Feb. 21, 1933. R. K. LEAVITT 1,898,015

RAINCOAT

Filed Sept. 5, 1931 3 Sheets-Sheet 1

Fig. 1

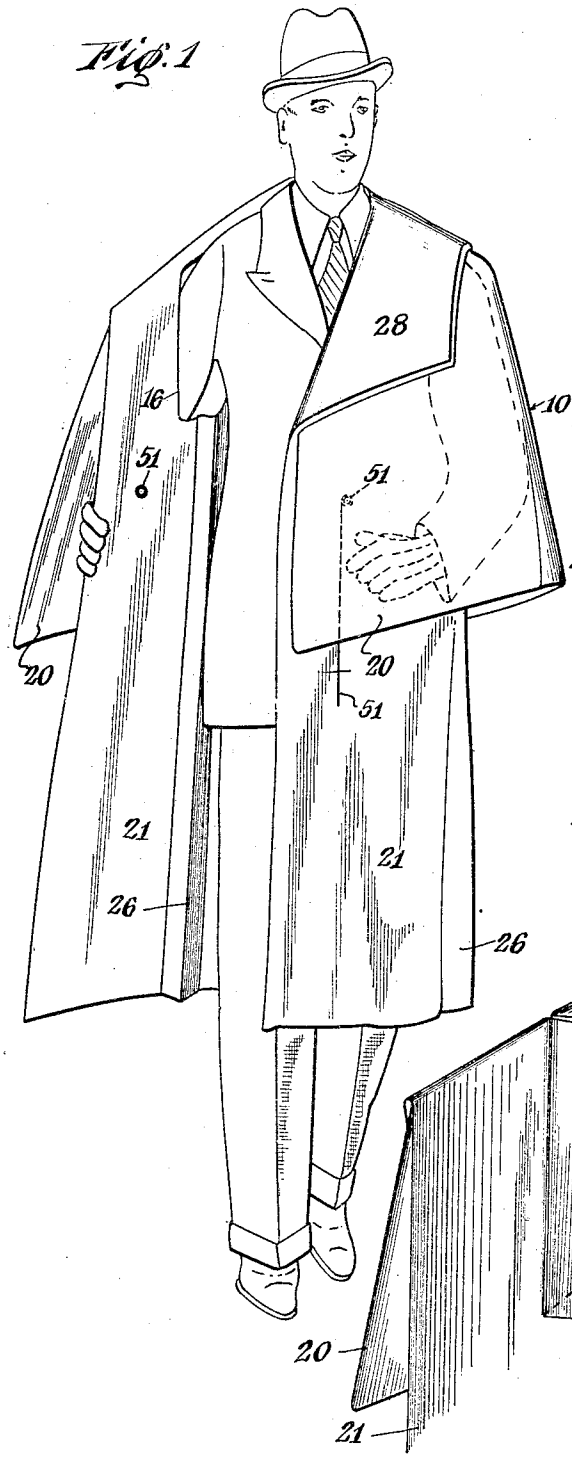


Fig. 10

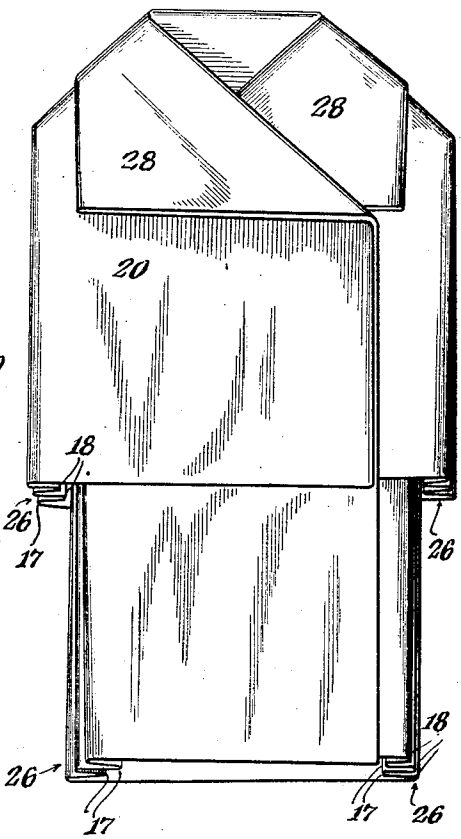
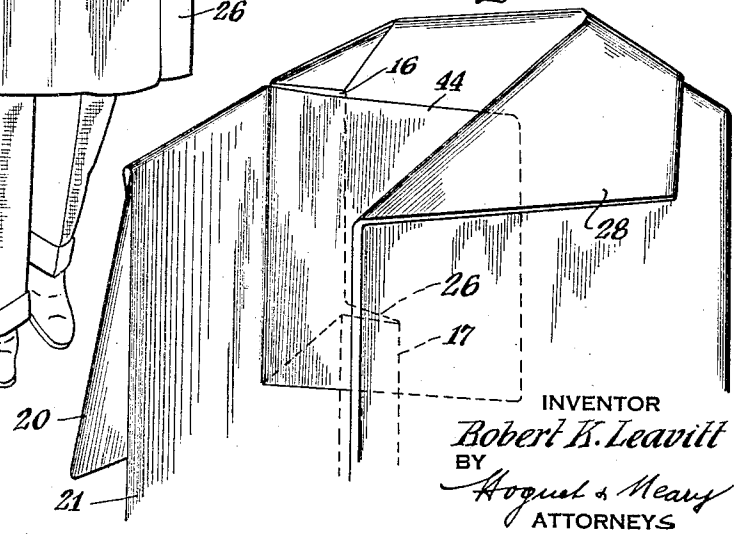


