July 12, 1932. B. E. KNOX 1,866,892

WATERPROOF COAT

Filed Feb. 20, 1931 2 Sheets-Sheet 1

FIG. 1

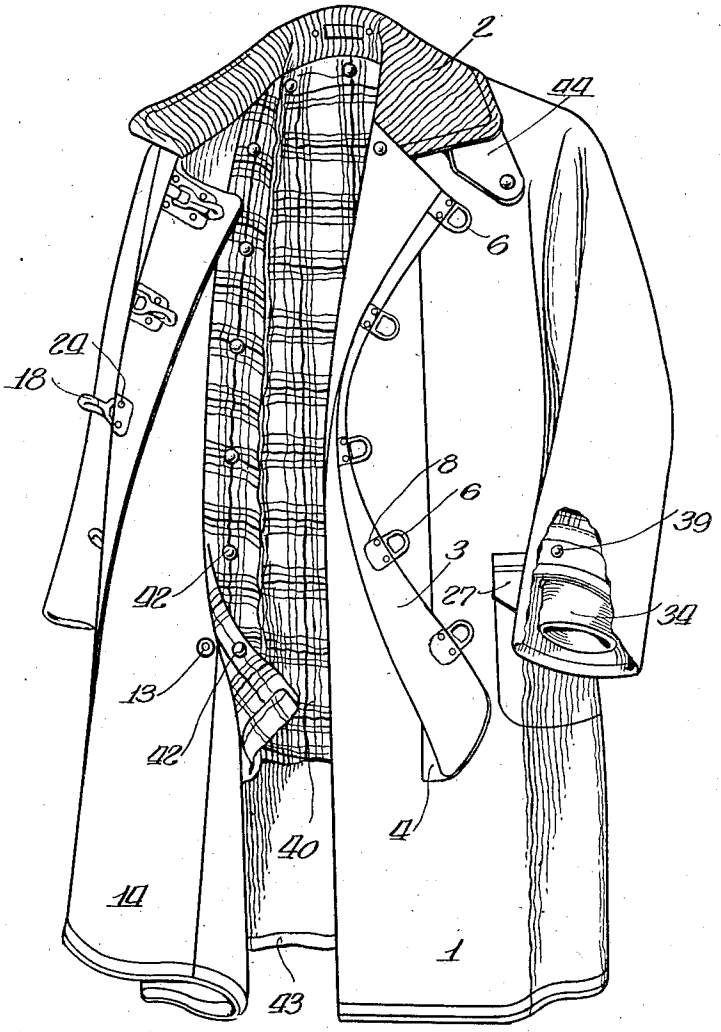

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Fig. 2

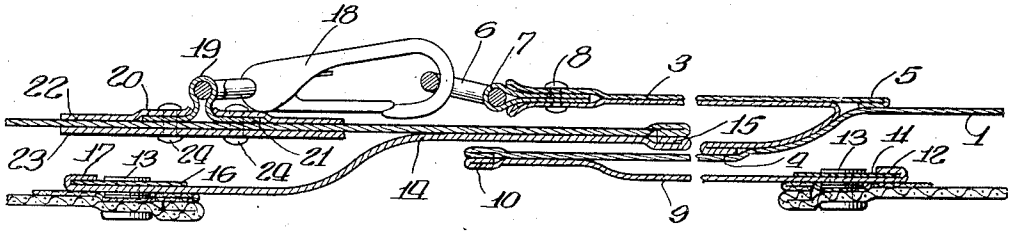


Fig. 3

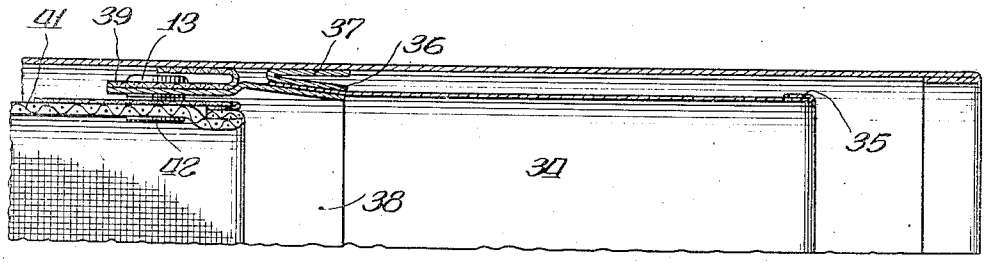
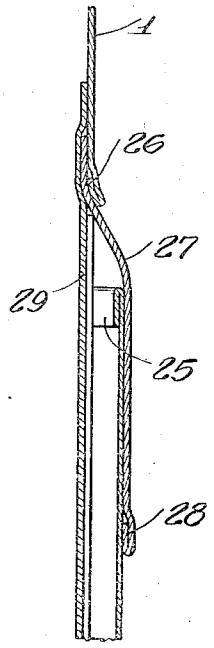


