

April 16, 1929.

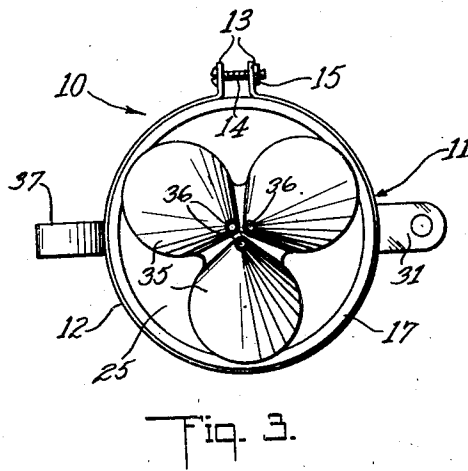
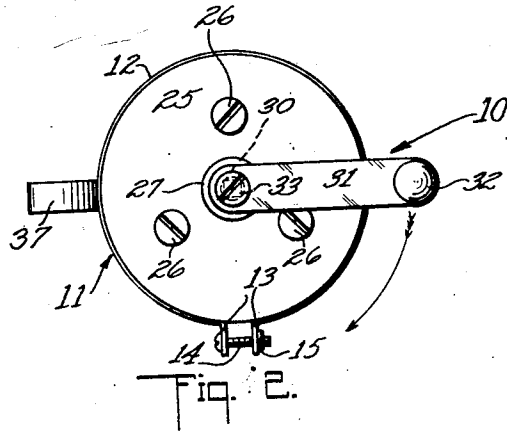
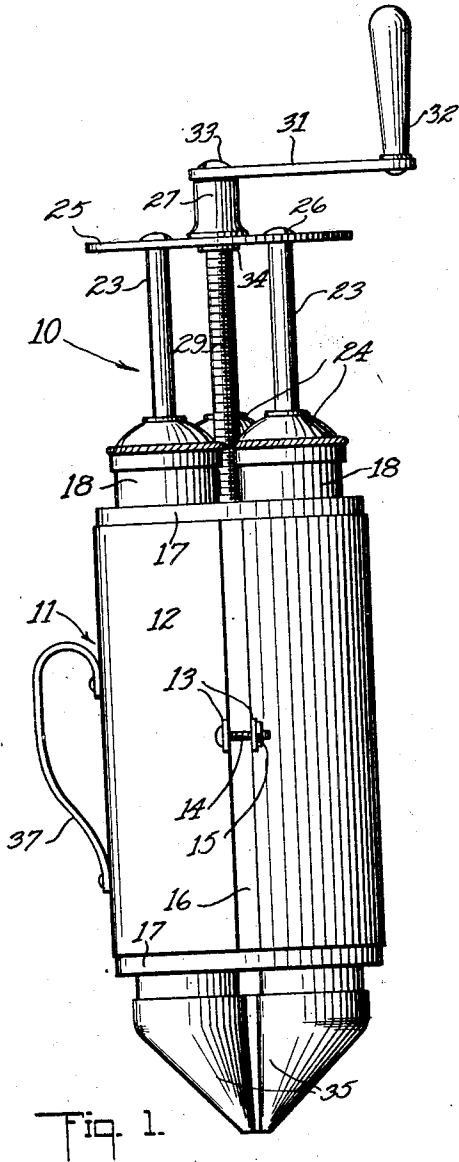
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DEVICE FOR FORMING MULTICOLORED BRAID LIKE DECORATIONS