Fig. 11



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Fig. 2

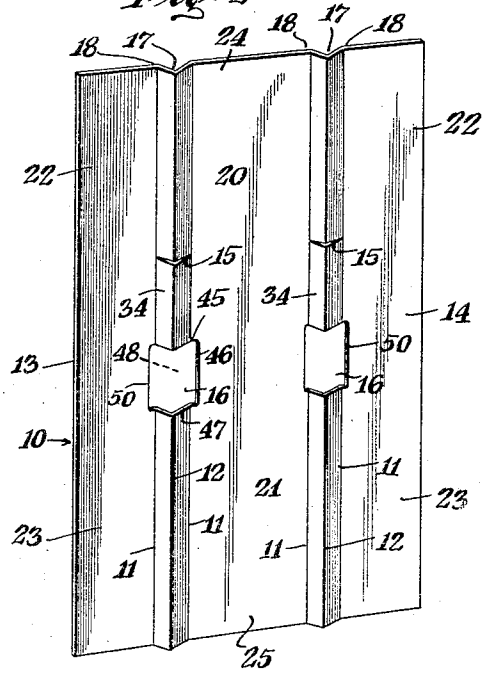


Fig. 3

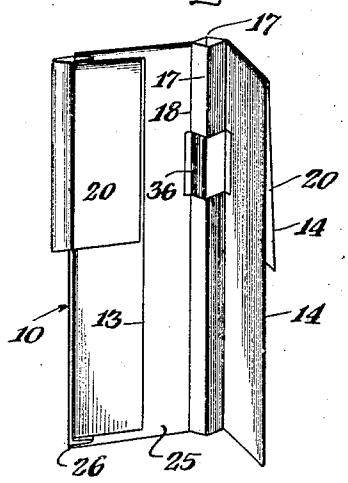


Fig. 4

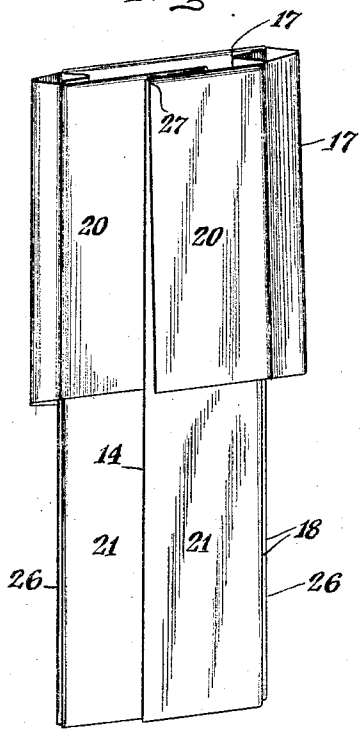
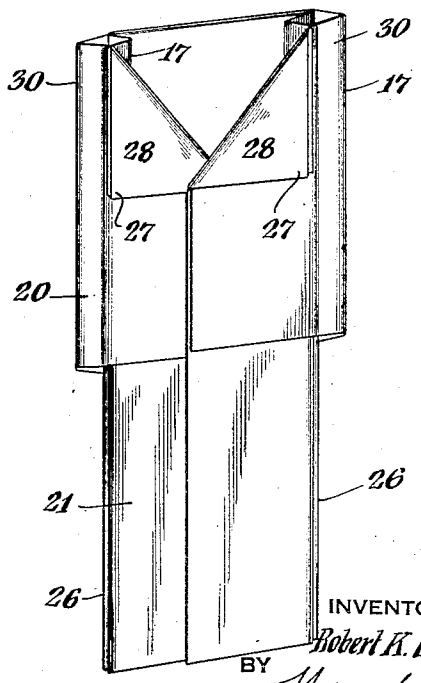


