July 20, 1948. O. L. SIMONSEN 2,445,458

CLOTHES FORM

Filed June 18, 1945 3 Sheets-Sheet 1

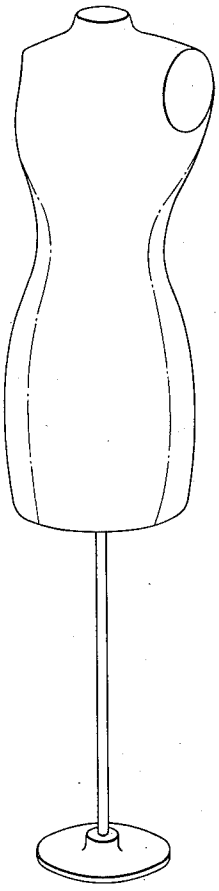


FIG. 1.

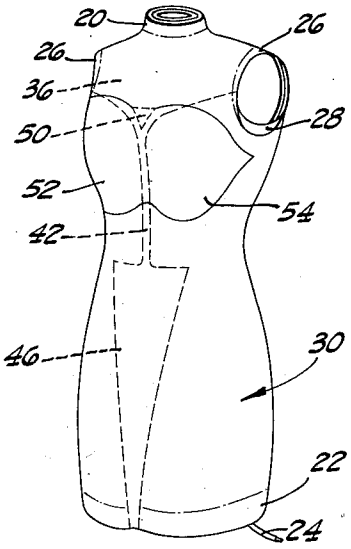


FIG. 2.

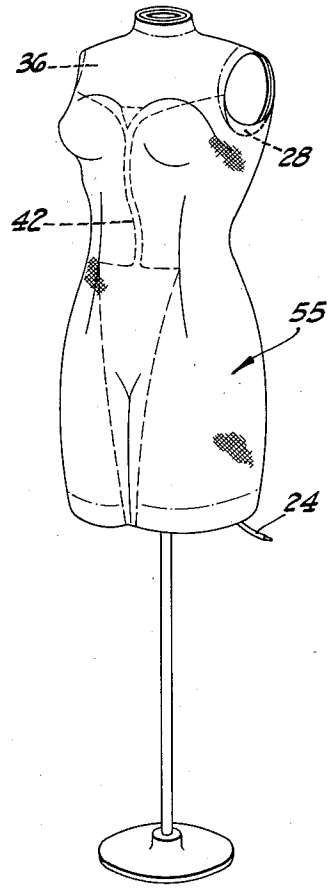


FIG. 3.

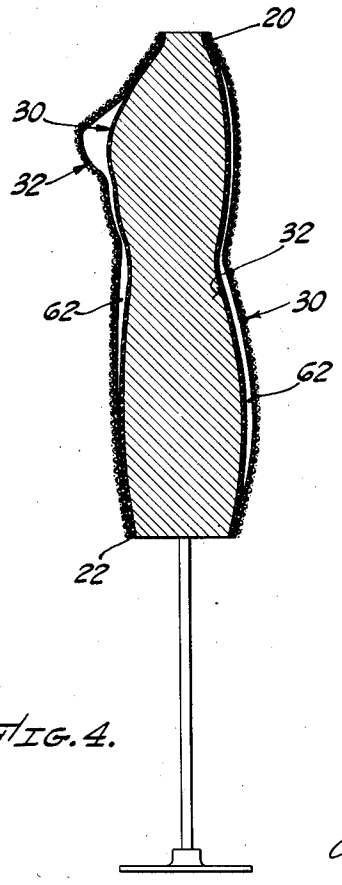


FIG. 4.

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CLOTHES FORM

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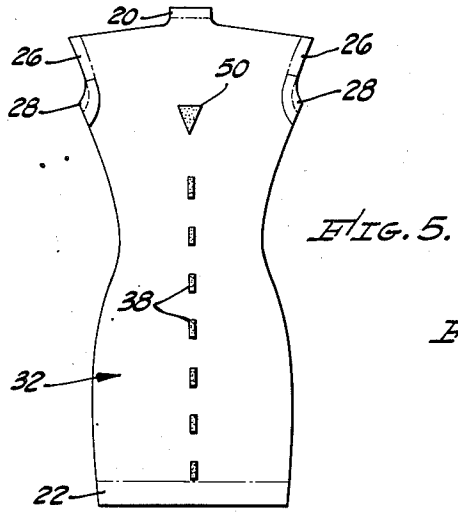


FIG. 5.

