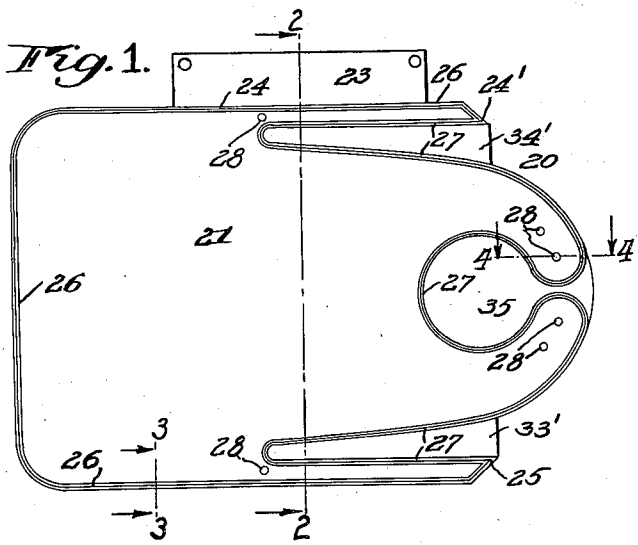
May 31, 1938. A. N. SPANEL 2,119,496

APPARATUS FOR MAKING LATEX ARTICLES

Filed May 8, 1936

Fig. 1.



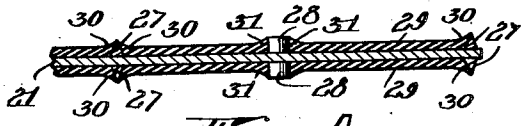


Fig. 4.

Fig. 2.

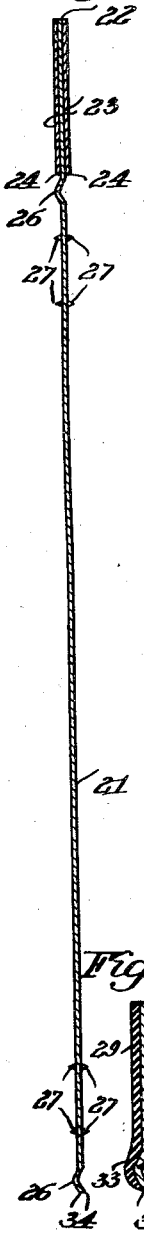


Fig. 5.

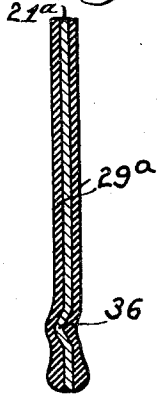


Fig. 3.

INVENTOR
ABRAHAM N. SPANEL.
BY S. Clyde Jones.
HIS ATTORNEY

Patented May 31, 1938

2,119,496

UNITED STATES PATENT OFFICE

2,119,496

APPARATUS FOR MAKING LATEX ARTICLES

Abraham N. Spánel, Rochester, N. Y.

Application May 8, 1936, Serial No. 78,593

6 Claims. (Cl. 18—41)

This invention relates to apparatus for making latex articles.

In the manufacture of latex articles, it has been the practice to make such articles by dipping a suitably shaped form into liquid latex with the major axis of the form in a vertical position. This practice of dipping the form with its long axis extending vertically has been followed, because it was believed to be necessary in order to generate satisfactory reinforcements for all margins of the article. In the dipping of such forms, it is necessary to introduce the form slowly into the latex bath so that the bath is not disturbed to the point where air bubbles will develop on the surface thereof, and it is also necessary to withdraw the form slowly from the latex bath so that a uniform layer of latex will be deposited thereon. Consequently, where a necessarily long form is used for making capes or full length aprons, the length of time required for the form to be dipped into and withdrawn from the latex bath becomes so great that the cost of making the article becomes excessively high. Also the length of time required for each dip is so long that the exposed latex at the surface of the latex bath has an opportunity to coagulate forming a highly objectionable film or "skin" on the bath surface.

I have discovered that the cost of producing relatively long narrow latex articles can be substantially reduced by dipping the article-generating form with its major axis in approximately a horizontal position and yet a satisfactory latex article with all of its margins reinforced, can be produced.

The main feature of the invention relates to novel forms whereby relatively long, narrow latex articles can be produced with a substantial saving in cost.

Other features and advantages of the invention will appear from the detailed description and claims when taken with the drawing in which Fig. 1 is a front elevation of a form on which a latex bib or apron can be deposited; Fig. 2 is a section of this last-mentioned form taken on the line 2—2 of Fig. 1; Fig. 3 is an enlarged fragmentary section taken on the line 3—3 of Fig. 1 of a marginal portion of the form with a layer of latex thereon illustrating the character of reinforcement developed near each edge of the layer; Fig. 4 is an enlarged section of this form with a layer of latex on each surface thereof the section being taken on the line 4—4 of Fig. 1; and Fig. 5 is a fragmentary cross sectional view, similar to Fig. 3, of a modified form with layers of latex thereon particularly illustrating a modified type of reinforcement-generating means for a margin of the article.