Fig. 5



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Fig. 6

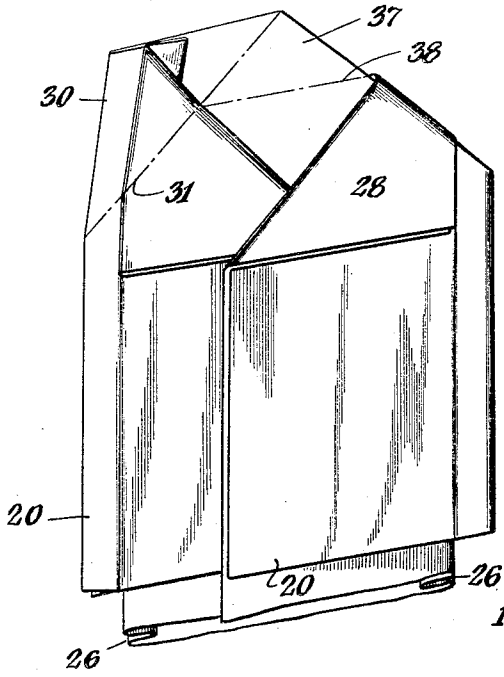


Fig. 7

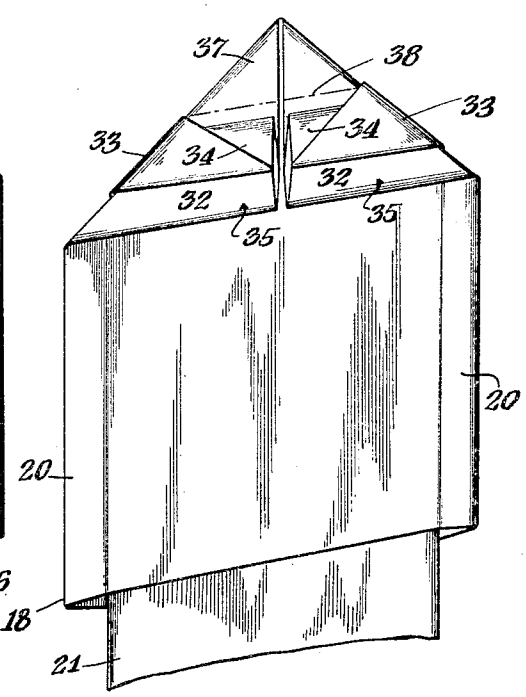


Fig. 8

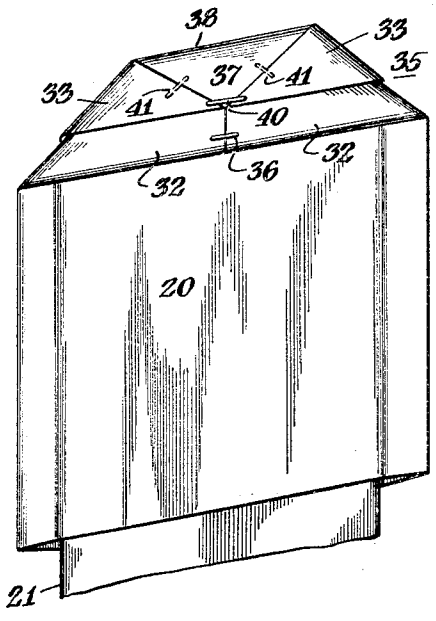
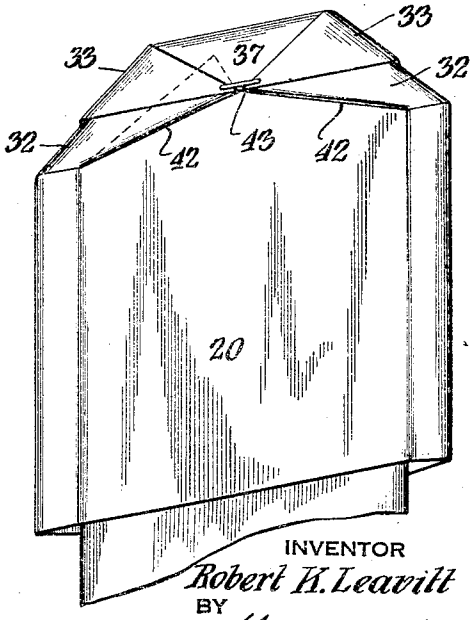


Fig. 9



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UNITED STATES PATENT OFFICE

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RAINCOAT

Application filed September 5, 1931. Serial No. 561,341.

My invention relates to raincoats and particularly to an inexpensive raincoat especially adapted for emergency use.

A feature of my invention is a raincoat made of light, inexpensive, waterproof material.

A second feature is a raincoat provided with a cape, collar and lapels of attractive design and made without a single seam.

A third feature is a raincoat made from a single sheet of material.

A fourth feature resides in forming all the various parts of a raincoat of the type mentioned from a single sheet of material in a series of simple folding operations.

In carrying out my invention I form a raincoat from a single sheet of suitable material folded once transversely to form a cape portion and then folded twice longitudinally to form the front and part of the sides of the raincoat. The upper inner corner portions of the sheet, as thus folded, are turned down to form lapels and part of a collar. The upper outer corner portions and a center portion above and between the lapels are folded over on the back to form the back portion of the collar. The portions folded over on the back are suitably fastened together so that there are no loose parts or ends.

