Nov. 18, 1924. 1,516.072

N. BARR

APPARATUS FOR FORMING RINGS OR BEADS ON THE NECKS OF TOY BALLOONS

Filed Aug. 23, 1921 2 Sheets-Sheet 1

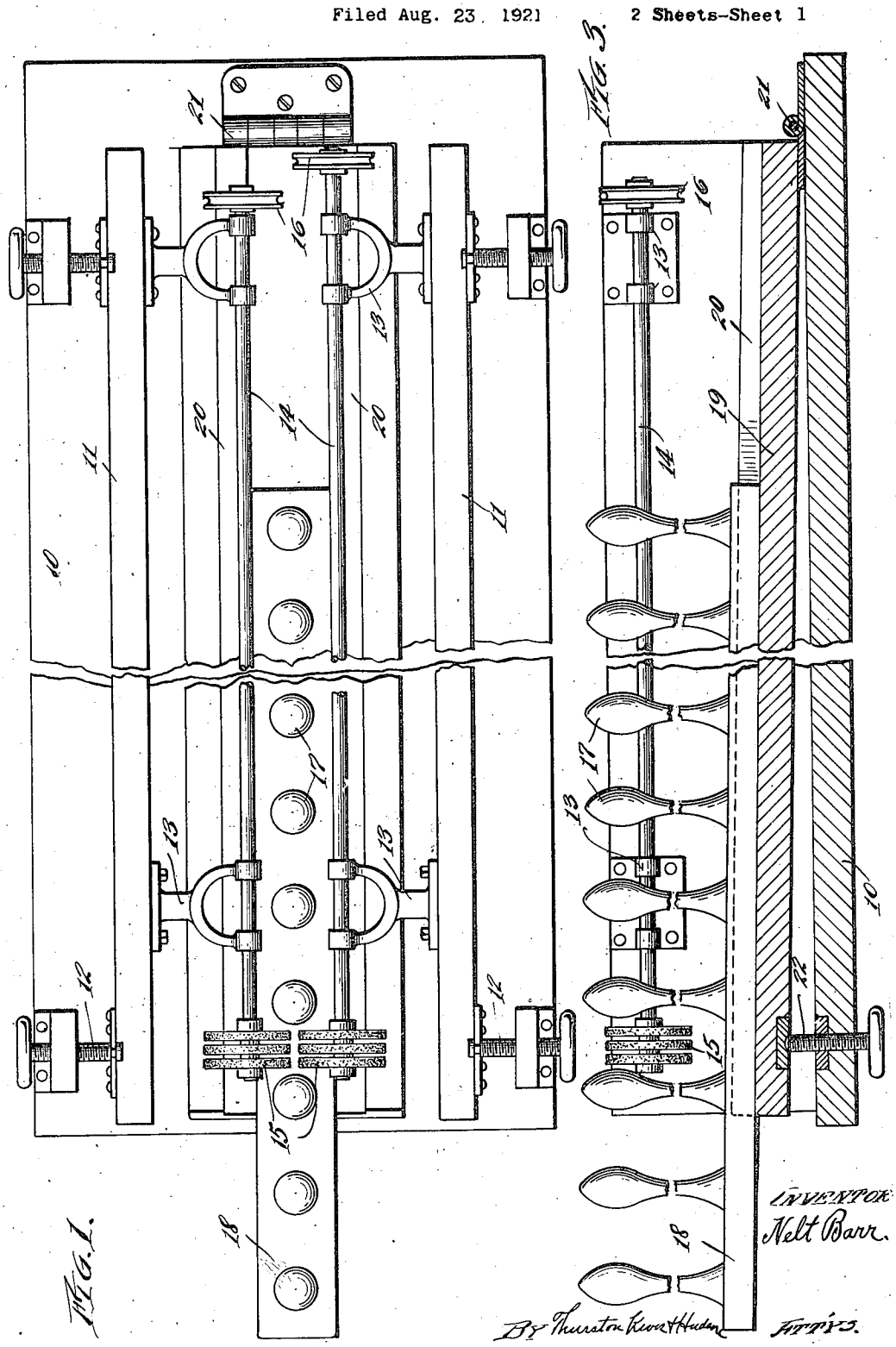

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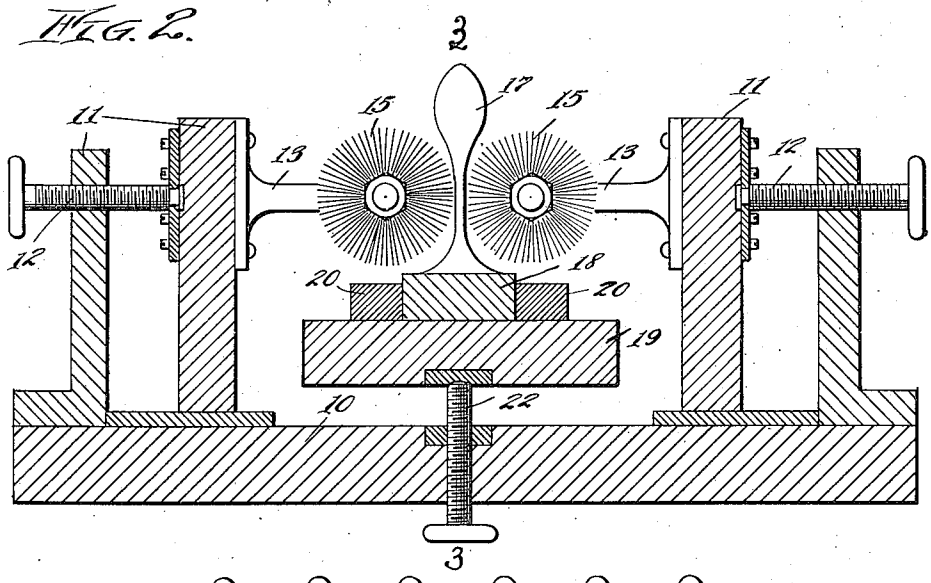
FIG. 2.



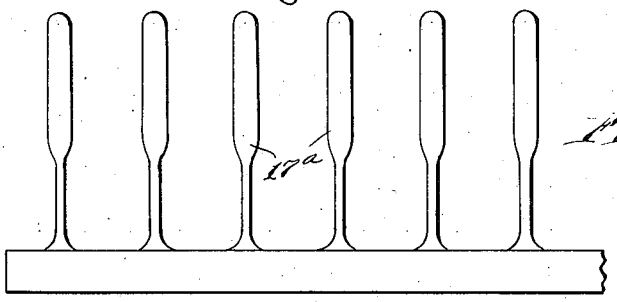


FIG. 4.

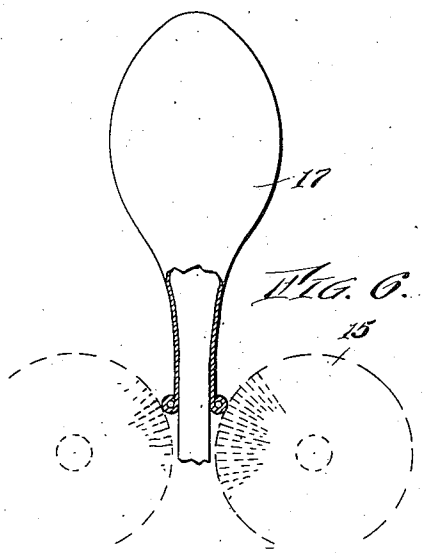
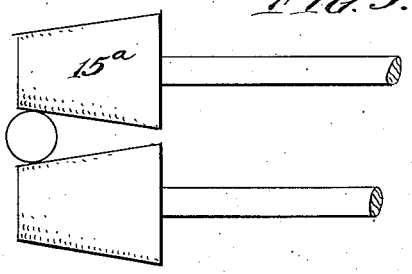


FIG. 6.

FIG. 5.



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ATTYS

1,516,072

Patented Nov. 18, 1924.

UNITED STATES PATENT OFFICE.

NELT BARR, OF LORAIN, OHIO, ASSIGNOR TO THE BARR RUBBER PRODUCTS COMPANY, OF LORAIN, OHIO, A CORPORATION OF OHIO.

APPARATUS FOR FORMING RINGS OR BEADS ON THE NECKS OF TOY BALLOONS.

Application filed August 23, 1921. Serial No. 494,741.

To all whom it may concern:

Be it known that I, NELT BARR, a citizen of the United States, residing at Lorain, in the county of Lorain and State of Ohio, have invented a certain new and useful Improvement in Apparatus for Forming Rings or Beads on the Necks of Toy Balloons, of which the following is a full, clear, and exact description.

This invention relates to a method and means for forming rings or beads on the necks of toy balloons and has for its object to reduce the time and therefore the cost of rolling up the rubber on the neck portions of the balloon forms to provide the beads or rings at the ends of the balloon necks.

Heretofore in the process of making toy balloons after the forms have been dipped into the rubber solution, the rubber surrounding the necks of the forms is rolled for a distance along the necks to form thickened portions in the form of beads or rings at the ends of the necks of the balloons.

Heretofore this has been done by hand, an operator with her fingers rolling up the rubber on the neck of each form and consequently this hand operation adds measurably to the cost of the balloons. By my invention the rolling up operation is performed mechanically and quickly. Preferably this is accomplished by bringing the forms into contact with one or more revolving brushes so that the rubber will be rolled up by a brushing action.

