

UNITED STATES PATENT OFFICE.

CHARLES GOODYEAR, OF NEW HAVEN, CONNECTICUT.

IMPROVEMENT IN INDIA-RUBBER FABRICS.

Specification forming part of Letters Patent No. 25,111, 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 and Fibrous Bat Fabrics;" and I do hereby declare that the following is a full, clear, and exact description thereof.

The production of a fabric possessing the water-repellent property due to the use of india-rubber or allied gum, and which at the same time should be porous or pervious to air, has for many years been a desideratum, for although the water-repellent property imparted by india-rubber or allied gums is very desirable as applied to articles of clothing, for the general purposes of clothing it is important that the fabric should be pervious to air, and prior to my discovery no manufacture was produced possessing these qualities combined.

The object of my invention is the production of a fabric which shall possess the water-proof or water-repellent and durable properties due to india-rubber or allied gums, and which at the same time shall be porous or pervious to air; and to this end my said discovery or invention of a new manufacture consists in uniting the fibers of a bat of cotton, silk, or other fibrous substance by means of india-rubber or allied gum, applied thereto by pressure and in such small quantity and in a state so thin that the continuity of the fiber of india-rubber or allied gum shall be broken between the fibers of the bat to form numerous small apertures for the passage of air, but so minute as to obstruct the passage of water or other liquid.

I will describe the mode of procedure which I have practiced with success for producing the said new manufacture. For this purpose I take two calendering-rollers, such as are usually employed by india-rubber manufacturers, and place them in the same horizontal plane, or nearly so. Around one of these rollers I pass an endless apron of glazed cloth, which also passes around another roller, by which it is kept in a distended state. Around the other calendering-roller I pass an endless apron of woolen felt cloth, and this also passes around another roller to keep it in a distended state. If desired, however, instead of an endless apron of felt or other elastic cloth, the

calendering-roller may be simply covered over with such elastic substance; but the endless apron will be found to be the best in practice. The machine being thus mounted and the rollers geared and put in motion in the usual manner, I spread the india-rubber, or the preparation thereof, onto the glazed apron and introduce a bat or fleece of cotton or other fibrous substance between the elastic apron and the dissolved gum, and thus cause the two to pass between the rollers, by which the gum will be forced entirely through the bat or fleece, thus incorporating or uniting the fibers with the gum. The fabric thus produced will pass along from the rollers, adhering to the surface of the glazed cloth, from which it can be readily removed. If the gum is sufficiently soft, the fabric thus made will be porous to a certain degree, so as to permit the passage of air and obstruct the passage of water.

Although I have above described the mode in which I have with success produced the said new fabric, I do not wish to be understood as limiting my claim of invention to the producing of such fabric in the mode described, as it may be produced by other modes of procedure. I have discovered that the fabric thus produced, (but with the gum previously prepared in the usual manner for vulcanization,) may be vulcanized without destroying the porous property imparted, and therefore the fabric may be vulcanized or not at the pleasure of the manufacturer.

I am aware that prior to my said invention fabrics were produced by incorporating a bat or fleece of cotton or other fibers with india-rubber or allied gum; but such fabrics were impervious to air, and therefore I do not wish to be understood as claiming broadly the invention of a fabric composed by incorporating a bat or fleece of fibers with india-rubber or allied gum; but

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

The porous and water-repellent manufacture composed of a bat or fleece of cotton or other fiber and india-rubber or allied gum united and rendered porous, substantially as specified.

CHAS. GOODYEAR.

Witnesses:

FRS. BACON,
HORACE ANDREWS.