Dec. 1, 1953 S. E. ROSENBERG 2,660,762

METHOD OF MAKING DIPPED LATEX GARMENT

Filed Oct. 6, 1951

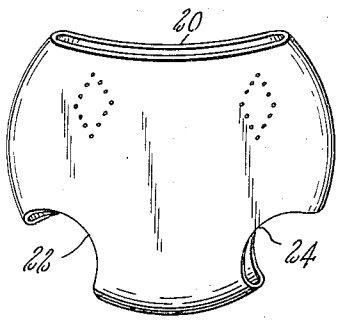


Fig. 1.

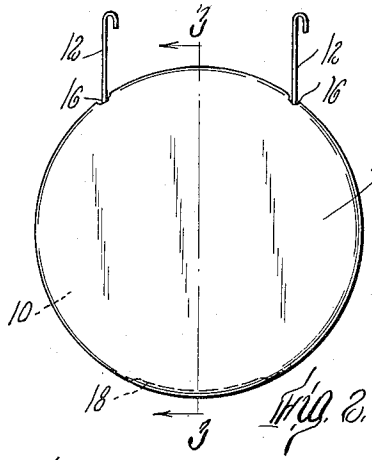


Fig. 2.

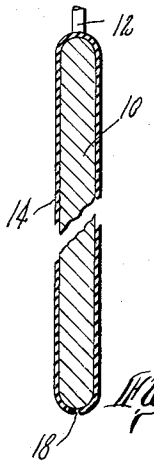


Fig. 3.

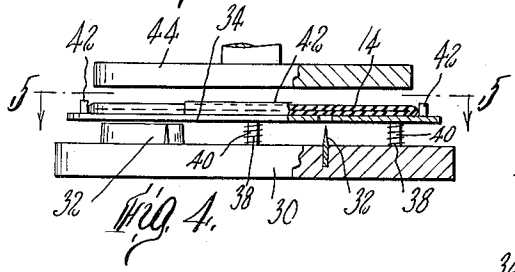


Fig. 4.

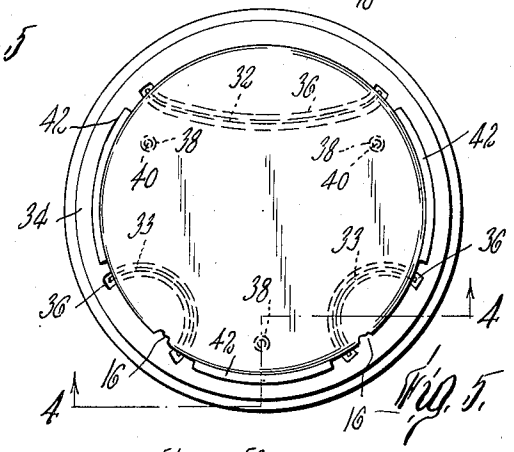


Fig. 5.

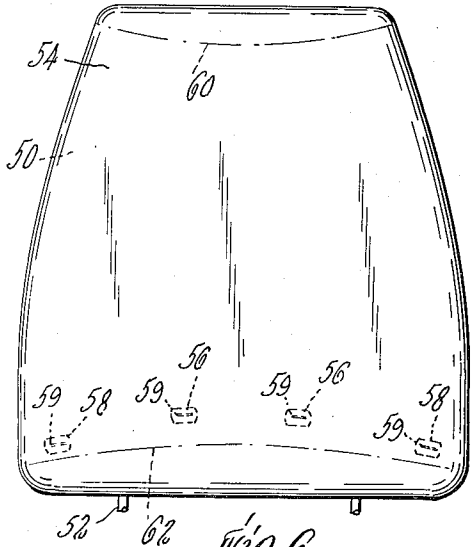


Fig. 6.