The invention may be further briefly summarized as consisting in certain novel details of construction and combinations and arrangements of parts and in the steps of the improved method which will be described in the specification and set forth in the appended claims.

In the accompanying sheet of drawings, Fig. 1 is a top plan view of the apparatus; Fig. 2 is an end view; Fig. 3 is a side view with parts in section substantially along the line 3—3 of Fig. 2; Fig. 4 shows modified balloon forms and Fig. 5 shows modified brushes which are preferably used therewith; Fig. 6 is an enlarged view illustrating the rolling action of the brushes on the rubber of the neck of the form.

In carrying out my invention, the rubber is rolled up the necks of the forms by a brushing action, and this is done preferably by moving a series of forms between a pair of oppositely rotating brushes. The apparatus used in carrying out this method preferably includes a horizontal table 10 having two long upright strips 11 adjustable toward and from each other by adjusting screws 12 and carrying brackets 13 in which are journaled long shafts 14 provided with closely arranged oppositely disposed rotary brushes 15 and with pulleys 16 adapted to be engaged by motor driven belts so as to drive the brushes 15 in opposite directions. By adjusting the strips 11 toward and from each other the distance between the brushes can be made anything that is desired, as is obvious from Figs. 1 and 2. The distance between the brushes 15 and pulley 16 is such that a strip or series of forms may be moved inward past the brushes without striking the pulleys.

The forms on which the balloons are made are in Figs. 1, 2 and 3, shown at 17, which forms are carried by and arranged at right angles to a strip or base 18. These forms are designed to be run between the rotating brushes 15 and to facilitate this I provide beneath the shafts 14 that drive the brushes a guide 19 in the form of a strip having spaced guide ribs 20, this strip 19 being in this instance hinged at its end remote from the brushes as shown at 21, to the top of the table, and at its opposite end being adjustably supported by means of an adjusting screw 22. This adjusting screw is just beneath the brushes so that the relative height to the brushes and forms can be adjusted at the point where the forms pass between the brushes.

In Fig. 4 I have shown elongated forms 17^a for forming what is known as a sausage-shaped balloon, and with these forms I prefer to use beveled brushes 15^a as shown in Fig. 15, whereas the brushes shown in Fig. 1 are cylindrical brushes, a series of which are preferably provided side by side on each shaft, so that the rubber will be properly rolled up the neck in the event the first pair of brushes do not accomplish this work.

In operation the brushes 15 or 15^a as the case may be, are adjusted as to spacing from one another and the guide strip 19 is adjusted as to height to adapt the apparatus for forms of a given size, then the operator standing at one end of the table inserts a series of forms in the guide and moves

them inwardly until all the forms have separately passed between the brushes, and then the operator pulls the forms outwardly. Thus by a quick inward and outward stroke of the forms the rubber is rolled upward along the necks of the forms so as to form the rings or beads of the right diameter on the ends of the necks of the balloons, and this is done just as effectively but in far less time than is required by the hand rolling operation.

I do not desire to be confined to the precise details shown or the precise steps of the method, but aim in my claims to cover all modifications which do not involve any departure from the spirit and scope of my invention.

Having described my invention, I claim:

1. In an apparatus for forming beads or rings on the ends of the necks of toy balloons, a table having a pair of oppositely disposed brushes, means for rotating the brushes in opposite directions, means for supporting the brushes so that they may be adjusted toward and from each other, guide means for a member carrying a longitudinal row of balloon forms, said guide means extending lengthwise of the table so that the balloon forms may be caused to pass in succession between the brushes, and means for adjusting the guide means so that the portions of the balloon forms passing between the brushes may be raised and lowered.

2. In an apparatus for forming beads or rings on the ends of the necks of toy balloons, a table, a pair of oppositely disposed laterally slidable supports on said table and disposed longitudinally thereof, shafts carried by said supports, brushes carried by the shafts, a vertically movable guide member mounted on said table between said supports and provided with a longitudinal guide way for a balloon form support, and means for adjusting said laterally slidable supports toward and from the guide member and for adjusting the guide member vertically.

3. In an apparatus for forming beads or rings on the ends of toy balloons, a table, a pair of supports extending longitudinally of the table on opposite sides of the center thereof, means for adjusting said supports toward and from the center of the table, rotatable brushes carried by said supports adjacent one end of the table, means for rotating said brushes, a guide member extending longitudinally of the table between said supports, said guide member being connected by a horizontal pivot to the table adjacent the end opposite that at which the brushes are located, said guide member having a longitudinal guideway for a balloon form support, and means for adjusting said guideway about its pivot.

In testimony whereof, I hereunto affix my signature.

NELT BARR.