* is placed; then over this the sole proper, *f*, is laid, lapping up onto the upper around the edge; then the final tap-sole *g* is applied to complete this part of the boot.

So soon as the tap-sole and the sole proper are worn through the rag sole is exposed, and while that is of a nature to stiffen the sole, and essential to the boot, it possesses no durability when exposed to wear. The upper is also exposed as soon as the two soles are worn; hence, as soon as it is exposed by the wearing away of the soles *f g*, the boot is useless as a rubber boot.

Again, in this usual construction there are five pieces to be cut and separately applied, each requiring time to form them and to properly work them down onto each other.

The object of this invention is to produce a more durable sole, and at the same time save expense in manufacture; and it consists in the construction as hereinafter described, and more particularly recited in the claim.

Instead of applying the felt to the thin material to form the insole, it is applied to one surface of the rag-rubber sheet, and the insole cut from this coated rag sheet and applied directly upon the last, felt side in, as seen in Fig. 1; then the upper *d* is drawn down upon the rag surface and secured; then, instead of applying a thin filling, a first sole, *n*, is laid upon the insole. This is cut from sheet-rubber, of substantially the same texture as the sole proper, *f*. This sole *f* is turned up, inclosing the edge of the sole *n*, and lapped onto the upper. Then the tap-sole is applied in the usual manner.

By this construction the process of manufacture is simplified, as there is one less part to be cut, handled, and applied, and it possesses the advantage of one-half more wearing material than the previous construction, and at less cost, as the additional cost of the sole *n* is more than compensated for by saving in labor.

In some cases the tap-sole *g* may be omitted, as it may in the previous construction; but in such case the wearing material in this improved construction is increased one hundred per cent. over the usual construction.

I claim—

The herein-described improvement in the method of making rubber boots, consisting of a rag insole, with the felt lining applied directly thereto, the edge of the upper laid over said insole, then the rubber sole *n* laid upon the insole and over the edge of the upper, then the sole *f* laid upon said sole *n* and lapped over onto the upper, and with or without the tap-sole, substantially as described.

GEORGE WATKINSON.

Witnesses:

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