Filed March 24, 1928

2 Sheets-Sheet 1



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2 Sheets-Sheet 2

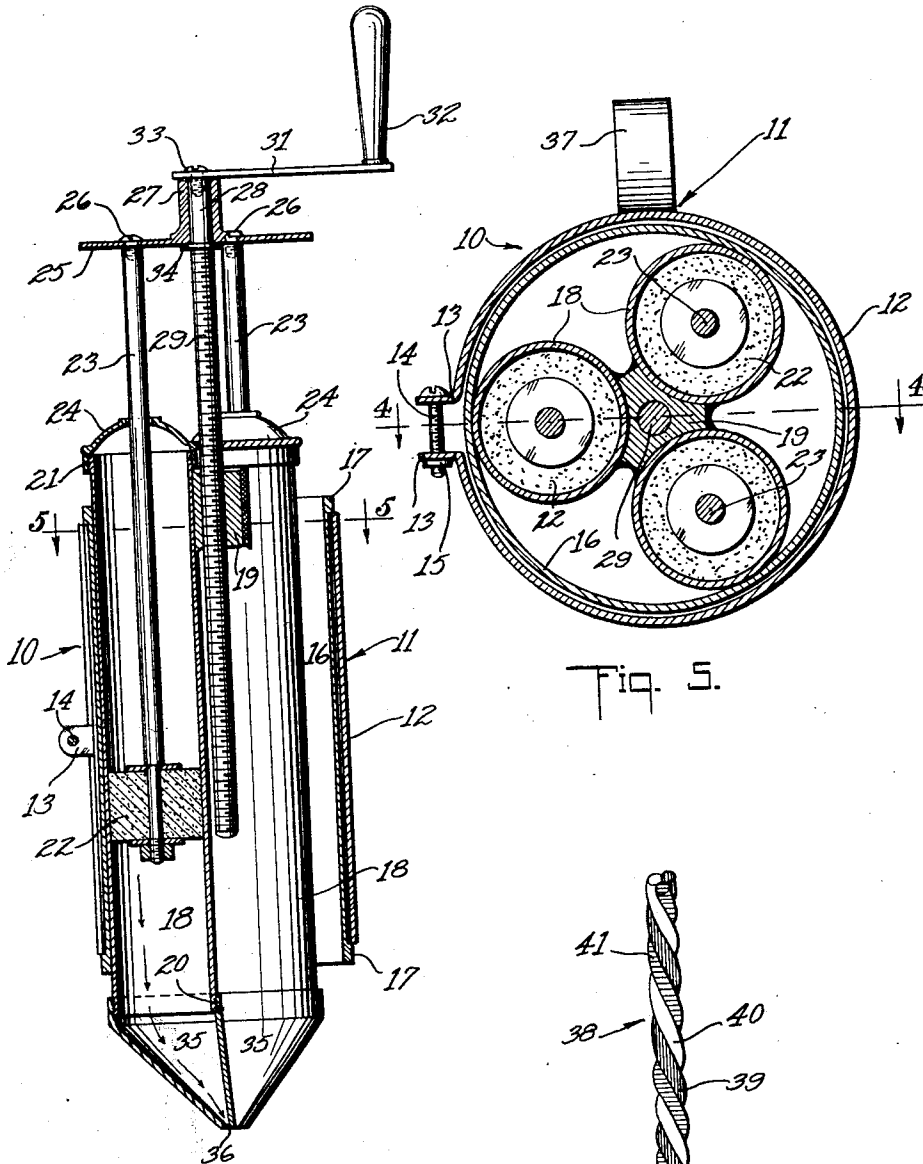


Fig. 4.

Fig. 5.

Fig. 6.

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UNITED STATES PATENT OFFICE.

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DEVICE FOR FORMING MULTICOLORED, BRAIDLIKE DECORATIONS.

Application filed March 24, 1928. Serial No. 264,501.

My invention relates to devices adapted to be used for decorative purposes and refers particularly to certain important improvements in a device of this character, which is disclosed in my co-pending application for Letters Patent of the United States, filed November 15, 1927, Serial No. 233,454.

Although the device disclosed in the aforementioned application for Letters Patent is well adapted to cause a twirling motion of a plastic substance and thereby also to cause the substance to be ejected from the device in a braid-like form, the different imitative strands of the ejected substance are all of the same color.

It is the main object of my present invention to construct a device of this character, not only so that the plastic substance, when ejected from the device, will be of a braid-like form, but also so that, if so desired, the different imitative strands of the ejected substance may differ in color and that thus the ejected substance may be of a still more pleasing appearance than when the different strands are of the same color.

Another object of the present invention is not only to provide a device of this character with rotatable means for causing a twirling motion of the plastic substance and with ejecting means operable in conjunction with the rotatable means, but also to arrange frictional means so that the latter may engage the rotatable means with any desired degree of tension in order to control the speed of the rotatable means and thereby to cause the pitch of the imitative strands of the ejected substance to be uniform and otherwise best adapted to produce a required decorative effect.