Before folding the sheet as described above score lines or marks are made parallel with the longitudinal edges of the sheet to facilitate the formation of side pleats rendering the coat somewhat flexible and expansible. Portions of the sheet are completely or partially cut away to provide armholes beneath the cape. When these portions are only partially out, flaps are provided for partially closing the space between the lapels to afford further protection against the weather.

In accordance with my invention single piece, seamless raincoats may be economically and simply made by following the procedure briefly outlined above and hereinafter described in greater detail in connection with the accompanying drawings.

In the drawings:

Figure 1 is a perspective view showing a figure wearing a raincoat made in accordance with my invention;

Figure 2 is a perspective view of the sheet from which the raincoat is formed by folding and also illustrates certain preliminary steps;

Figures 3 to 8 are perspective views showing various stages in the manufacture of the raincoat, Figures 3 and 4 illustrating the folding of the sheet to form cape and skirt portions, Figure 5 illustrating the manner in which lapels and part of the collar are formed, and Figures 6 to 8 illustrate the manner of completing the collar;

Figure 9 illustrates another method for forming the collar at the back of the raincoat;

Figure 10 is a perspective view illustrating a raincoat formed as in Figures 2 to 9 but provided with a greater number of side pleats to afford greater fullness and flexibility; and

Figure 11 is a fragmentary perspective view illustrating the manner in which the raincoat may be provided with flaps to partially close the lapel opening and afford greater protection.