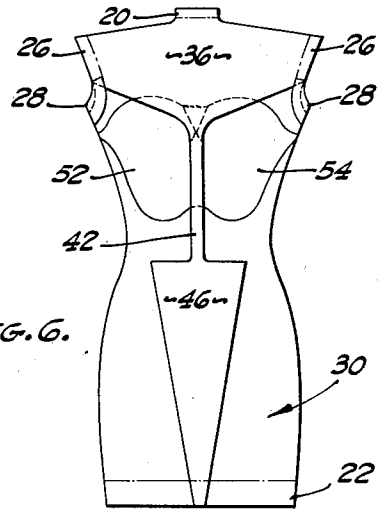


FIG. 6.

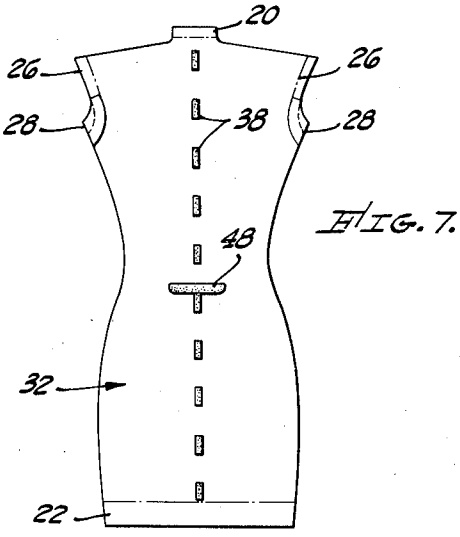


FIG. 7.

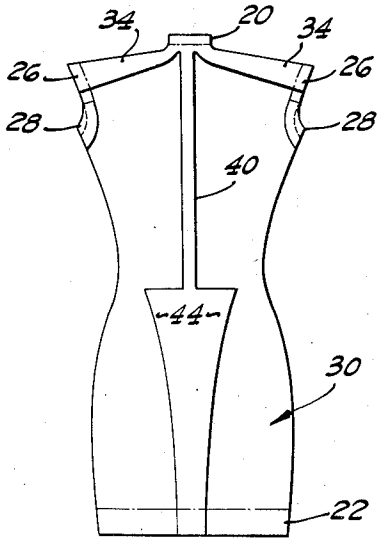


FIG. 8.

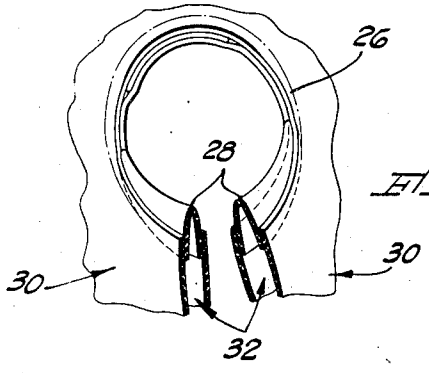


FIG. 9.

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CLOTHES FORM

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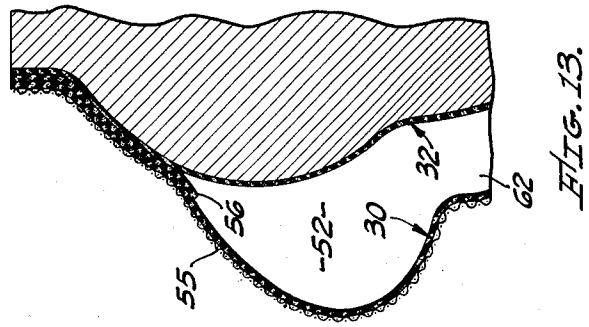


FIG. 13.

