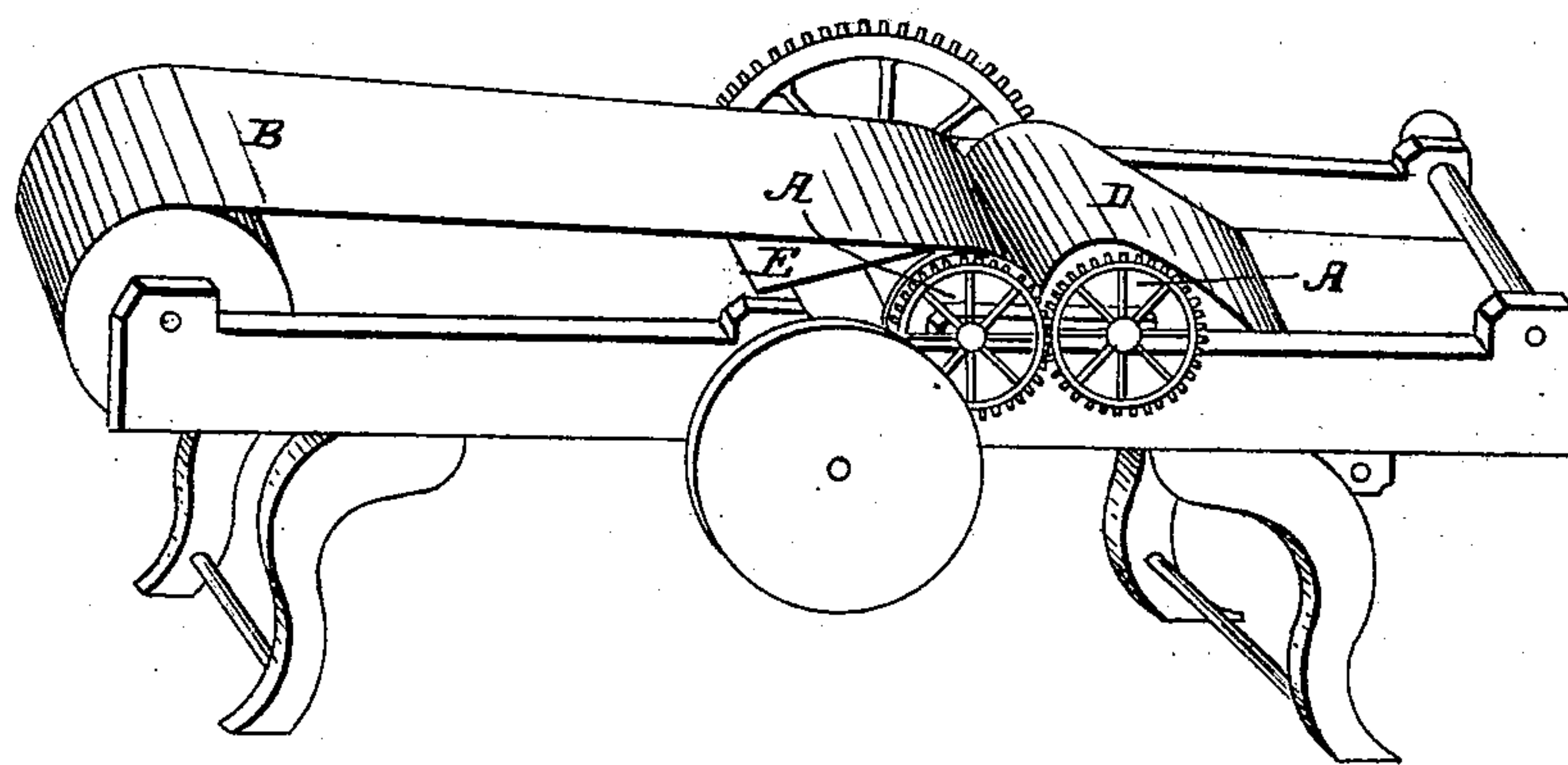


C. GOODYEAR.
Making Rubber Fabrics.

No. 9,319.

Patented Oct. 12, 1852.

Fig. 1.



UNITED STATES PATENT OFFICE.

CHAS. GOODYEAR, OF NEW HAVEN, CONNECTICUT.

MODE OF MAKING INDIA-RUBBER BAT-CLOTH.

Specification of Letters Patent No. 9,319, dated October 12, 1852.

