Sept. 2, 1952 P. C. KOLB ET AL 2,608,690

OUTER GARMENT

Filed Sept. 27, 1949 2 SHEETS—SHEET 1

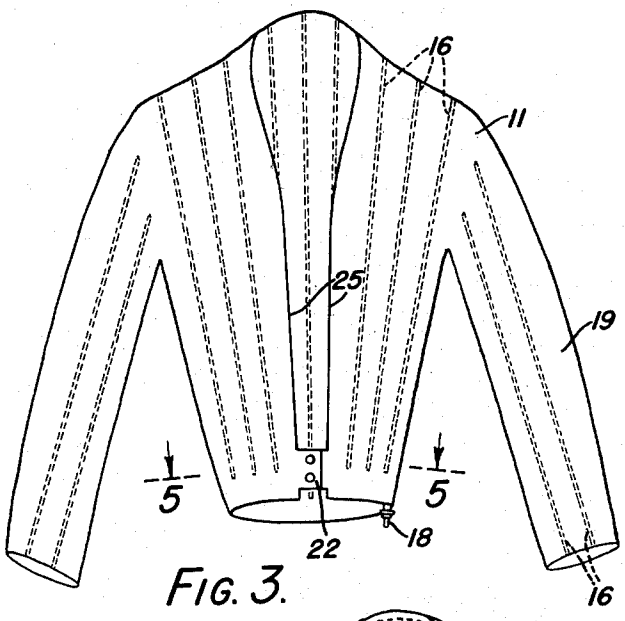


FIG. 3.

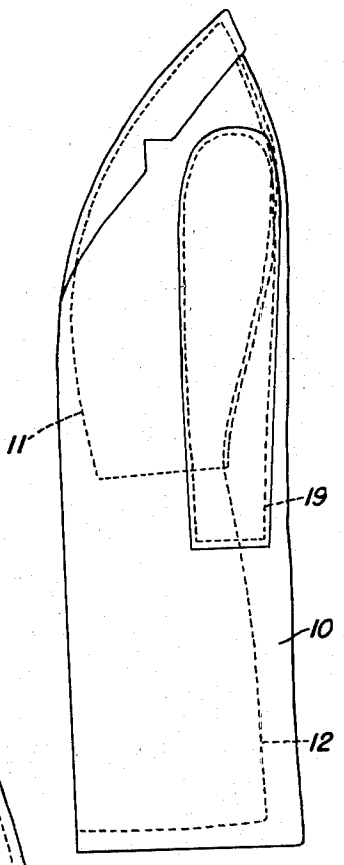


FIG. 2.