Referring particularly to Figure 2, my raincoat is made from a single rectangular sheet 10 preferably of cellulosic material, such as cellophane, the sheet having the proper area for forming a raincoat of the desired size.

The sheet 10, which may be cut from a roll, is marked or scored at each side of the longitudinal center line thereof, with a plurality of lines 11 and a pair of lines 12 located centrally with respect to the lines 11, all the lines extending parallel with the longitudinal edges 13 and 14 of the sheet. Short transverse slits 15 are cut through the sheet slightly above the center thereof, the slits 15 extending between the extreme lines 11 of the groups of lines at each side of the sheet. Portions of the sheet are then cut out, in any desired manner, to provide armholes 16. The armholes 16 are equally spaced from the longitudinal center line of the sheet and are positioned slightly below its transverse center line. In the embodi-

ment illustrated, the armholes 16 extend slightly inwardly of the inner lines 11 and a relatively greater distance beyond the outer lines 11 at the respective sides of the sheet. The sheet 10 as thus marked or scored, slit and cut out, is ready to be formed into a raincoat of the type shown in Figure 1.

The longitudinal edges 13 and 14 of the sheet are then folded over or inwardly in overlapping relation on the body of the sheet about the lines 11 and 12 at the respective sides of the sheet. This folding may be effected by folding the sheet portions between inner lines 11 and the lines 12 upon the body of the sheet and then folding the outer portions of the sheet inwardly about the outer lines 11. Tucks or pleats are thus formed having inwardly extending folded edges 17 along the lines 12 and outwardly extending folded edges 18 along the lines 11. Longitudinal edges 13 and 14 are again extended and as a result of the folding operation the sheet 10 is creased along the lines 11 and 12, as shown in Figure 2.

The upper part 20 of the sheet is then folded over on the back of the sheet along a transverse line extending through the slits 15 as shown in Figure 3. The slits 15 facilitate this folding operation at the points on the transverse line where the sheet is creased so that the sheet does not buckle or bulge along the transverse folding line despite the creases along lines 11 and 12.

When the sheet is transversely folded, as described above, the longitudinal edges 13 and 14 are again folded over on the body of the sheet. Figure 3 shows this folding operation completed at the left side and partially completed at the right side, whereas Figure 4 shows the completion of this folding operation with edge 14 overlapping edge 13. As a result of this folding operation, the part 21 of sheet 10 forms a skirt, or body covering portion, and the part 20 forms a cape portion for the raincoat, the parts 22 and 23 of upper and lower portions 20 and 21, respectively, forming the front and part of the sides of the coat and the parts 24 and 25 forming the back and the remainder of the sides of the cape and skirt or body portions, respectively.

When sheet 10 is thus folded to form the skirt and cape parts of the coat, accordion-like pleats 26 result on the body or skirt part 21, the folded edges 17 of the pleats extending inwardly and the folded edges 18 extending outwardly, the latter edges, which are along lines 11, being in registration or alignment. On the cape portion 20 the folded edges 17 extend outwardly because, as will be apparent from the above description, this part of sheet 10 has been folded reversely.

The inner and upper corners 27 of the overlapping side portions of sheet 10, i. e. part of the cape and part of the skirt, are folded down along diagonal lines to form collar and lapel portions 28, as shown in Figure 5.

When the skirt, cape and lapel portions have been formed, the upper portions 30, Figures 5 and 6, are folded over on the back of the sheet along the diagonal lines 31 in Figure 6, which shows this operation partially completed. In Figure 7, which illustrates the rear of the coat at this stage, the parts 32 of the cape and skirt, together with the parts 33 of the lapels and most of the portions 34 of pleats 26 between slits 15 and armholes 16, Figure 2, form the back part 35 of a collar for the raincoat. The parts 32 may be fastened to each other in any suitable manner. As shown in Figure 8, I utilize a staple connecting the parts 32 and clinched at the under side thereof to hold them together. Staple 36 passes only through the parts 32 and does not penetrate the underlying part of cape 20 or the part of skirt 21 beneath the cape.