To all whom it may concern:

Be it known that I, CHARLES GOODYEAR, of New Haven, Connecticut, have invented certain new and useful Improvements in the
5 Manufacture of Cloth Composed of Caoutchouc, or Similar Gums, or Compounds Thereof, and Bats or Fleeces of Cotton, Flax, or other Fibrous Substances, and that the following is a full, clear, and exact descrip-
10 tion thereof, reference being had to the accompanying drawing, making part of this specification, in which—

Figure 1 is a perspective view.

My invention relates to the method of
15 making cloth which is composed of caoutchouc or similar gums, or compounds thereof and bats or fleeces of cotton flax or other fibrous substances.

The method heretofore tried for forming
20 fabrics of caoutchouc and a bat of cotton or other fibrous substance was to pass the bat or fleece of fibers, together with a sheet of prepared caoutchouc in the green or adhesive state, between calendering rollers to
25 force the fibers into the gum, or to pass the bat or fleece of cotton or other fibrous substance together with dissolved caoutchouc or compounds thereof between calendering rollers. I have found by repeated experi-
30 ments that this is attended with serious difficulties. In the first place the gum when softened simply by the action of heat is still so hard comparatively that the fibers of the bat can be forced into it only partially, and
35 therefore the sheet of gum receives but a slight increase of strength; and in the second place the bat, in passing through between the calendering rollers, in contact with a solid or unyielding surface, becomes
40 so matted by the pressure as to prevent the passage of the gum between or among the fibers.

My invention in the manufacture of such fabrics consists in passing a bat or fleece of
45 cotton, flax, silk, or other fibrous substance, together with the dissolved caoutchouc, or similar gums, or the compounds or preparations thereof, between calendering rollers, with the bat or fleece in contact with an
50 elastic substance interposed between it and the roller which makes pressure on the surface of the bat or fleece, or a glazed or other apron being interposed between the gums and the other roller.

55 For carrying into practice my said invention, I take two calendering rollers A A,

such as are usually employed by caoutchouc manufacturers, which may be placed in the same horizontal plane, or nearly so. Around one of these rollers I pass an endless apron
60 of glazed cloth, B, which also passes around another roller C by which it is kept in a distended state. Around the other calendering roller I pass an endless apron D, of
65 woolen felt cloth or other elastic substance, giving the preference, however, to the woolen felt cloth (or it may be placed beneath the glazed apron as shown at E), and this also passes around another roller to keep it in a
70 distended state. If desired, however, instead of the 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
75 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 caoutchouc, or the compound or prepa-
80 rations thereof, upon the glazed apron and introduce a bat or fleece of cotton or other fibrous substance between the elastic apron and the dissolved or softened gum, and thus cause the two to pass between the rollers, by
85 which the gum will be forced entirely through the bat or fleece thus incorporating the fibers with the gum. The fabrics thus produced will pass along from the rollers adhering to the surface of the glazed apron, from which it can be readily removed to be
90 taken to the curing or heating or vulcanizing process if desired. If the gum is sufficiently liquid or soft, the fabric thus made will be pervious or porous to a certain extent, so as to admit the passage of air or perspiration, and obstruct the passage of water to a cer-
95 tain extent. This quality of perviousness I consider, for many purposes, of great importance. By additional coats of gum, or by an additional coat of gum less liquid or soft, this fabric will be rendered completely
100 air and water proof. This fabric may afterward be submitted to the curing or vulcanizing process or not as may be desired.

When it is desired to give this fabric great strength, as for ship's sails or other articles
105 intended to resist tearing, I place either by hand or machinery fibrous threads, or cords, or strips, or wires, at suitable distances apart from each other, parallel or crossing each other, or otherwise arranged between
110 two sheets of the fabric, which are to be united, or upon a sheet of the fabric by

cementing the threads, strips, cords or wires upon the surface of the fabrics.

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

- 5 Passing the bat or fleece of cotton, flax, silk, or other fibrous substance together with dissolved or softened caoutchouc, gutta-percha, or other vulcanizable gum, or the compounds or preparations thereof between

calendering rollers with an elastic substance, 10 interposed between the bat or fleece and one of the rollers as described, or between the glazed apron and one of the rollers, substantially as described.

CHARLES GOODYEAR.

Witnesses:

SMITH E. LANE,
JNO. EDW. LARSENS.