Aug. 2, 1938. A. N. SPANEL 2,125,592

FORM FOR MAKING RUBBER ARTICLES

Filed Dec. 11, 1935

Fig. 1

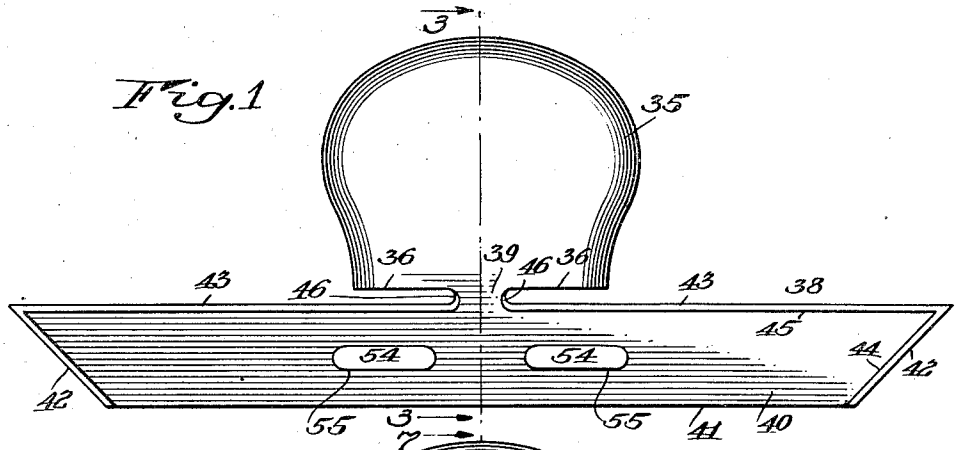



Fig. 6

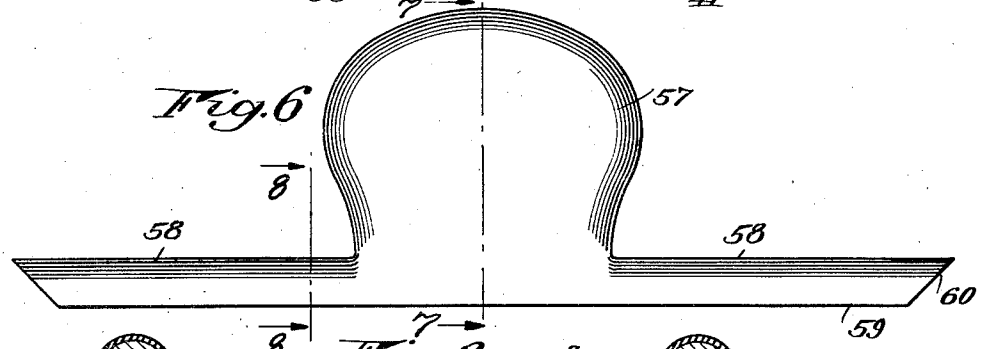



Fig. 2

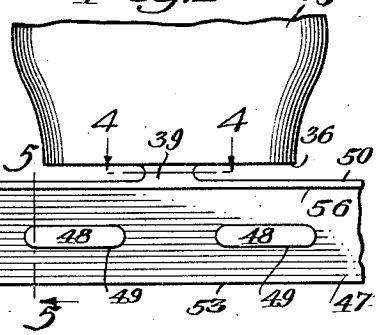



Fig. 3

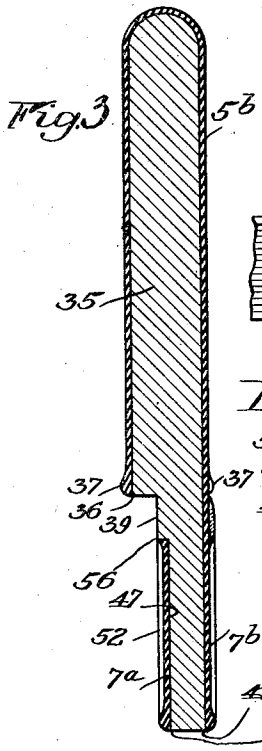



Fig. 5

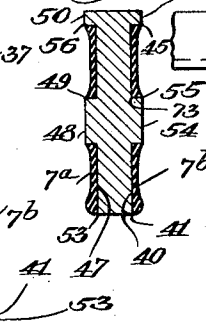



Fig. 4

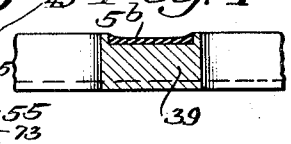



Fig. 7

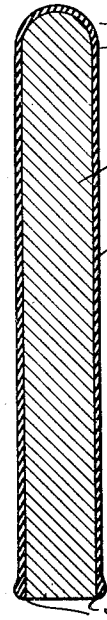
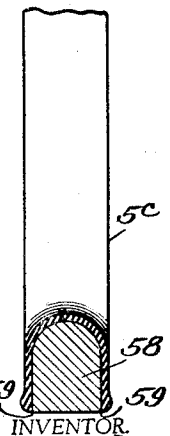



Fig. 8

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2,125,592

# UNITED STATES PATENT OFFICE

2,125,592

## FORM FOR MAKING RUBBER ARTICLES

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Application December 11, 1935, Serial No. 53,923

6 Claims. (Cl. 18—41)

This invention relates to forms for making rubber articles and more particularly to forms for making rubber bathing caps and the like.