Fig. 4



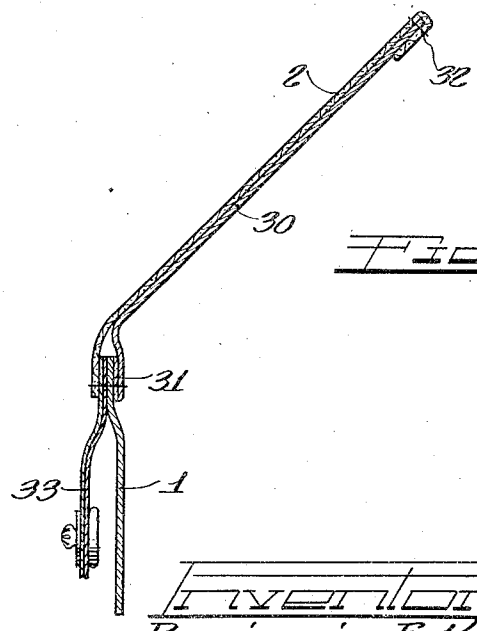


Fig. 5

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UNITED STATES PATENT OFFICE

BENJAMIN E. KNOX, OF CHICAGO, ILLINOIS, ASSIGNOR TO SPECIAL CLOTHING COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS

WATERPROOF COAT

Application filed February 20, 1931. Serial No. 517,221.

This invention relates to a waterproof coat and particularly to a garment or coat which is not only waterproof but which is heat resistant to a large extent.

The invention furthermore contemplates clothing material of fabric impregnated with gum rubber and asbestos.

The invention also contemplates a rubber impregnated fabric material which will withstand extreme temperature changes without cracking or peeling.

An object of this invention is to provide a fabric material which is waterproof and at the same time will withstand temperature changes of wide range without detriment.

Another object of the invention is to provide a waterproof coat or like garment of gum rubber which will withstand severe use and temperature changes over wide ranges.

A further object of the invention is to provide a waterproof coat having gum rubber wristlets.

A still further object of the invention is to provide a fireman's coat which is waterproof and heat resistant and which has the fastening members attached by a vulcanization.

Another and still further object of the invention is to provide a waterproof coat suitable for use by firemen which will protect the wearer from water and at the same time withstand high degrees of heat without deterioration, cracking or peeling.

The above, other and further objects of this invention will be apparent from the following description, accompanying drawings and appended claim.

Generally speaking the invention consists in providing a waterproof material by impregnating a fabric with a composition of gum rubber and asbestos and suitable coloring matter and in making coats and like garments from such material.

The accompanying drawings illustrate a coat embodying the present invention, and the views thereof are as follows:

Figure 1 is an elevational view of a coat partially open showing the preferred form of construction and illustrating an inner lining which is removably associated with the coat.

Figure 2 is an enlarged fragmental sectional view through the front of the coat showing the arrangement of parts when the snaps are engaged over the rings for fastening the coat together in front.

Figure 3 is an enlarged fragmental sectional view of the end of the sleeve showing the preferred manner of applying the gum wristlets.

Figure 4 is a fragmental enlarged vertical sectional view through a pocket.

Figure 5 is an enlarged sectional view through the collar and upper margin of the coat.

The material from which the coat is made is preferably eight (8) ounce duck impregnated with a solution of pure gum rubber and powdered asbestos with the rubber running from four to six times the asbestos.

The waterproof coat is illustrated in the accompanying drawings and as there illustrated, includes a coat body 1 made of the waterproof material consisting of duck impregnated with pure gum rubber and powdered asbestos which is vulcanized after being properly impregnated. The coat has the usual sleeves and is provided with a fabric collar 2.

The left side of the front of the coat has a flap 3 formed of a double thickness of the impregnated fabric with a margin of the inner ply vulcanized at 4 to the coat body 1 and a margin of the outer ply vulcanized at 5 to the coat body 1 at the left side of the coat. The margins of the two plies forming the flap 3 are thus spread and extend in opposite directions.

The margins of the plies of the flap 3 are inturned and vulcanized along the outer edge.

Rings 6 are attached at intervals in the length of the flap 3 by passing through loops 7 of the impregnated material which loops extend between the plies of the flap and over which loops the plies of the flap are vulcanized. Rivets 8 are also secured to the flap and the loops for securing the rings to the flap 3.

The inner margin of the left edge of the coat is reinforced by a ply 9 which has its

outer edge inturned at 10 and is vulcanized to the inner edge of the left margin of the coat with the inner portion of the ply 9 free. A strip 11 is vulcanized along the free margin of the reinforcing ply 9 and the free edge of said ply is inturned at 12 and vulcanized against the strip 11, thus reinforcing the margin of this reinforcing ply along the inner edge. Snappers 13 are fastened at intervals along the reinforced inner edge of the inner ply 9 of the left side of the coat.

