

UNITED STATES PATENT OFFICE.

CHARLES GOODYEAR, OF NEW HAVEN, CONNECTICUT.

IMPROVEMENT IN MANUFACTURE OF POROUS RUBBER CLOTH.

Specification forming part of Letters Patent No. 25,110, dated August 16, 1859.

To all whom it may concern:

Be it known that I, CHARLES GOODYEAR, of the city of New Haven and State of Connecticut, have invented a new manufacture denominated "Porous India-Rubber Cloth," of which the following is a specification.

I have heretofore invented a fabric composed of a bat or fleece of cotton or other fabrics united by india-rubber or allied gum, which fabric, although water-repellent by reason of the india-rubber or allied gum for using a component part of it, was nevertheless impervious to air.

My present invention of a new manufacture consists of a cloth of cotton, wool, or other fibrous substance, either woven or otherwise interlaced, and india-rubber or allied gum put on in sufficient quantity to be water-repellent, and so thin as to become porous when it becomes a part of the completed fabric, the gum separating between the fibers to form numerous small apertures.

I will now describe the manner in which I have produced the said new manufacture.

I proceed in the manner heretofore practiced by india-rubber-manufacturers in coating the surface of a woven fabric with india-rubber or allied gum, either by means of the calendering-rollers or with the spreading-knife, the gum in the former case being softened by artificial heat and rolled into a thin sheet and applied while in the plastic state to the surface of the woven fabric by the pressure of the rollers, and in the latter case the gum being previously dissolved in naphtha or camphene or other essential oil, and in that state spread over on the surface of the woven fabric by what is termed the "spreading-knife;" but in making my said new fabric of the india-rubber or other allied gum, if applied by the calendering-rollers, it must be with that degree of heat, well known to india-rubber-manufacturers, which shall give it the greatest degree of softness or plasticity, so as to make the coating very thin. If, however, the gum is to be applied in the liquid state, which I prefer, a good solution for the purpose will be obtained by dissolving one pound of india-rubber in two pounds of naphtha or camphene. With such a

solution about two coats in succession should be applied to the surface of the fabric; but if the fabric be very coarse, or woven loose with large meshes, more than two coats will be required, and if the woven fabric be very closely woven and of fine texture one coat of gum will be sufficient.

By preparing the gum in the manner well known to persons skilled in the art of vulcanization before applying it to the surface of the woven fabric, and then subjecting the fabric thus coated to the requisite degree of artificial heat, the gum will be vulcanized, and thereby acquire all the properties due to that process without destroying the porous property of the fabric, as I have discovered that the vulcanization does not destroy the porous property previously imparted; but whether vulcanized or non-vulcanized, the fabric, when completed, will be porous to a sufficient extent to admit of the passage of air, and at the same time water-repellent.

Although I have above described two modes by which I have successfully produced the said new manufacture, I do not wish to be understood as limiting my claim of invention to such fabric when produced by such modes of procedure, as the same fabric may be produced by other means not known to me.

I am aware that fabrics have before been produced by coating woven fabrics with india-rubber or with allied gum; but such fabrics, although water-repellent, were not pervious to air, and therefore I do not wish to be understood as making claim broadly to a manufacture composed of a woven fabric coated with india-rubber or allied gum; but

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

A new porous manufacture pervious to air and water-repellent, composed of a woven or equivalent fabric and a thin porous coating of india-rubber or allied gum, substantially as described.

CHAS. GOODYEAR.

Witnesses:

FRS. BACON,
HORACE ANDREWS.