In the past dipped rubber bathing caps while they have been durable and satisfactory in service, have not always prevented leakage of water between the edge of the cap and the head of the wearer. Furthermore, with such bathing caps it has been difficult to produce decorative patterns thereon or to obtain varied style effects.

In accordance with the present invention, there is provided a dipped rubber bathing cap with a strip constituting a part thereof which can be tied about the wearer's head whereby a more efficient water seal between the edge of the cap and the head of the wearer is obtained and whereby various decorative and style effects may be obtained with the cap.

The various 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 and Fig. 2 is a fragmentary rear elevation of a form on which a rubber cap and a strip integral therewith as well as a second independent strip, can be made; Fig. 3 is a vertical section of this form with a cap thereon, taken substantially on the line 3—3 of Fig. 1 illustrating how a second strip can be made on the form at the same time that the cap and its integral strip are made; Fig. 4 is a fragmentary cross sectional view of this form taken substantially on the line 4—4 of Fig. 2; and Fig. 5 is a vertical section of this form taken on the line 5—5 also of Fig. 2; Fig. 6 is a front elevation of a still further modified form on which a rubber cap and tying strips integral therewith can be made; Fig. 7 is a vertical section of this last-mentioned form with a cap thereon, taken substantially on the line 7—7 of Fig. 6 and Fig. 8 is a different vertical section of this form with a cap thereon, taken substantially on the line 8—8 of Fig. 6.

Referring to Figs. 1 to 5, there is shown a form on which a cap 5*b* and a tying strip 7*b*, integral therewith as well as a separate tying strip 7*a* can be made simultaneously by depositing rubber thereon. This form, which is flattened, has a head portion 35 of the general outline or shape of the desired cap and is provided at the portion thereof where the head opening is to be generated in the cap, with an abrupt edge 36 above which a reinforcing bead or ridge of rubber 37 accumulates, as best indicated in Fig. 3. A strip-generating portion 38 is connected through a restricted neck 39, to the bottom of the head portion 35. The front of the portion 38 is made with a panel 40 substantially in the plane of the surface of the head portion 35 of the form except that the panel is provided with raised bosses 54, each of which terminates in an abrupt edge 55. The lower edge of this panel terminates in an abrupt edge 41 while its ends and top are bounded by raised borders 42 and 43, the borders terminating in abrupt edges 44 and 45 respectively. It should be noted that the borders 43 gradually merge, as indicated at 46, with the abrupt edge 36 of the head portion of the form. In order that there will not be a large amount of waste rubber deposited, the rear surface of the portion 38, is provided, as illustrated in Figs. 2 and 3 with a panel 47 on which a second strip independent from the cap can be deposited. This panel, which is provided with bosses 48 each terminating in an abrupt edge 49, is similar to the panel 40 (Fig. 1) except that its upper edge is bounded by a raised border 50 with a continuous abrupt edge 56. The ends of this panel are likewise bounded by a raised border with an abrupt edge 52 and the lower edge of the panel terminates in the abrupt edge 53 in the surface of the panel.

In making a cap and its attached band and also in making a separate band on this form, the form may be submerged one or more times in an aqueous dispersion of rubber or the like with a "setting" interval between each dip until a layer of rubber of the desired thickness is deposited over the face of the form. The rubber will accumulate above the abrupt edges 36, 41 and 53 to provide a reinforcing bead or ridge of rubber, as indicated at 37 in Fig. 3, while a line of weakness will develop in the rubber layer at these abrupt edges. In the junction between the panel 40 and the bosses 54 and raised borders 42 and 43 the rubber will accumulate as a thickened angular reinforcing ridge while at the abrupt edges 44, 45 and 55 a line of weakness will be developed in the rubber layer. Similarly, in the junction between the panel 47 and the raised border 50 and the bosses 48, the rubber will accumulate as a thickened angular reinforcing ridge, while at the abrupt edges 49, 52 and 56 a line of weakness will be developed in the layer of rubber. After the rubber layer thus deposited, has been suitably dried and/or cured, the excess rubber is torn away from the layer as far as the abrupt edges 36, 45, 44, 55 and 41 and on the rear surface of the form as far as the abrupt edges 49, 52, 56 and 53. The extra band on the face of the panel 47 can then be re-

moved from the form and the cap with its attached band which is generated on the panel 40 can also be removed from the form and treated in accordance with the usual practice to prepare it for market. The cap 5b may be worn with the strip 7b tied about the head to provide a more effective seal against water entering between the margin of the cap and the head of the wearer. The strip may be tied in various positions on the head to give different style effects. It will be understood that the bosses 48 and 54 may be of any decorative shape such as diamond-shape, heart shape, circular, etc., to provide similarly shaped openings in the tying strip, the invention not being limited to bosses of the outline shown in the drawing.

