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METHOD OF VULCANIZING, STRIPPING, AND FINISHING DIPPED RUBBER GOODS

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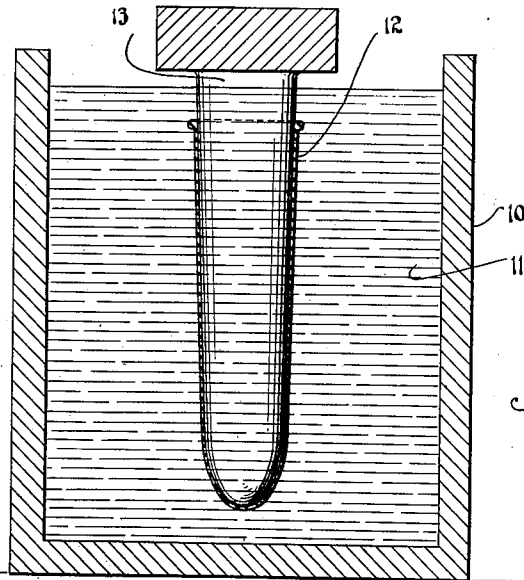


Fig. 1

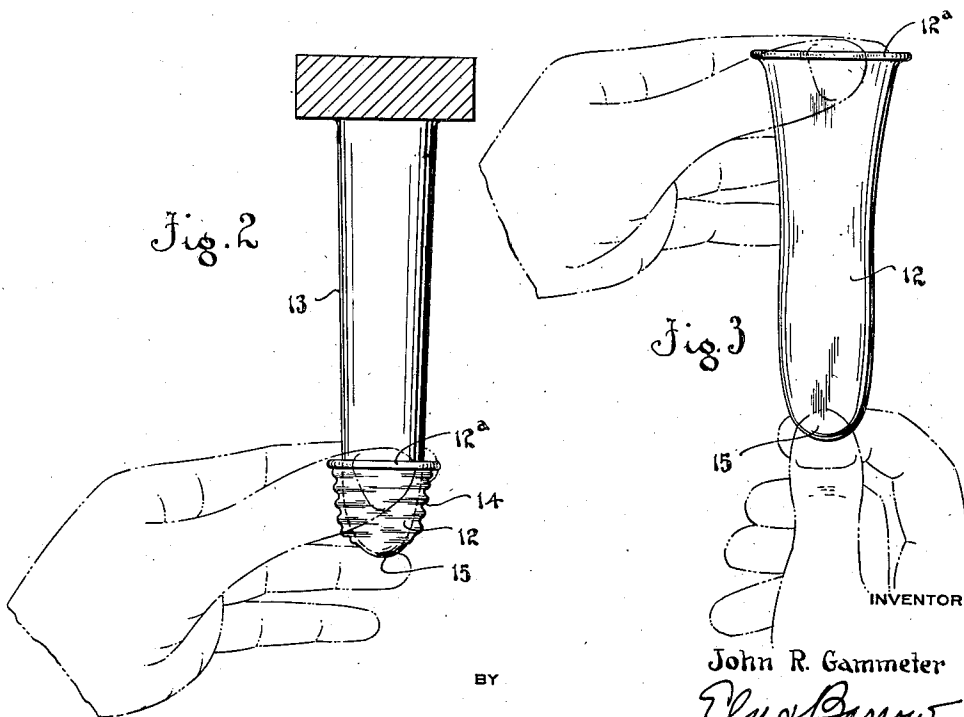


Fig. 2

Fig. 3

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METHOD OF VULCANIZING, STRIPPING, AND FINISHING DIPPED RUBBER GOODS

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This invention relates to methods for vulcanizing dipped rubber goods, stripping the same from the forms on which they are made and finishing the goods for shipment.

5 It has heretofore been proposed to cure latex articles such as made by dipping by immersion in hot water at temperatures up to the boiling point of water for sufficient time to bring about a cure. This method requires the use of apparatus over so much time that it is quite expensive and it could not be carried out successfully by a continuous process without almost prohibitive cost in the provision of a continuous vulcanizer of such length through which the goods could travel at such a rate as to remain in the vulcanizer for periods such as forty minutes to complete the cure.

15 Heretofore in the manufacture of dipped rubber goods, such as cots, the method in general use for stripping the goods from the forms has been to treat the goods on the forms with a separating material, such as soapstone, to engage the beads and roll them down the forms so that the article is rolled about its bead when stripped. This necessitates a further operation requiring much labor which is referred to as "snapping out" and constitutes unrolling the goods. The goods are finally dusted with a separating material.

20 In the manufacture of such goods from latex or water dispersions of rubber containing vulcanizing ingredients, the present inventor has found that this type of goods may be best cured by use of suitable low temperature accelerators of any of the well known kinds now on the market in the latex and immersion in hot water, preferably for a short time, such as seven minutes, and has also discovered that by stripping the goods from the forms while still wet (and preferably while still hot) after this short cure they can be easily stripped so as not to roll upon themselves. This seems to be due to the fact that until dried after the short vulcanizing process the goods are pervious to moisture which finds its way between the goods and the form and lubricates the forms so that the goods readily slip therefrom. This water treatment

may be given to goods which have previously been somewhat vulcanized by other methods and, of course, water vapor may be employed instead of water.