The right side of the coat along its margin is reinforced in like manner by a ply 14 which has its outer edge inturned at 15 and vulcanized to the edge of the right-hand side of the coat with the inner margin of the ply 14 free. A strip 16 vulcanized along the inner margin of the free portion of the ply 14 and the free edge of the strip is turned over and vulcanized to the strip 16 for reinforcing the same. Similar snappers 13 are fixed in the reinforced free margins of the inner ply 14 at the right side of the coat.

Hooks 18 are secured by means of loops 19 of the impregnated material which loops have the ends thereof spread at 20 and 21 and vulcanized to the coat. Patches 22 are vulcanized over the ends 20 and 21 of the loop 19 and similar patches 23 are vulcanized on the inner surface of the right side of the coat where rivets 24 are secured through the two reinforcing patches 22 and 23 and ends 20 and 21 of the loops 19, thus securing the hooks 18 to the coat by vulcanization and riveting.

The pockets are made by slitting the coat body 1, inturning the lower margin of the slit at 25 to provide a reinforcement for the top edge of the outer portion of the pocket and inturning the upper margin of the slit and vulcanizing it against itself to form a reinforcement. A pocket flap 27 is vulcanized against the inner surface of the coat material adjacent the inturned portion 26 of the upper part of the slit and extends outwardly and overlies the pocket. The lower margin of the flap is inturned and vulcanized at 28.

The inner side of the pocket consists of a patch 29 vulcanized to overlie the upper end of the pocket flap 27 and also vulcanized to the coat body above the point of vulcanization of the pocket flap 27. It is, of course, vulcanized to coat body in a manner to provide a pocket of sufficient size.

The collar 2 is of fabric material and is fastened to an extension 30 of impregnated rubber material which rises from the upper port of the coat being vulcanized thereto at 31. The upper margin of the collar material 2 is turned over the upper edge of the impregnated material 30 and stitched at 32. A double ply strip 33 is vulcanized to the top of the coat 1 and underlies the lower edge of the collar material 2. The lower margin of the double ply strip 33 is free and this strip is provided with snaps 13 for a purpose to be later explained.

The sleeves are provided with pure gum wristlets 34 which have the free margins thereof outturned and vulcanized at 35. The inner margins of said wristlets are vulcanized to a doubled strip 36 which in turn is vulcanized at 37 to the inner surface of the sleeve near the open end of the same. Another strip 38 is vulcanized to the inner surface of the wristlet and also to a U-shaped reinforcing strip 39 which has its other end vulcanized to the sleeve above the strip 36. Snaps 13 are secured to the strip 39 and the portion of the strip 38 which is vulcanized to this strip.

A lining 40 which is, in fact, a woolen or like coat having sleeves 41 is removably attached to the coat by means of snaps 42 which cooperate with the snaps 13 along the left and right sides of the coat across the back on the strip 33 and with the sleeves 41 of the lining snapped to the snaps 13 in the strip 39.

Figure 1 shows the left-hand sleeve broken away illustrating the attachment of the left sleeve of the inner lining to the sleeve of the coat by means of the snap 39 and the appearance of the wristlet 34 with respect to the sleeve.

The use of wristlets of pure gum rubber is of advantage as the wristlets do not become wet and keep the arms of the wearer from becoming wet. The wristlets are vulcanized to the sleeves as described, thus making a union which is secure at all times.

The lower edge of the coat is inturned and vulcanized at 43. The hem so formed may be stitched if desired.

The collar is provided with the usual chin strap 44 whereby the meeting edges of the collar may be fastened if desired, for protection to the face of the wearer.

The coat illustrated is made without a slit in the back as it has been found that a coat with no slit is more serviceable for firemen than one that has a slit, as oftentimes firemen are hit by streams of water and soaked through the slit backs of the coat.

The asbestos in the impregnating mixture prevents rapid cooling of the rubber when the coat is heated, thus preventing cracking and peeling of the rubber material.

The invention has been described herein more or less precisely as to details yet it is to be understood that the invention is not to be limited thereby as changes may be made in the arrangement and proportions of parts and equivalents may be substituted without departing from the spirit and scope of the invention.

The invention is claimed as follows:

A waterproof coat of rubberized material having a fabric collar and a removable inner lining, a strip vulcanized to the coat along the collar and having means thereon for at-

tachment thereto of the inner lining, strips vulcanized to the inside of the coat body along the front margins thereof and having means thereon for attachment thereto of the inner lining, the portions of all the said strips carrying the attaching means being free from the coat, a flap vulcanized on the outside of the coat along one side of the front opening thereof to receive between it and adjacent coat margins the margin of the other side of the front of the coat, rings secured to said flap by loops passing through said rings and vulcanized to said flap along its free edge, and hooks attached to the other side of the coat front by loops engaging said hooks and being vulcanized to the front of the coat.

In testimony whereof I have hereunto subscribed my name at Chicago, Cook County, Illinois.

BENJAMIN E. KNOX.