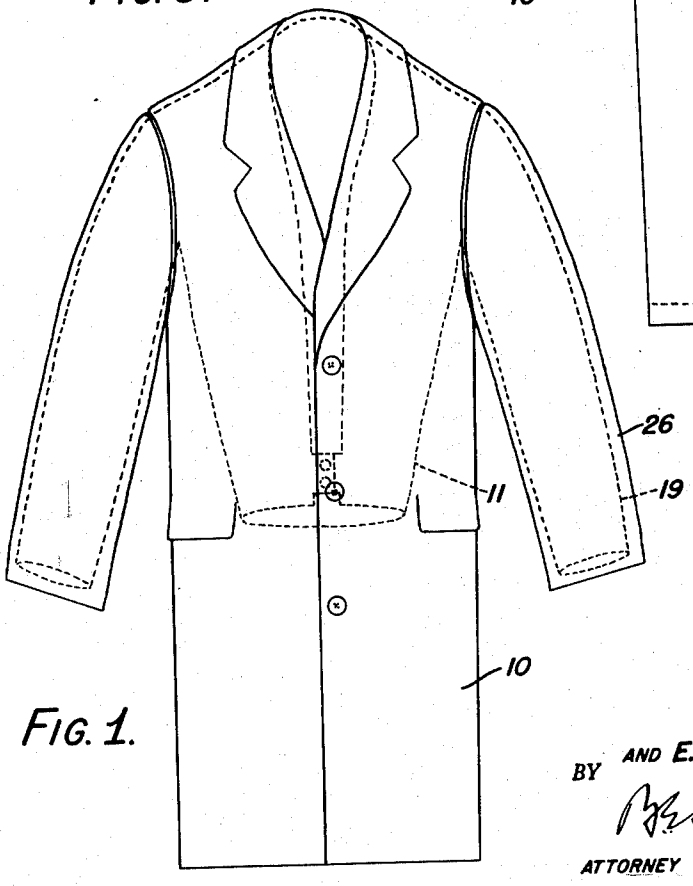


FIG. 1.

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OUTER GARMENT

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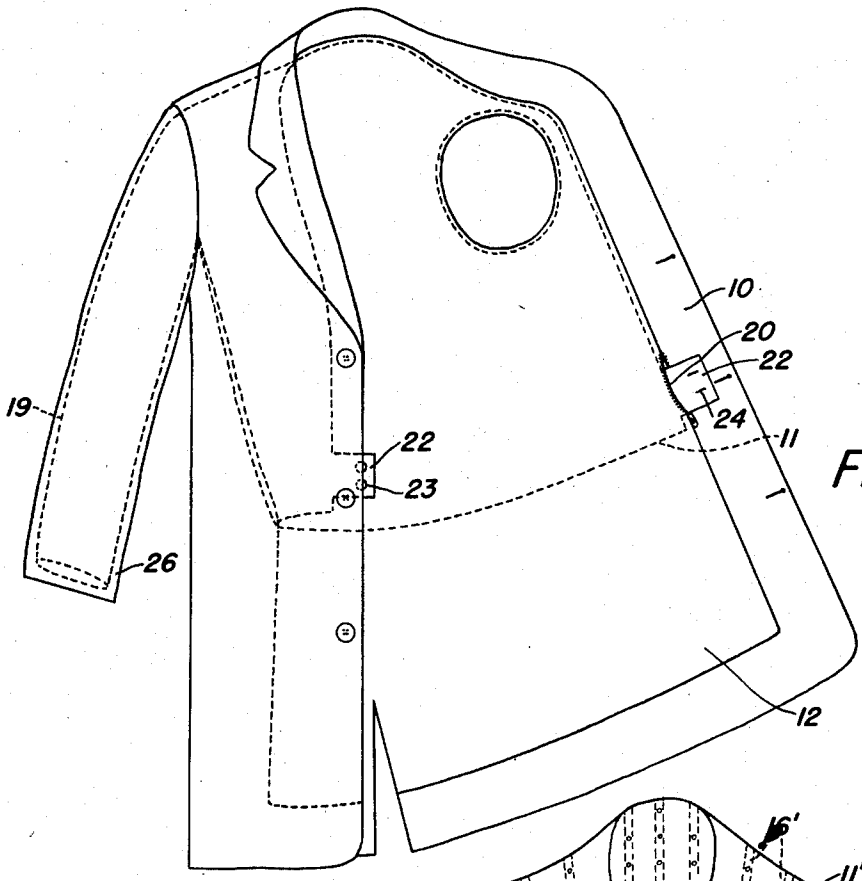


FIG. 4.

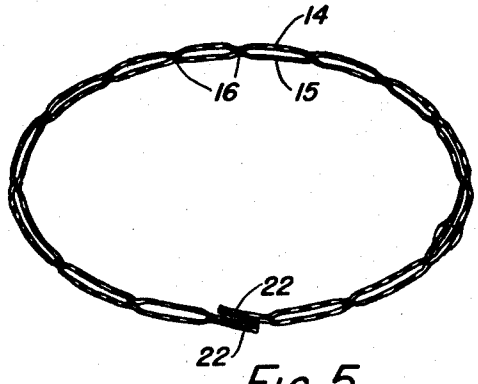


FIG. 5.