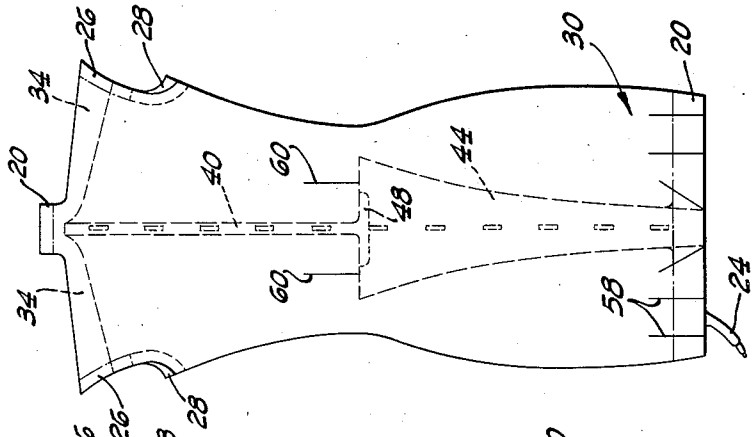


FIG. 11.

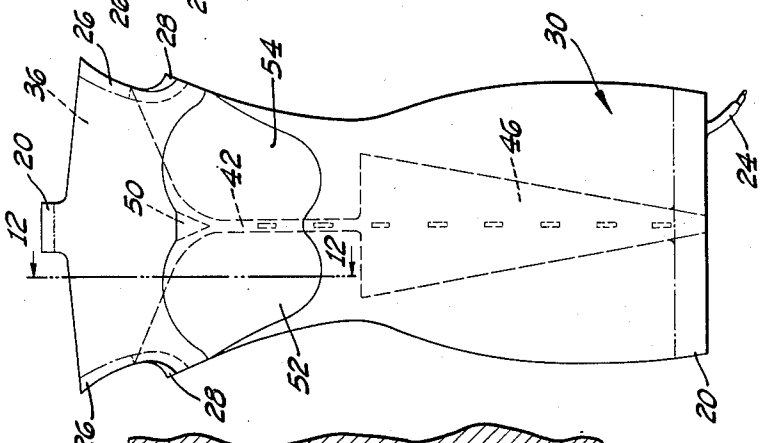


FIG. 10.

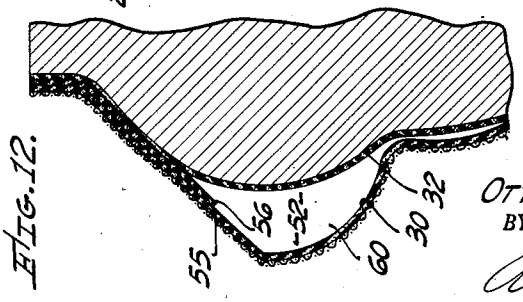


FIG. 12.

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UNITED STATES PATENT OFFICE

2,445,458

CLOTHES FORM

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Application June 18, 1945, Serial No. 599,998

13 Claims. (Cl. 223—67)

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This invention relates to inflatable clothes forms. It is a common practice in the dress-making and tailoring profession to make a cloth form or lining from some relatively coarse material and then mount it on a clothes dummy or standard to be used for the purpose of fitting dresses or other garments. The lining is first made to the precise (i. e., tight or snug) measurements of an individual so that it may accurately represent the person who will not thereafter have to appear in person each time it is necessary to have a fitting. The use of such cloth forms also obviates the necessity for protracted periods of standing during the fitting operations.

It has long been a vexing problem, however, to fill out satisfactorily the space between the relatively plain standard and the cloth form in such manner that the natural contours of the form will appear in uniform firmness or rigidity corresponding to the outlines of the individual for whom the form was made. Various schemes have been suggested for blowing up one or more balloons between the standard and this cloth form, but these have proven unsatisfactory for one reason or another and hence have not achieved commercial importance. This fact is well illustrated by the fact that the large moving picture studios, which use thousands of these dress linings, daily inflate them by the tedious method of stuffing cotton in the space between the standard and the lining.