The triangular portion 37 above the line 38 is then folded over on the back of the skirt along this line and lies between the parts 33 and over the parts 34, Figure 8. The part 37 may also be fastened in any suitable manner as by sewing, etc. However, I utilize a second staple 40 holding the parts 33 together and overlying the end of the triangular part 37 to hold it down. Or I may utilize a pair of staples 41 passing through the parts 33 and 37 to fasten them together. In either case none of the staples 40 or 41 penetrates the underlying parts of the cape 20 and skirt 21.

If a collar extending straight across the back of the coat is not desired the parts 32 may be partially folded under along the lines 42, as shown in Figure 9. In such event, a single staple 43 passing only through the underturned portions of parts 32, and parts 33 and 34 may be utilized to secure these parts together and to hold down the part 37.

The skirt and cape portions may be formed with a plurality of accordion-like pleats 23, as shown in Figure 10, to provide greater fullness in the cape and skirt to accommodate the body of the wearer and render the raincoat more flexible particularly along and across the shoulders. This is simple to accomplish as all that is required is to score the sheet at each side with a greater number of parallel lines than shown in Figure 1 and fold the sheet on these lines to form the desired number of pleats.

It is to be noted that in all cases the pleats 26 extend continuously from the bottom of the skirt portion over and along the shoulders and down the cape portion. When a plurality of pleats are provided the folded edges 17 of the pleats extend inwardly in

the skirt portion, and outwardly in the cape portion because of the reverse fold of the sheet to form the cape portion 20. Likewise the folded edges 18 of the pleats 26 extend outwardly in the skirt portion 21 and inwardly in the cape portion 20.

If desired, the raincoat may also be provided with a flap or flaps 44, for partially closing the opening between the lapels 28 to afford further protection against the weather, as shown in Figure 11. Such a flap is formed, Figure 2, by cutting through the sheet 10 along the lines 45, 46 and 47 and retaining the part 48 (which has previously been described as wholly cut away to form the armholes 16) hinged to the sheet 10 at 50. Flaps 44, Figure 11, may thus be provided at either or both sides of the raincoat for partially closing the opening between the lapels 28, the flaps 44 extending from the edge of the armholes 16 and across the body of the wearer beneath the skirt and cape portions.

The coat may be provided with any desired type of fastening means for holding it closed when worn. For example, in Figure 1 I show a pair of discs 51, of cardboard or other suitable material, secured to each side of the front of the raincoat by rivets or the like, passing through the single thickness of the skirt portion 21. A tape or string 52 is attached to the discs 51 at one side of the coat and is adapted to be led across the wearer's breast to be wound and wedged between one disc 51 and the underlying outer surface of the skirt 21 on the other side of the coat.

It is to be noted that the pleats formed at the sides of the skirt and cape of the raincoat render it readily extensible to fit the body of the wearer. Thus, only a few differently sized coats need be carried by dealers in order to provide satisfactorily fitting coats for individuals of various sizes.

Because of the pleats the coat is also sufficiently flexible to permit free movement of the wearer's arms and shoulders without tearing the coat. The cape provides adequate protection to the wearer's arms and also allows a wide latitude of arm movement without discomfort or any damage to the coat.

Inasmuch as the raincoat is made without seams, and since the only fastening means utilized for the parts of the coat do not penetrate all the layers of material, there are no openings through the material to permit water or the like to enter and damage the wearer's clothes.

I have stated above that I prefer to use a cellulosic material such as cellophane for making the raincoat. Cellophane, glassine and other materials of like nature are quite pliable and strong, resisting considerable folding, bending or crumpling without a resulting rupture of the body of the sheets. In employing cellophane sheets for forming raincoats, the sheets may be bound with tape, adhesive or otherwise, overlying the edges to cover sharp edges and protect them against tearing. Further, cellophane is substantially waterproof and being relatively cheap is an ideal material from which to make raincoats in accordance with my invention.

However, it is to be understood that I may make the raincoats from sheets of any other desirable material, such as paper, textile fabric, oilcloth, rubber or other materials which may readily be waterproofed and easily folded to form a coat in accordance with my invention.

