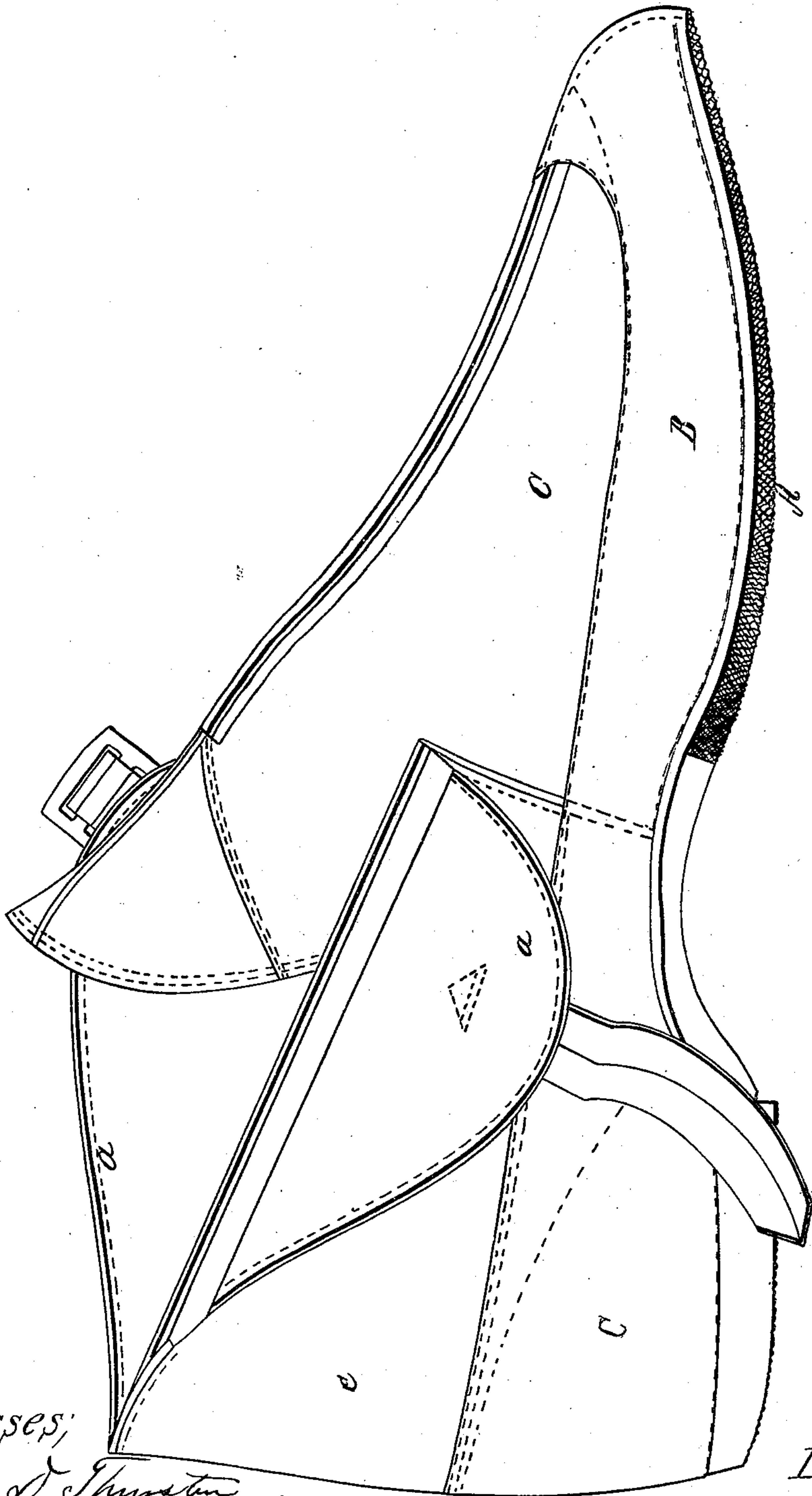


A. O. Bourn,

Rubber Shoe.