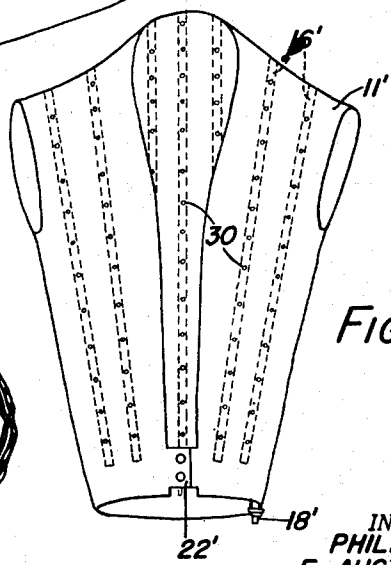


FIG. 6.

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OUTER GARMENT

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Application September 27, 1949, Serial No. 117,982

2 Claims. (Cl. 2—97)

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The present invention relates to coats, outer coats, overcoats, jackets, mackinaws, and other outer garments. More particularly, it relates to garments for outer wear having an inner or an inter-lining for increased warmth.

The conventional coat having provision for an inner lining never fits the wearer properly. It has to be made big enough so that the inner lining can be buttoned in it. Hence it does not fit properly when the inner lining is out of it. On the other hand, to avoid having it too loose fitting without the lining it is made really smaller than it should be for the lining and it always looks and is bulky and cumbersome when the lining is in place.

Moreover, a conventional type coat is a heavy garment when it has the inner lining fastened in it. Furthermore, it is a somewhat irksome task to fasten an inner lining in the conventional type coat or to remove it therefrom.

One object of the present invention is to provide an outer garment with an inner or inter-lining which will insulate the garment against cold or wind without adding appreciable weight to the garment.

Another object of the invention is to provide an outer garment with an inner or inter-lining which will make the garment superior in warmth to conventional inner lined garments without adding weight or bulk.

A further object of the invention is to provide an outer garment having an inner or inter-lining which will fit well under all conditions of use.

A further object of the invention is to provide an outer garment having an inner or inter-lining which is more fluid to the movements of the wearer, less prone to bind, and more comfortable to wear.

Another object of the invention is to provide an outer garment having an inner or inter-lining in which the lining is made of a non-porous material so as to render the garment a protection against the rain as well as against cold.

Still another object of the invention is to provide a wearer with one garment for all weather and all temperatures and which has an inner or inter-lining that does not have to be fastened in or removed with change in weather conditions.

Another object of the invention is to provide an outer garment with an inner or inter-lining in which the added warmth of the inner lining can be made effective or rendered ineffective substantially instantaneously.

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A further object of the invention is to provide an outer garment having an inner or inter-lining which may always remain in the coat and which is readily inflatable to provide the extra warmth desired and which is readily deflatable when extra warmth is no longer desired or needed.

Another object of the invention is to provide an outer garment which may have an inflatable inner lining fastened in it permanently that, when inflated, gives increased warmth.

A still further object of the invention is to provide an outer garment having an inner or inter-lining which can be marketed at a lower price than conventional lined outer garments.

Other objects of the invention will be apparent hereinafter from the specification and from the recital of the appended claims.

In the drawings:

Fig. 1 is a front elevation and Fig. 2 is a side elevation of an outer garment made according to one embodiment of this invention;

Fig. 3 is a front elevational view of one type of inner or inter-lining that may be used in the outer garment;

Fig. 4 is an elevational view showing in part the inside of the garment with the inner or inter-lining fastened therein;

Fig. 5 is a sectional view of the inter-lining taken on the line 5—5 of Fig. 3; and

Fig. 6 is an elevational view of a modified form of inter-lining.

In a garment made according to the present invention an inflatable inter-lining is provided between the outer shell and the inner-lining of the garment. When it is desired to add extra warmth to the garment the inter-lining is inflated with a gas, preferably a gas that is less thermally conductive than air, such as carbon dioxide, although neon, argon and other similar gases may also be employed for the purpose.