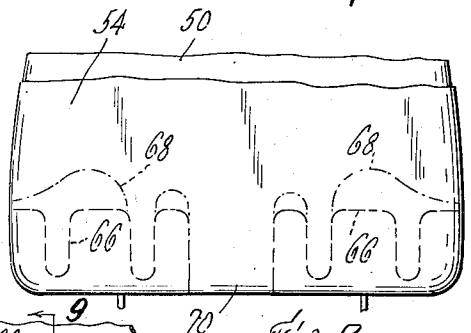


Fig. 7.

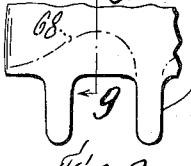


Fig. 8.

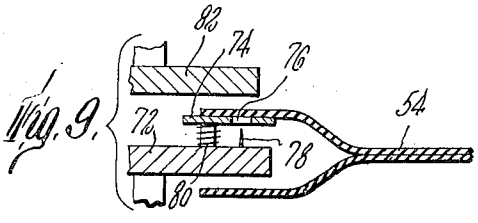


Fig. 9.

Inventor
Stig E. Rosenberg
by Wright, Brown,
Quinby & May
Attys.

Patented Dec. 1, 1953

2,660,762

UNITED STATES PATENT OFFICE

2,660,762

METHOD OF MAKING DIPPED LATEX GARMENT

Stig E. Rosenberg, Brockton, Mass.

Application October 6, 1951, Serial No. 250,078

5 Claims. (Cl. 18—58.7)

1

This invention relates to improved garments of deposited latex and to simplified means and methods of making such garments. In making garments such as women's girdles and baby pants, it has been the practice to dip forms into a pool of prepared liquid latex, the forms picking up films of latex which are thereafter dried. By successive dippings, the film can be built up to any desired thickness. Eventually the film is stripped from the form and trimmed as may be required to make the finished garment. The forms customarily employed are made with ridges or shoulders along lines where it is desired to reinforce the garment. Extra latex is retained in the angle of the ridge or shoulder by surface tension to form reinforcing ribs of extra thickness. It is an object of the present invention to simplify the shape of the forms so as greatly to reduce their cost. To this end the forms are made of slabs of hard material such as a metal with smooth side faces in parallel planes, the side faces being connected by rounded peripheral edge surfaces, all the surfaces of the form being smooth and free from sharp edges or other irregularities.

For making baby pants I preferably use a form which is a true circular disk with rounded edges. The form is completely immersed when dipped in the latex so that a complete envelope is formed thereon. A slit is made in a portion of the periphery to permit the envelope to be stripped from the form. The portion of the margin of the envelope having the slit therein is thereafter cut away to make one of the required openings in the baby pants, as hereinafter described.

Various other advantageous features will be apparent from the following description of the invention and from the drawing, of which

Figure 1 is a perspective view of baby pants made in accordance with the invention;

Figure 2 is an elevation of a form having thereon a latex envelope about to be stripped;

Figure 3 is a section on line 3—3 of Figure 2;

Figure 4 is an elevation of cutting mechanism, a portion being broken away on line 4—4 of Figure 5, shown in section;

Figure 5 is a plane view of a portion of the mechanism shown in Figure 4, as indicated by the line 5—5;

Figure 6 is an elevation of an inverted form for making latex girdles, with an envelope of latex thereon;

Figure 7 is an elevation of the upper portion of the inverted form shown in Figure 6, different

2

lines of cutting being indicated on the latex envelope;

Figure 8 is a fragmentary elevation of a girdle which has been cut as indicated in Figure 7; and

Figure 9 is a fragmentary sectional view of an apparatus for making the cuts indicated in Figure 7.