By this method the beads are pushed down the forms in stripping and the goods pucker or wrinkle without rolling onto the bead, the ends of the goods being easily grasped and drawn out and the "snapping out" operation being thus avoided. Both operations of stripping and of drawing out the ends of the goods can be quickly performed by hand.

After stripping the goods, they may then be tumbled in any suitable way with a warm dry powdered separating material such as soapstone or other material inert to water which absorbs the water and finally the goods may be removed from the soapstone and tumbled in a barrel such as a perforated barrel to free the goods from soapstone clinging thereto and to dry the same thoroughly. The goods are then allowed to age for several days, about three or four, which completes the cure therein, before they are ready for use.

The stripping process is illustrated in the accompanying drawing of which:—

Figure 1 is a section through a tank showing a form having dipped goods therein immersed in hot water;

Figure 2 is an end elevation of the form showing the stripping operation; and

Figure 3 is a view showing the manner of drawing out the ends of the goods after stripping.

Referring to the drawing, the tank 10 contains hot water 11 in which the goods 12 on forms 13 may be vulcanized or may be treated subsequent to a partial vulcanization by other methods and before stripping as by hot air, sulphur chloride vapors, etc. The water 11 is preferably treated with suitable softeners which facilitates stripping. As shown in Figure 2, the beads 12^a of the goods are engaged and pushed down the forms while they are still wet (and preferably while hot) and in doing so the body of the goods is gathered or puckered as at 14. The ends of the goods are then grasped as at 15 and drawn out. The goods are now ready

for the tumbling processes as described above or for other suitable processes by which they may be dried and dusted with separating material.

5 By this method the goods are effectively made and vulcanized in a continuous manner, the vulcanization being sufficient on the forms to permit stripping and handling upon removal and being completed by a simple aging
10 process thereafter, which aging may be going on while the goods are in shipment, in storage or on the shelves.

Modification of the invention may be resorted to without departing from the spirit thereof or the scope of the appended claims.

What is claimed is:—

1. That method for making dipped rubber goods from latex or the like which includes the steps of vulcanizing the goods upon the
20 forms by immersion in hot water, stripping the goods from the form after vulcanization while still wet and warm by sliding the top ends of the goods down the forms which
25 puckers the goods as they are stripped, drawing the bottom ends of the goods out after stripping, tumbling the goods with warm, dry, inert, powdered material to absorb the moisture therefrom, and finally tumbling the goods in a dry atmosphere thoroughly to
30 dry the same and to free them from excess powdered material.

2. That method for making dipped rubber goods from latex or the like which includes the steps of vulcanizing the goods upon the
35 forms by immersion in hot water, stripping the goods from the forms after vulcanization while still wet and warm by sliding the top ends of the goods down the forms which
40 puckers the goods as they are stripped, drawing the bottom ends of the goods out after stripping, and finally drying the goods and treating the same with a powdered separating material.

3. That method for making dipped rubber goods from latex or the like which includes the steps of vulcanizing the goods upon the
45 forms by immersion in hot water, stripping the goods from the forms after vulcanization while still wet and warm by sliding the top ends of the goods down the forms which
50 puckers the goods as they are stripped, drawing the bottom ends of the goods out after stripping, and drying the goods.

4. That method for making dipped rubber goods from latex or the like which includes the steps of vulcanizing the goods while on
55 the forms just prior to stripping by immersion of the same in hot water and then while the goods are still warm and wet stripping the goods from the forms by sliding the top
60 ends of the goods down the forms which causes the goods to pucker, drawing out the end of the puckered goods, and drying the goods.

65 5. That method for making dipped rubber

goods from latex or the like which comprises vulcanizing the goods on the forms just prior to stripping with warm moisture, stripping the goods while still warm and moist by sliding the top ends thereof down
70 the forms causing the goods to pucker, drawing out the bottom ends of the goods after stripping, and drying the goods.

6. That method of making dipped rubber goods from latex or the like which comprises
75 vulcanizing the goods on the forms just prior to stripping in the presence of moisture, stripping the goods while still moist by sliding the top ends thereof down the forms causing the goods to pucker, drawing out the
80 bottom ends of the goods after stripping, and drying the goods.

7. That method for making dipped rubber goods from latex which comprises moistening the goods on their forms during vulcanization and just prior to stripping, then sliding the goods from the forms, and finally
85 drying the goods.

8. That method for making dipped rubber goods from latex which includes the steps of partially vulcanizing the goods with hot
90 water in the presence of a low temperature accelerator while on their forms for sufficient time to permit stripping and further handling of the goods, stripping the goods from the forms while still wet, drying the goods
95 and completing the vulcanization of the goods by aging.

9. That method for making dipped rubber goods from latex which includes the steps of partially vulcanizing the goods while on their forms for a short time in the presence of a low temperature accelerator, then stripping the goods from the forms in the
100 presence of moisture, drying the goods, and allowing the goods to age after drying to complete the vulcanization thereof.

10. That method for making dipped rubber goods from latex which includes the steps of partially vulcanizing the goods while on their forms for a short time in the presence of a low temperature accelerator and moisture, then stripping the goods from the forms while still moist, and allowing the goods to
110 age to complete the vulcanization thereof.

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