It will be seen from the above description that I have provided a raincoat which may be economically made in a series of simple operations from light, inexpensive, waterproof material. Such a raincoat may be sold at a very reasonable price, so that a person caught in a sudden storm may purchase a coat in a cigar store, department store, at a subway stand, or from a sidewalk vendor in order to protect his clothes from the storm. My raincoat is readily adapted to provide satisfactory protection in emergencies and yet may be sold at such a reasonable price that, although capable of being used several times, it may be discarded when the wearer has reached his destination and is no longer exposed to the storm.

Raincoats made in accordance with my invention may, if desired, be folded a number of times longitudinally and transversely and packaged for sale in small envelopes adapted to be placed in a desk drawer or carried in a handbag or brief case so that the raincoat may be kept available for use in emergencies.

I claim:

1. A seamless raincoat comprising a single rectangular sheet of suitable material, folded over on the back thereof along a transverse line at the upper portion of said sheet to divide said sheet into a cape-forming portion and a skirt-forming portion, portions of said sheet adjacent to each longitudinal edge being folded over on the front thereof to form the front and part of the sides of said cape and skirt, a triangular portion at each inner and upper corner of said folded sheet being turned down to form lapel portions, triangular portions at the upper outer edges of said folded sheet being folded over on the back thereof to form parts of a collar portion, the remaining triangular portion at the upper part of the back of said folded sheet between said lapel portions being folded over on the back of said sheet to form the second part of said collar.

2. A seamless raincoat comprising a single rectangular sheet of suitable material, a partially cut-away portion at one side of the longitudinal center line thereof to provide an arm-hole, a flap connected to said sheet at one side of said arm hole, portions adjacent to the longitudinal edges of said sheet being folded over on the front thereof to form the front portion and part of the side portions of said coat, triangular portions at the upper corners of said folded-over portions of said sheet being turned down to form lapels, said flap being adapted to extend across the front of said coat to partially close the opening between said lapels.

3. A seamless raincoat comprising a single rectangular sheet of material, said sheet being marked with a plurality of spaced lines at each side of and extending parallel with the longitudinal center line, creases formed along said spaced longitudinal lines extending alternately forwardly and rearwardly from the plane of said sheet, a transverse slit between the extreme lines of said groups of parallel longitudinal lines at each side of said sheet, said sheet being folded on the back thereof along a transverse line extending through said slits to divide said sheet into a cape portion and a skirt portion, the side portions of said transversely folded sheet being folded over on the front thereof to form the front and part of the sides of said cape portion and skirt portion, said creases forming pleats extending along the sides of said cape portion and skirt portion and said slits preventing buckling and/or bulging of said creases or pleats at said transverse folding line.

4. A seamless raincoat comprising a rectangular sheet of suitable material, the upper part thereof being folded over on the back thereof to form a cape portion, portions adjacent to each longitudinal edge of said sheet being folded over on the front thereof in an overlapping relation to the body of said sheet to form the front and part of the sides of the cape portion and skirt portion, the upper inner corners of said overlapping parts being turned down to form lapels, the outer upper corners of said folded sheet being folded over upon the back thereof to form part of a collar, that portion of said folded sheet which lies above and between the lapels being folded over upon the back of said sheet to form another part of said collar, said parts folded over on the back of said sheet being fastened together.

5. A seamless raincoat comprising a single rectangular sheet of suitable material, short transverse slits in said sheet being placed in spaced relation above the transverse center line of said sheet and at either side of the longitudinal center line of said sheet, cut-away portions to provide arm-holes at either side of said sheet and below said slits, the upper part of said sheet being folded over on the back thereof along a transverse line extending through said slits to divide the sheet into cape-forming portion and skirt-forming portion, portions of said sheet at each longitudinal edge thereof being folded over on the front thereof to form the front and part of the sides of said cape portion and skirt portion, a triangular portion at each inner upper corner of said folded sheet being turned down to form lapels, a triangular portion at each upper outer corner of said sheet being folded over on the back thereof to form part of a collar and a triangular portion at the upper part of the back of said sheet between said lapels being folded over on the back of said sheet to form another part of said collar.