In contrast, the present invention provides a clothes form in the nature of two concentric and connected walled envelopes or layers which may be readily inflated between a clothes dummy and a dress lining mounted thereon, a particular feature of said clothes form being that in use it does not expand equally in all directions as would an ordinary balloon, but rather it is constructed to be inflated in conformity with the natural contours of the human body as outlined or modified by the superimposed liner of the particular individual for whom it was made. Such form, when inflated apart from the clothes dummy and lining, will still maintain the general contours of the human body.

Other features and advantages of the invention will be apparent from the present description taken in conjunction with the accompanying drawings, wherein:

Fig. 1 is an ordinary clothes dummy or standard shown in perspective with a modified standard which may optionally be used with my clothes form shown in phantom lines;

Fig. 2 shows my inflatable clothes form adapted to be mounted on the standard of Fig. 1;

Fig. 3 is a perspective of a dress lining which has been slipped over the standard and inflatable form of Fig. 2;

Fig. 4 is a longitudinal section of Fig. 3;

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Figs. 5 to 8, inclusive, are elevational views showing the inner construction of my inflatable clothes form which is made with two layers, Fig. 5 being a front view of the outside of the inner layer, Fig. 6 an inside view of the front of the outer layer, Fig. 7 the outside of the rear of the inner layer, and Fig. 8 the inner surface of the rear of the outside layer;

Fig. 9 is a side elevation of that portion of the inflatable form surrounding an arm, with the portion at the armpit shown in section;

Fig. 10 is a front elevation of my inflatable dress form;

Fig. 11 is a rear elevation of the clothes form of Fig. 10;

Fig. 12 is a sectional view along the line 12—12 of Fig. 10, showing the form inflated for a small bust; and

Fig. 13 is a sectional view similar to Fig. 12, showing the form inflated for a large bust.

My inflatable clothes form may be employed with any of the conventional standards such as that illustrated in Fig. 1. However, my form may also be used with a dummy having only the shoulder portion approximately natural size and the remainder of the torso laterally reduced as illustrated in phantom lines in Fig. 1. As most types of standards are made in three sizes—small, medium, and large—my inflatable form may also be made in a like number of sizes so that its degree of inflation may not be excessive as might be the case if a fitting for a large person were attempted from a small standard.

My clothes form is here illustrated as a dress form. The inner envelope 32 of the inflatable form which fits next to the standard is relatively plain, and since it receives a certain amount of wear in being pulled down over the standard and in being removed from time to time, I generally construct it of relatively thick elastomeric material such as natural rubber, or synthetic rubbers like chloroprene, Buna N, etc., of the order of .02 gauge in thickness. The outer envelope 30 possesses a generally corresponding outline and may be of lesser thickness, say, on the order of .009 gauge, since it will generally be required to expand more than the inner envelope. Both elastic envelopes have openings at the neck, either arm, and at the bottom whereby the dress form may be slipped over the top of a standard for fitting, and after use may be removed and hung upon a conventional coat hanger for storage.

The inner and outer envelopes of the dress form are fastened together in such manner that all inflatable areas are in communication, the particular effectiveness of the present form being dependent in considerable amount upon the manner in which these two layers of the form are connected. First, the two concentric envelopes 30 and 32 are secured together at their top and bot-

tom edges **20** and **22**, respectively, forming margins on the order of 2½ inches along the bottom and a somewhat smaller width at the top. An attachment valve **24** of conventional type is provided, for example, along the bottom margin, for inflating the chamber **62** between the two layers.

A similar margin **26** surrounds either arm, at the lower edge of each of which is mounted a crescent-shaped wedge member **28** shown particularly in Fig. 9. Normal sized arm openings are formed in each of the envelopes, and the function of this crescent-shaped member **28** inserted along the lower periphery of the sleeve opening is to permit expansion of the outer envelope **30** away from the inner envelope **32** at this point in order to fill out the dress liner **34** of a person who is fat or broad beneath the arms.