Baby pants of deposited latex are made, according to the invention by using a form 10 which is preferably a true circular disk, this disk is made of metal or other suitable material capable of having a smooth polished surface. The disk has parallel side faces which are connected by a rounded peripheral surface as indicated in Figure 3. A disk of this shape can be easily and economically made on a metal turning mechanism. For the support of the form one or more rods or pins 12 may be secured to the periphery, the upper end of each such rod being preferably bent into the form of a hook or eye to facilitate the support of the form over the dipping apparatus (not shown). In making the baby pants, the form is dipped into a pool of prepared latex so as to be completely immersed therein, and when the form is lifted from the pool, the film of latex which adheres thereto is allowed to dry. Successive dippings and dryings result in the formation of an envelope of latex of desired thickness on the form. Suitable steps well known in the art are taken to vulcanize the envelope, the latex having been previously mixed with the necessary ingredients such as vulcanizing agents, accelerators, fillers, and the like. When the envelope 14 is ready to be stripped from the form, the latex which has been deposited on the rod or rods 12 is cut away as at 16 and a slash or slit 18 is made in a portion of the periphery of the envelope which is opposite the rods 12. The envelope is then stripped from the form and the sections of the margin thereof are cut away at 20 to form the waist openings of the garment and also at 22 and 24 to form the leg openings of the garment.

These cuts are reentrant arcs or curves the cuts 22 and 24 being preferably approximately semi-circles so that the openings made thereby are substantially circular when the portions of the envelope surrounding each of these openings is held in a plane. The tangents to the cuts 20, 22 and 24 at their extremities are at right angles to the tangents of the circular periphery of the envelope at the points of intersection. The portions of the margin of the envelope which are cut away to make the waist and leg openings include the slit 18 and the holes 16, so that the defective portions of the envelope are thus re-

moved. These cutouts may be made by any suitable means, such as by hand shears, or a die cutter may be employed as illustrated in Figure 4.

As therein shown, the cutting apparatus may include a die bed 30 having suitable sharp knives 32 and 33 fixed therein so that the cutting edges extend upward. A stripper plate 34 is yieldably supported in a horizontal position above the bed 30, this plate having openings 36 therein through which the knives can pass when the plate is depressed. The plate is held in its elevated position by suitable springs 38 surrounding plungers 40. On the upper face of the stripper plate 34, are suitable gages 42 which aid in locating the envelope properly on the stripper plate. When the envelope has been laid flat on the plate as indicated in Figure 4, a striking plate 44 is pressed down by suitable means so as to press the envelope against the cutting edges of the knives 32 and 33. The stroke of the striking plate 44 is so regulated as to bring the lower face of this plate into contact with the cutting edges of the knives 32 and 33, these edges being in a common horizontal plane. The knives 32 and 33 are curved as indicated in Figure 4 so that reentrant curved cuts are made in the margin of the envelope, these cuts severing from the envelopes parts of the margin containing the holes 16 and the slit. Thus the defective parts of the envelope are removed in the process of making the necessary openings for the waist and legs. The curves of the knives intersect the circular contour of the envelope in such a way that the tangents at each point of intersection are perpendicular to each other.

Figure 6 shows a form 50 for making latex girdles for women. This form consists of a plane slab or sheet of metal or the like having parallel faces connected by a peripheral edge surface which is smoothly rounded in the same manner as the peripheral edge of the form shown in Figure 3. The form is devoid of any irregularities or sharp edges so that a substantially uniform coating of latex is acquired by the form as a result of the dips into the latex bath, except for whatever drippings of latex may adhere to the bottom edge of the form. This form is supported by one or more of the customary supporting rods 52, the form being shown in an inverted position in Figure 6. This figure also indicates an envelope 54 of latex covering the entire surface of the form. The envelope may, if desired, be supplied with suitable reenforcing patches 56 and 58, the patches 56 being applied to one side of the form after the first dip, the patches 58 being applied to the other side. These patches may be of any suitable tough material and are made with a central slot 59. The patches are covered by successive dipping operations which are made before and after the patches are applied to the form, the films of latex bonding together in the slots 59. Slits are eventually cut through the film in the slots. The purpose of these patches is to provide strong supporting areas for the attachment of garter straps, their toggles being attached to an end of the straps to be inserted through the slits in the patches. Curved lines 60 and 62 indicate where the envelope may be cut after it has been stripped from the form so as to make the top or bottom opening of the girdle. Such cuts may be made through both layers of the envelope as it lies flat on a supporting surface.