A still further modified type of cap 5c can be generated on the form 57 illustrated in Figs. 6, 7 and 8. This form which is flattened, has the general outline of the desired bathing cap but differs from the form previously described in that the form has extensions 58 projecting in opposite directions from the side edges of the form. The upper surfaces of these extensions are rounded as best illustrated in Fig. 8 while the bottom surfaces thereof, which are continuous with the bottom of the form proper, as well as the bevelled ends of the extensions are provided with abrupt edges 59 and 60.

In making a bathing cap on this form, the form is dipped one or more times until it is submerged in an aqueous dispersion of rubber, with a "setting" interval between each dip, to deposit a layer of the desired thickness on the surface of the form. The rubber accumulates above the abrupt edges 59 and 60 as a reinforcing bead or ridge which is semi-oval or semi-pear shaped in cross-section, while at these abrupt edges a line of weakness develops in the rubber layer. After the deposited layer is suitably dried and/or cured, the portion of the rubber layer on the bottom of the form is stripped away as far as the lines of weakness at abrupt edges 59 and 60. Thereafter, the remainder of the layer constituting the cap and the attached strips are removed from the form. The cap 5c may be worn in much the same manner as the cap 5b.

What I claim is:

1. A form on which a bathing cap or the like and a tying strip therefor can be deposited simultaneously, said form comprising a head portion terminating in an abrupt edge to define a head opening in the cap and extensions on said head portion extending in opposite directions therefrom, each extension having an abrupt edge.

2. A form on which a bathing cap or the like and tying strips therefor can be deposited simultaneously, said form comprising a head portion terminating in an abrupt edge to develop a cap with a reinforced margin defining a head opening therein, an elongated portion connected to said head portion adjacent to said abrupt edge, one surface of said elongated portion being adapted to develop a tying strip integral with the head cap, an opposing surface of said elongated portion being provided with edge-reinforcement-generating means defining a second tie strip developing surface.

3. A form comprising a head portion terminating in an abrupt edge at one end to develop a reinforced margin on a cap deposited on the head portion, an elongated portion connected to said head portion adjacent said abrupt edge, one surface of said elongated portion merging with the cap developing surface of the head portion to develop a tie-strip integral with the cap, another surface of said elongated portion having reinforcement-generating means thereon defining a separate tie-strip developing surface.

4. A form on which a bathing cap or the like and a tying strip integral therewith can be deposited simultaneously, said form comprising a head portion having a cap developing surface provided with a marginal reinforcement-generating means to develop a cap with a reinforced margin defining a head opening therein, an elongated portion having a tying strip developing surface thereon connected at an intermediate portion thereof to said head portion, said tying strip developing surface being spaced from the reinforcement-generating means of said head portion and merging through a restricted area at said intermediate portion with said cap developing surface adjacent the reinforcement-generating means, whereby the resulting cap and tying strip will be integrally joined.

5. A form on which a bathing cap or the like and a tying strip integral therewith can be deposited simultaneously, said form comprising a head portion having a cap developing surface provided with a marginal reinforcement-generating means to develop a cap with a reinforced margin defining a head opening therein, an elongated portion having a tying strip developing surface thereon bounded by reinforcement-generating means to develop integral edge reinforcements on the resulting tying strip, said elongated portion being connected at an intermediate portion thereof to said head portion, said tying strip developing surface being spaced from the reinforcement-generating means of said head portion and merging through a restricted area at said intermediate portion with said cap developing surface adjacent the reinforcement-generating means, whereby the resulting cap and tying strip will be integrally joined.

6. A form on which a bathing cap or the like and a tying strip integral therewith can be deposited simultaneously, said form comprising a head portion having a cap developing surface provided with a marginal reinforcement-generating means to develop a cap with a reinforced margin defining a head opening therein, an elongated portion having a tying strip developing surface thereon bounded by reinforcement-generating means to develop integral edge reinforcements on the resulting tying strip, raised bosses on said tying strip developing surface, said elongated portion being connected at an intermediate portion thereof to said head portion, said tying strip developing surface being spaced from the reinforcement-generating means of said head portion and merging through a restricted area at said intermediate portion with said cap developing surface adjacent the reinforcement-generating means, whereby the resulting cap and tying strip will be integrally joined.

ABRAHAM N. SPÁNEL.