The present invention can be applied to the making of latex bibs or aprons by using the form 20 illustrated in Figs. 1 to 4 inclusive. This form is made from metal sheet 21 of commercial stock such as stainless steel or aluminum cut to the general outline illustrated in Fig. 1. The upper portion of the form proper is provided with an extension 22 (Fig. 2) by which the form can be supported while latex is being deposited thereon. On each face of this extension there is attached a plate 23 terminating at its lower portion in an abrupt edge 24, this abrupt edge being positioned in alinement with the upper edge of the form proper. The top, bottom and left end margin of the sheet 21, as illustrated in Fig. 1 from the point 24' to the point 25 has a groove 26, rolled or otherwise formed therein at the edge of the sheet as best illustrated in Figs. 2 and 3. On the right end portion of each surface of the form as illustrated in Fig. 1, there is secured a projecting knife edge 27 which defines the inside edges of the tie strings of the resulting bib, the upper portion of the bib and the neck opening therein. This knife edge is bent to the desired shape and is attached to each surface of the right end of the form as shown in Fig. 1, from the point 24' to the point 25. Circular bosses 28 with abrupt edges are attached to each surface of the sheet at those points where it is desired to develop button holes in the resulting bib.

In making bibs on this form, the form with its long axis in a substantially horizontal position is supported from the extension 22 of the form. While suspended in this position, the form is dipped one or more times into a latex bath until a layer of latex 29 is deposited on each surface of the form. At the junction of each plate 23 with the surface of the form and at the junction of each knife edge with the form, ridges of latex 30 will be developed, while at the abrupt edges of these plates and at the knife edges, lines of weakness will develop in the resulting layer. Similarly, latex will accumulate as a reinforcement 31 (Fig. 4) at the junction of each boss 28 with the sheet 21. The latex will also accumulate on the surface of the grooves to develop reinforcements 32 and 33 of the character illustrated in Fig. 3. The excess portion of the latex on the plates 23 can be stripped away as far as the abrupt edges 24 of the plates and the excess portion of the latex layer de-

posited on the ends of the bosses **28**, as well as on the areas **33'**, **34'** and **35** at the right of the knife edge as illustrated in Fig. 1, can be torn away. At the abrupt edges **34** of the sheet, lines of weakness will develop in the latex layer so that by parting the layer of latex at these lines of weakness two aprons simultaneously deposited on the opposite surfaces of the form will result. Since the length of the form is materially greater than its width, it will be appreciated that there is a material saving of time by dipping this form with its major axis in a horizontal position and yet by the present method an apron of uniform thickness and reinforced at all its margins can be made.

Instead of using forms provided with reinforcement-generating means illustrated in Figs. 1 and 4, the entire margin of the sheet **21A** comprising the form may have a groove **36** formed therein as illustrated in the fragmentary sectional view Fig. 5. It will be noted from a comparison of Figs. 4 and 5 that the character of the marginal reinforcement of the latex garment **29***a* will be modified as the spacing between the groove and the adjacent edge of the sheet is varied.

The articles may be made of liquid latex, vulcanized after drying or may be made of liquid latex largely vulcanized in its liquid form; the coagulation may be effected by straight dipping and drying or by the acid coagulation method, or in fact, by any of the methods known in the art.

The present disclosure is given merely by way of example and it will be understood that there can be many modifications and variations therein within the scope of the appended claims without departing from the spirit of the present invention.

What I claim:

1. A form for making relatively long, narrow articles with reinforced margins comprising an elongated sheet of material, said sheet having an article reinforcement-generating groove along a substantial portion of the margin of one surface of said sheet and a projection on the other surface of said sheet opposite said groove, and means for supporting said sheet with its long axis in substantially a horizontal position while a suitable article forming coating is being deposited thereon.

2. A form on which an article-forming coating may be deposited, comprising a sheet of material, said sheet having an article reinforcement-generating groove in one surface thereof, and a projection on the other surface of said sheet opposite said groove.

3. A form on which an article-forming coating may be deposited, comprising a sheet of material, said sheet having an article reinforcement-generating groove along a margin of one surface of said sheet, said groove at one side thereof terminating in the edge of said sheet, and a projection on the other surface of said sheet opposite said groove.

4. A form on which an article-forming coating may be deposited, comprising a sheet of material, an article reinforcement-generating groove in one surface of said sheet adjacent an edge thereof, said groove being spaced from said edge, and a projection on the other surface of said sheet opposite said groove.

5. A form on which an article-forming coating may be deposited, comprising a sheet of material, said sheet having an abrupt edge, means for supporting said sheet with the abrupt edge lowermost, said sheet having an article reinforcement-generating groove in one surface adjacent said abrupt edge, said groove being spaced from said edge, and a projection on the other surface of said sheet opposite said groove.

6. A form on which an article-forming coating may be deposited, comprising a sheet of material, said sheet having an article reinforcement-generating groove in one surface thereof, for accumulating a reinforcement adjacent the edge of a portion of the article deposited on said surface, a projection on the other surface of said sheet opposite said groove for accumulating a reinforcement adjacent the edge of a portion of the article deposited on said other surface, and a raised section on said first-mentioned surface defining the outline of a portion of the article deposited on said first-mentioned surface.

ABRAHAM N. SPÁNEL.