6. A seamless raincoat comprising a single rectangular sheet of suitable material scored or marked at each side of the longitudinal center line thereof with a plurality of equally spaced lines extending parallel with the longitudinal edges of said sheet, short transverse slits being cut between the extreme lines of the group of lines at each side of said sheet and above the transverse center line of said sheet, said sheet being creased along each of said parallel lines, the upper part of said sheet being folded over on the back thereof along a transverse line extending through said slits to provide a cape portion formed of said upper part of said sheet and a skirt portion formed of the remainder of said sheet, portions adjacent to the longitudinal edges of said folded sheet being folded over on the front thereof to form the front and part of the sides of said cape portion and said skirt portion, said creases along said parallel lines forming pleats at each side of said cape and skirt portions.

7. A seamless raincoat comprising a single rectangular sheet of suitable material marked at each side of the longitudinal center line thereof with a plurality of equally spaced lines extending parallel with the longitudinal edges of said sheet, short slits between the extreme lines of the group of lines on each side of said sheet and above the transverse center line of said sheet, said sheet being creased along each of said parallel lines, the upper part of said sheet being folded over on the back thereof along a transverse line extending through said slits to provide a cape portion formed of said upper part of said sheet and a skirt portion formed of the remainder of said sheet, portions adjacent to the longitudinal edges of said sheet being folded over on the front of the body of said sheet in overlapping relation to form the front and part of the sides

of said cape portion and skirt portion, said sheet being folded along said creased lines to provide pleats at each side of said cape portion and skirt portion, triangular portions on each inner upper corner of said sheet being turned down to form lapels.

8. A seamless raincoat comprising a single rectangular sheet of suitable material marked at each side of the longitudinal center line thereof with a plurality of equally spaced lines extending parallel with the longitudinal edges of said sheet, short transverse slits between the extreme lines of the group of lines on each side of said sheet and above the transverse center line of the sheet, said sheet being creased along each of said parallel lines, the upper part of said sheet being folded over on the back thereof along a transverse line extending through said slits to provide a cape portion formed of said upper part of said sheet and a skirt formed of the remainder of said sheet, the longitudinal edges of said sheet being folded over on the front of the body of said sheet to form the front and part of the sides of said cape and skirt portions, said sheet being folded along said creased lines to provide pleats at each side of said cape and skirt portions, triangular portions at each inner upper corner of said folded sheet being turned to form lapels, a triangular portion at each upper outer corner of said folded sheet being folded over on the back thereof to form part of a collar and the triangular portion at the upper back of said sheet between said lapels being folded over on the back of said sheet to form another part of said collar.

9. A seamless raincoat comprising a single rectangular sheet of suitable material marked or scored at each side of the longitudinal center line thereof with a plurality of equally spaced lines extending parallel with the longitudinal edges of said sheet, short transverse slits between the extreme lines of said groups of lines at each side of said sheet and above the transverse center line of said sheet, cutaway portions spaced at each side of said sheet and below said slits to provide arm-holes, said sheet being creased along said parallel lines, the upper part of said sheet being folded over on the back thereof along a transverse line extending through said slits to provide a cape portion formed of said upper part of said sheet and a skirt portion formed of the remainder of said sheet, portions adjacent to the longitudinal edges of said sheet being folded over on the front of the body of said sheet to form the front and part of the sides of said cape and skirt portions, said sheet being folded along said creased lines to provide pleats at each side of said cape portion and skirt portion, a triangular portion at each inner upper corner of said sheet being turned down to form lapels, a triangular portion at each upper outer corner of said sheet being folded over on the back thereof to form part of a collar, a triangular portion at the upper part of the back of said sheet and between said lapels being folded over on the back of said sheet forming another part of said collar, said parts folded over on the back of said sheet being fastened together.

In testimony whereof, I have signed my name to this specification this 31st day of August, 1931.

ROBERT K. LEAVITT.