Over the shoulders and below the neck the two layers **30** and **32** are affixed in registration as shown in the areas numbered **34** and **36**, respectively. Along a longitudinal medial line, the inner and outer layers are joined both front and back by a series of intermittent elongated sponge rubber units **38** which are on the order of ⅜ inch thickness. Reinforcing strips **40** and **42** on the back and front, respectively, are attached to the inside of the outer layer in registration with the spaced sponge rubber units **38** along the upper portion of the torso.

As a continuation of these strips **40** and **42** along the lower portion of the torso, occur triangular reinforcing members or plastrons **44** and **46** on the back and front, respectively, and affixed to the inner surface of the outer layer and in registration with the lower half of the spaced sponge rubber units **38**. These plastrons may conveniently be of a thickness corresponding to that of the inner envelope of the form. Their function is to give direction to the expansion of the thinner outer layer **30**, the front plastron **46** being positioned so that its upper wider portion will correspond approximately to the flat stomach portion of a person, then tapering downward to allow for expansion produced by the thighs. The back plastron **44** is similarly shaped, the upper wedge-shaped portion corresponding to the lumbar section of the back. A lateral strip of sponge rubber **48** upon the back of the inner envelope serves to provide a broader base of attachment for the lateral edge of rear plastron **44**.

At the upper terminus of front longitudinal support **42** there is mounted a wedge-shaped section **50** of sponge rubber similar in thickness to units **38**, its upper edge serving to define the limit of front registration **36** of the inner and outer layers. The function of triangular wedge **50** is to represent the natural recess between the breasts at this point.

Special provision is made for expansion of the breast sections of the outer envelope **30**. Since, obviously, these portions will have to expand farther than the rest of the layer, this result may be facilitated either by having such sections more loosely constructed (e. g., possessing folds when not inflated) or else by constructing them of more elastic material (e. g., thinner gauge) than the rest of the outer layer **30**. Consequently, they may be made integral or not with the rest of outer layer **30** as convenience of fabrication dictates. In either event, however, it has been found advisable to delineate a direction of expansion of breast sections **52** and **54** within the corresponding cavities of dress form **55** by providing along the upper margin of each, say, along the upper quarter, a shield **56** of less elastic material in registration with the inner surface of the breast sections **52** and **54** of outer layer **30**.

As best seen in Figs. 12 and 13, these shield portions **56** insure that the breast cavities of the dress form will expand in the direction of the natural curvature of the breast. That is, a large breast is not a small breast which has been expanded spherically, but is rather one which has expanded downward as well as outward, as shown in Fig. 13, and by virtue of these shields **56**, the expansion of breasts **52** and **54** within the dress form **55** assumes such shape. The layer **56** may, if desired, continue up to the neck of the dress form between the inner and outer walls, to lend additional rigidity to this portion of the form.

Additional shaping of the dress portion draped from the buttocks region may be provided by darts **58** along the lower margin of the outer layer **30** of the inflatable form, as well as by darts above the upper edge of the rear plastron **44**, such as indicated by numeral **60**.

While the space **62** between the inner and outer layers **30** and **32** of the expansible form will usually be inflated by air or other gas, such fluid may also be a liquid such as water, and expansion can thus be effected by connecting valve **24** with the local water system instead of to a supply of gas or compressed air.

While numerous references have been made herein to the particular use of my expansible clothes form to model women's dresses and the form has likewise been referred to as a "dress form," it will be apparent that the use of my form is in no wise limited exclusively to modeling dresses, but such forms may be utilized for fitting coats, blouses, shirts, etc., for men as well as women.

Various modifications will be apparent to those employing my invention without departing from the spirit and scope thereof, as defined in the following claims.

I claim:

1. An inflatable clothes form comprising an inner and an outer envelope of elastic and impermeable material, said envelopes being joined along their edges and intermittently along longitudinal medial lines in front and back, respectively, said outer envelope having in registration with its inner surfaces in front and back, respectively, a plastron extending approximately from the waist line to the lower margin, said plastrons being of less elastic material than said outer envelope.

2. An inflatable clothes form comprising: an inner and an outer envelope of elastic and impermeable material, said envelopes being joined along their edges and intermittently along longitudinal medial lines in front and back, respectively, said outer envelope having breast portions more extensible than the rest of said outer envelope, and said breast portions having a layer of lesser elasticity along their upper section whereby the outward expansion of the breast portions is directed downward.