Figures 7 and 8 indicate a different manner of cutting the envelope so as to produce garter straps which are integral with the girdle. For this purpose two successive operations are desirable. The first cut, indicated in Figure 7 by the broken line 66, can conveniently be made through both layers of the flattened envelope. Thereafter a second cut is made through the upper or front layer of the envelope along the dotted edge lines 68, the second cut forming suitable leg openings and the front garter straps. It may be noted that the first and second cuts sever portions from the lower part of the envelope to leave a central part 70 which serves as a crotch piece for a girdle. In making the second cut, apparatus such as is illustrated in Figure 9 may be employed. This apparatus comprises a die bed 72 over which is a stripper plate 74 having an opening 76 therein to receive a knife 78 which is fixed in the die bed 72 and is shaped to make the cuts 68. The stripper plate 74 is supported yieldingly above the knife 78 by springs 80 and a platen 82 is employed to press the upper layer of the envelope down to the knife until the knife meets the platen after penetrating through the envelope.

I claim:

1. The method of making a latex garment, which comprises immersing in prepared latex a flat-sided form suspended by supporting means projecting from the edge of the form, whereby an envelope of latex is deposited on the entire surface of the form, slitting said envelope at a portion of its periphery opposite to said supporting means, stripping the envelope from the form and making reentrant curved cuts in the margin of the envelope where the envelope was slit and where said supporting means was located, said cuts resulting in the formation of required openings in the garment.

2. The method of making a latex garment, which comprises immersing in prepared latex a flat-sided form suspended by supporting means projecting from the edge of the form, whereby an envelope of latex is deposited on the entire surface of the form, slitting said envelope along a portion of the periphery of the form opposite said supporting means, stripping the envelope from the form, whereby holes in the margin of the envelope are left by said supporting means, laying the envelope flat on a supporting surface, and making arcuate reentrant cuts through both layers of the envelope, said cuts severing portions of the margin of the envelope containing said slit and marginal hole.

3. The method of making a latex garment, which comprises immersing in prepared latex a flat-sided form suspended by supporting means projecting from the periphery of the form, whereby an envelope of latex is deposited on the entire surface of the form, slitting said envelope along a portion of its periphery, stripping said envelope from the form, whereby holes in the margin of the envelope are left by the supporting means, laying the envelope flat on a supporting surface and simultaneously die-cutting both layers of the envelope with reentrant cuts severing portions of the margin of the envelope which contain the slit and holes.

4. The method of making latex baby pants which comprises completely dipping in prepared latex a circular disk form having a rounded peripheral surface, whereby a film of latex is deposited over substantially the entire surface of the form, slitting said film along a portion of

the periphery of the form, stripping the film from the form, and making three arcuate reentrant cuts in the margin of the film to form openings for the waist and legs of an infant, one of said cuts severing the portion of the margin containing said slit.

5. The method of making latex baby pants which comprises immersing in prepared latex a circular disk form supported by two spaced pins projecting from the periphery thereof, whereby an envelope of latex is deposited on substantially the entire surface of said disk, making a slit in a portion of the periphery of the envelope opposite said pins, stripping the envelope from the form with two holes in the periphery left by said pins, laying the envelope flat on a supporting surface, and cutting out three portions of the margin of the envelope by reentrant arcuate cuts to form openings for the waist and legs of an infant, said cutout portions of the margin including respectively the said slit and the two holes.

STIG E. ROSENBERG.

References Cited in the file of this patent

UNITED STATES PATENTS

Number	Name	Date
2,053,357	Winder	Sept. 8, 1936
2,100,572	Spanel	Nov. 30, 1937
2,130,921	Hansen	Sept. 20, 1938
2,566,025	Hauser	Aug. 28, 1951