Referring now to the drawings by numerals of reference 10 denotes the outer shell or outside portion of a garment made according to one embodiment of this invention; 11 is the inter-lining or jacket, and 12 is the inner lining. The outer shell 10 may be made of wool, rayon, cotton, rubber, plastic, or other conventional material. The inter-lining 11 may be made from a non-porous, inflatable material such as plastic, rubber, or treated fabric. The inner-lining 12 may be made of silk, or rayon, or any other conventional material.

In the embodiment of the invention shown in Figs. 1 to 4 inclusive, the inter-lining is in the

form of a complete inner jacket, as clearly shown in Fig. 3, which is designed to cover the shoulders, back, chest and arms and to extend to the waist line of the wearer of the garment. The inter-lining may be attached at the shoulders, along the sides or in any other convenient manner, to the outer shell of the garment by stitches, snap-fasteners, zippers, buttons or other known means.

The inter-lining is made of two sheets of material denoted at 14 and 15 in Fig. 5. These are sealed together along their edges so that the inter-lining will be tight when inflated. They are preferably sealed together at other points, as denoted at 16 (Figs. 3 and 5) to control the thickness to which the inter-lining may be inflated and obtain substantially uniform increase in thickness over the whole area of the lining upon inflation.

The inter-lining is adapted to be inflated, as already mentioned, with a gas which is less thermally conductive than air. Carbon dioxide is one gas of this type; and it is relatively cheap. Neon and argon are other gases which would be suitable for the purpose. A self-closing valve 18 is provided for inflating or deflating the inter-lining. This may be located at any suitable point.

The insulating and inflating gas may be supplied, when desired, from a gas cartridge provided with an opening to fit the valve 18. Cartridges containing enough gas to inflate the inter-lining once can be made and sold very cheaply and might be vended by any clothing store.

In the drawings, the valve 18 is shown secured in the lower edge of the inter-lining. The portions 16, along which the outer and inner sheets 14 and 15 are sealed together, terminate, in the body of the inter-lining, short of this lower end, and in the arms 19 of the inter-lining terminate short of the shoulders. Thus ducts or channels are provided whereby the inflowing gas may flow to all parts of the inter-lining and uniformly inflate the inter-lining, thereby avoiding bulges or swells.

Preferably the inner lining 12 is not attached to the outer shell 10 except at the shoulders and along the facing or front seams at the opening of the garment. The lining 12 is attached to the facings in the usual manner beginning at the neck of the garment and running down the seam to a point six inches or so above the waist line of the garment. At this point a zipper 20, snap-fastener, buttons or other suitable means are inserted for closing the seam. Tabs 22 are preferably provided at the bottoms of the inter-lining. These tabs are adapted to be pulled through the zipper or other openings in the seams when the garment is buttoned. One tab has buttons 23 on it; and the other tab is provided with button-holes 24 for these buttons. By buttoning the tabs together, the waist of the inter-lining can be drawn snugly around the wearer's waist. Thus, cold air entering at the bottom of the coat may be prevented from blowing upwardly about the chest and back of the wearer. By simply closing the collar of the garment, then, the wearer can completely insulate and protect his chest, stomach and back from the cold. Fig. 2 shows how the inter-lining 11 serves to draw the loosely hung inner lining 12 in about the wearer when the tabs of the inter-lining are thus buttoned together.

In the embodiment of the invention shown in Figs. 1 to 5 inclusive the inter-lining is made with sleeves 19 that fit into the sleeves 26 of the garment between the outer shell and inner lining thereof. If desired, however, the inter-lining might be made without sleeves as shown in Fig. 6. Here, the seams or inter-cellular portions 16' of the inter-lining are made somewhat wider than in the first-described embodiment of the invention and are provided with spaced vent holes 30. Any inflatable material to be successful for its purpose should be non-porous. The vent holes 30 enable the body to breathe and prevent condensation on the inside of the inter-lining. Except for the provision of the vent-holes and the lack of arms, the inter-lining 11' may be the same in structure as the inter-lining 11 shown in Fig. 3, and parts corresponding to parts of the inter-lining of Fig. 3 are denoted by the same reference numerals primed. The inter-lining of Fig. 6 will keep the wearer's torso warm.