3. An inflatable clothes form comprising: an inner and an outer envelope of elastic and impermeable material, said envelopes being joined along their edges and intermittently along longitudinal medial lines in front and back, respectively, said outer envelope having in registration with its inner surfaces in front and back, respectively, a plastron extending approximately from the waist line to the lower margin, said plastron being of less elastic material than said outer en-

velope, and breast portions more extensible than the rest of said outer envelope, said breast portions having a layer of lesser elasticity along their upper section whereby the outward expansion of the breast portions is directed downward.

4. In an inflatable clothes form of the type described including inner and outer layers sealed along their edges and provided with arm openings, a substantially crescent-shaped, expansible wedge member mounted between said edges along the lower side of an arm-opening and in registration with both the inner and outer layers of the clothes form to provide greater thickness upon inflation.

5. An inflatable clothes form comprising: an inner and an outer envelope of elastic and impermeable material, said envelopes being joined along their edges and intermittently along longitudinal medial lines in front and back, respectively, said envelopes being provided with arm openings and being joined along the lower edges of each arm opening by a substantially crescent-shaped wedge member, said outer envelope having in registration with its inner surfaces in front and back, respectively, a plastron extending approximately from the waist line to the lower margin, said plastrons being of less elastic material than said outer envelope, breast portions more extensible than the rest of said outer envelope, said breast portions having a layer of lesser elasticity along their upper section whereby the outward expansion of the breast portions is directed downward, said clothes form having a continuous inflatable cavity extending approximately from the upper edge of the breasts on the front and from the lower edge of the shoulders on the back down to the lower periphery of the form.

6. In an inflatable clothes form of the type described, an expansible breast section, the upper portion of which comprises a layer of less expansible material to resist expansion upon increase in fluid pressure whereupon the expansion of said section therebelow is relatively greater to form a substantially elliptical rather than a spherical pattern.

7. An inflatable clothes form comprising inner and outer envelopes sealed together along their top and bottom margins, medial interconnecting means extended from substantially the waist line to the lower margin to limit the separation of said envelopes, said outer envelope being formed with breast areas of relatively great expansibility above said waist line, said inner and outer envelopes being sealed together above said breast areas to prevent inflation thereabove.

8. The construction recited in claim 7 characterized in that a layer of less expansibility than the material of said outer envelope is secured thereto along the upper edge of said breast areas to resist movement under increased internal fluid pressure to permit of a relatively greater expansion therebelow.

9. An inflatable clothes form comprising an inner envelope adapted to enclose closely a dummy, an outer envelope sealed to said inner envelope at its margins, said outer envelope being provided with a breast area of relatively great expansibility, means securing together said outer and inner envelopes above said breast area to prevent inflation and to maintain area contact, and means to limit the relative movement between said inner and outer envelopes below said breast area.

10. An inflatable clothes form comprising inner and outer envelopes sealed together along their margins, said outer envelope having in registration with its inner surfaces in front and back, respectively, a plastron extending approximately from the waistline to the lower margin, said plastron being of less elastic material than said outer envelope.

11. An inflatable clothes form comprising inner and outer envelopes sealed along their margins, said envelopes being provided with arm openings and being joined along the lower edges of each arm opening by a substantially crescent-shaped wedge member, said outer envelope having in registration with its inner surfaces in front and back, respectively, a plastron extending approximately from the waistline to the lower margin, said plastron being of less elastic material than said outer envelope.

12. An inflatable clothes form comprising inner and outer envelopes joined along their margins and intermittently along longitudinal medial lines in front and back, said envelopes being provided with arm openings and being joined along the lower edges of each arm opening by a substantially crescent-shaped wedge member.

13. An inflatable clothes form comprising an inner envelope adapted to closely enclose a dummy, an outer envelope sealed to said inner envelope at its margins to thereby form an inflation chamber, said envelopes being joined intermittently along longitudinal medial lines in front and back, respectively.

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The following references are of record in the file of this patent:

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