No. 87,137.

Patented Feb. 23. 1869.



Witnesses;

John D. Thurston

James W. Stillman

Inventor;

Augustus O. Bourn

United States Patent Office.

AUGUSTUS O. BOURN, OF CRANSTON, RHODE ISLAND.

Letters Patent No. 87,137, dated February 23, 1869.

IMPROVED OVERSHOE.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, AUGUSTUS O. BOURN, of the town of Cranston, in the county of Providence, and State of Rhode Island, have invented a new and useful Improvement in Overshoes; and I do hereby declare that the following specification, taken in connection with the drawings making a part of the same, is a full, clear, and exact description thereof.

The object of the invention herein described is to produce an overshoe, of that class commonly known as "Arctic overshoes," which shall, by preventing the ready admission of water from the outside, be practically water-tight, but shall, nevertheless, allow of the free escape of the insensible perspiration of the foot.

Shoes of the general class to which this belongs, are composed usually of a rubber sole, A, a rubber foxing, B, an outer vamp and quarters, C, of closely-woven cloth, an inner lining, *a*, of plush, or other soft and loosely-woven material, to give warmth to the foot, and an interlining of rubber between the two walls of cloth. Usually the outside cloth and the inside lining are cemented together with rubber cement, but the inner lining, the outer cloth vamp, and an intermediate sheet of rubber, are secured together only at the edges, and are elsewhere unattached.

The former mode of construction, as universally practised, produces a shoe which alike prevents the admission of water from without, and the escape of perspiration from within.

The latter mode of construction secures ventilation to a considerable degree; but when the outer vamp and inner lining are not secured together throughout the whole extent of their surfaces in contact, the vamp, after it has become wet, will shrink, and change its shape independently of the lining, and render the shoe uncomfortable and unshapely.

When rubber is spread out into a very thin and attenuated sheet, and applied to a shoe, as hereinafter described, it will not prevent the escape, through its pores, of moisture evolved by perspiration, generated, as such moisture is, under conditions which create a pressure from the inside of the shoe, but water from the outside is, nevertheless, under the ordinary exposures of the shoe from common use, practically excluded.

By availing myself of this fact, I am enabled to produce an overshoe which is sufficiently water-tight for

the protection of the feet against wet, but at the same time secures the comfort and advantages of ventilation.

The construction of my improved shoe is peculiar only so far as the upper is concerned. The sole and foxing are made in the manner commonly practised in the art, and are secured to the cloth and vamp in the well-understood way.

The cloth which forms the "upper," is coated with rubber which has been dissolved by the aid of any of the well-known solvents. This thin solution is applied to the cloth by means of a knife, in the same manner in which rubber fabrics are usually coated by gum in solution.

The solution which I prefer to employ, is of such consistency that two coats upon the inside surface of the inner fabric, and two coats upon the exterior of the lining, are requisite to be employed to render the two fabrics, when united, capable of furnishing sufficient protection against water from the outside.

Any person familiar with the art will be able readily to determine the thickness of the coating necessary, when it is understood that the rubber should be so thin that the color of the underlying cloth can be readily seen through it; in other words, so thin that if a sack were made of a sheet of such thickness, filled with water and subject to gentle pressure, moisture would exude through it freely.

A skilled workman would probably be able to apply a coating of this character to a fabric by means of a calender, but it will be ordinarily safer to spread it by a knife, as above described.

I do not claim broadly the use of an interlining of rubber; neither do I claim broadly the use of an elastic fabric coated with rubber; but

What I claim as my invention, and desire to secure by Letters Patent, is—

The improvement in rubber-cloth overshoes, consisting of the interposition of a thin solution of rubber between the cloth upper and its lining, by which said fabrics are united and rendered practically water-proof, yet pervious to perspiration, substantially as herein described.

AUGUSTUS O. BOURN.

Witnesses:

JOHN D. THURSTON,
JAMES W. STILLMAN.