Obviously, vent holes may be provided, if desired, in the seams or intercellular portions in the embodiment of the invention shown in Figs. 1 to 5 inclusive.

Since the material used in the inflatable inter-lining 11 is non-porous, and since the inter-lining, when inflated, provides an insulating spaced filled with an inert gas, and since the gas itself is an insulator, it will be seen then that we have provided a construction that will insulate the wearer against cold and wind. This construction may be employed not only on heavy garments of outer wear but also on topcoats, raincoats and other sports and light-weight outer wear; and it will make such garments superior in warmth even to heavier garments, such as overcoats, and wool, glass-wool, kapoc, and other inner-lined garments. Moreover, when the inter-lining is deflated, the garment again becomes a topcoat, raincoat, or other light-weight garment, both in weight and appearance, without removing the inter-inflatable lining, for this inter-lining can be made of extremely light-weight plastic. Furthermore, because the inter-lining is non-porous the garment is made rainproof if it was not so already.

Our construction provides the wearer with a garment that is suitable for all weather. It provides a light-weight and cool coat for warm wear and a light-weight and warm coat for colder conditions. When the inter-lining is insulated, the garment is lighter by pounds than the conventional overcoat or other comparable heavy-weight outer garment, and it is also lighter by pounds than the conventional outer garment lined in conventional fashion with wool, glass-wool, or other lining material.

When a garment made according to the present invention is deflated, the bulk found in conventional outer-garments or conventional innerlined outer garments is eliminated. The garment will yield readily with movements of the wearer; it will not bind; and it will be much more comfortable to move around in than any conventional outer garment for a similar purpose.

Because the material used in the inter-lining may be of very thin plastic, a garment made according to the present invention can be made to fit the wearer better than conventional garments using wool, glass-wool, or other bulky types of inner linings. Moreover, the inflatable inter-lining in no way limits the choice of fabrics used for the outer shell of the garment. Because of the low cost of the inflatable material, a garment made according to the present invention can also be made and sold at a lower price than con-

ventional heavy-weight or inner-lined garments for the same purpose.

While the invention has been described in connection with coats and other garments of outer wear for covering the upper part of the body it may be applied also to trousers, knickerbockers, coveralls, and other garments of outer wear for covering the lower portions of the body or both the lower and upper portions.

While the invention has been described in connection with particular embodiments thereof, it is capable of further modification, and this application is intended to cover any adaptations, uses, or modifications of the invention following, in general, the principles of the invention and including such departures from the present disclosure as come within known or customary practice in the art to which the invention pertains and as may be applied to the essential features hereinbefore set forth and as fall within the scope of the invention or the limits of the appended claims.

Having thus described our invention, what we claim is:

1. A coat comprising an outer shell, an inner lining which is fastened to the outer shell only at the shoulders and along the front seams at the opening of the garment, an interlining between the outer shell and the inner lining, said interlining being in the form of an inflatable jacket which has tabs at its bottom passing through openings in the inner lining, and means for fastening said tabs together to cause the inner lining and the lower part of the jacket to fit snugly about the body of the wearer while allowing the outer shell to hang freely from the shoulders of the wearer.

2. A coat comprising an outer shell, an inner lining which is fastened to the outer shell only at the shoulders and along the front seams at the opening of the garment, and an inter-lining between the outer shell and the inner lining which is fastened to the outer shell, said interlining being in the form of an inflatable jacket which has a body portion and sleeves and which comprises two thin layers which are sealed together around their edges and at intermediate points, both in the body portion and in the sleeves, a valve through which an inflating, insulating gas may be admitted to or released from the jacket, a pair of tabs at its bottom passing through openings in the inner lining, and means for fastening the tabs together to draw the inner lining and jacket tight about the wearer's body while allowing the outer shell to hang freely from the wearer's shoulders.

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