A further object of the invention is to provide a device of this character with removable nozzles through which the plastic substance is ejected from the aforementioned rotatable means, and to construct and arrange each nozzle so that the exit opening of the nozzle may be positioned in proximity to the axis of the rotatable means for the plastic substance in order to prevent, as nearly as possible, a premature severance of the imitative strands of the substance during its ejection from the device.

With the above mentioned objects and with other objects in view, the invention consists in the novel construction and combination of parts hereinafter described, illustrated in the accompanying drawings, and set forth in the

appended claims, it being understood that various changes in the form, proportion, size and minor details of construction within the scope of the claims may be resorted to without departing from the spirit, or without sacrificing any of the advantages, of the invention.

In the drawings,

Fig. 1 is a side elevation of the device of my invention in its preferred embodiment;

Fig. 2 is a top plan of the device shown in Fig. 1, a curved arrow indicating the directional rotation of the crank whereby the pistons in the respective tubular members are moved toward the discharge ends of the member;

Fig. 3 is a bottom plan of the device shown in Fig. 1;

Fig. 4 is a mid-section of the device, the view being taken in a plane indicated by the line 4—4 in Fig. 5 and showing one of the pistons in the tubular member therefor as approaching the discharge end of the member, and the movement of the plastic substance toward the exit opening of the nozzle secured to the tubular member being indicated by arrows;

Fig. 5 is an enlarged section taken in a plane indicated by the line 5—5 in Fig. 4; and Fig. 6 is an elevation of a portion of the plastic substance ejected from the device shown in Figs. 1 to 5, the substance being shown as having a braid-like form, and the colors of the imitative strands of the substance being indicated as red, white, and blue.

In its preferred embodiment my present invention comprises a device, which in the drawings is designated in general by the numeral 10. This device includes a frame member 11, the major portion of which consists of a wide band 12, preferably made of spring metal and curved so as to form, when contracted, a virtually cylindrical wall. At the termination of each of its curved end portions, the band is medially provided with an outward extending lug 13, and these lugs have registering openings so that the lugs are adapted to receive therein a screw 14. The tendency of the band is to spring outward, and a nut 15, screwed on the screw 14, is adapted to press on one lug 13 while the head of the screw presses on the other lug so that the band may thus be contracted when so desired.

A substantially cylindrical body 16 is in the present instance shown as rotatably mounted in the band 12 of the frame member

and as provided with end flanges 17, which overlap the band so as to prevent an excessive end play of the body within the frame member. This body is provided with a plurality of cylindrical, tubular members 18, extending longitudinally in the body and somewhat beyond both ends thereof in parallelism with the axis of the body but concentrically thereof and being integrally joined to the cylindrical wall of the body in any suitable manner. Centrally of the body 16 and preferably within one of the end flanges 17, is a web 19, to which the tubular members are also integrally joined. Owing to this construction the tubular members may together be considered as a unit that is rotatable within the frame member, and the interior of each tubular member may be considered as a chamber, which is adapted to receive therein a plastic substance, such as sugar paste, plaster, papier-mâché, or, in fact, any plastic substance that can be twisted or otherwise shaped, while in its plastic state, so that braid-like decorations may be formed thereof.

Each of the tubular members 18 is preferably threaded at its ends, as shown at 20 and 21 in Fig. 4, and in each of the chambers formed by the tubular members is reciprocally mounted a suitable piston 22 so that the piston is adapted to discharge the substance from the chamber at the discharge end thereof, which in the present instance is shown to be at the end 20. Preferably, each piston is fitted on one end portion of a stem 23, which extends through a cap 24, suitably perforated for the stem and screwed on the respective tubular member at the end 21. At its outer end each piston stem 23 has preferably therein a threaded opening, and a plate 25 is suitably perforated for receiving therein screws 26, which are screwed into the stems and thereby secure the latter to the plate so that the stems and therewith also the pistons 22 may be reciprocated in unison.

The web 19 has therein a threaded opening co-axial with the cylindrical body 16, and the plate 25 has preferably integral therewith a boss 27, which is provided with an opening, also co-axial with the body so as to be adapted to receive rotatably therein the smooth portion 28 of a screw 29, the threaded portion of the screw engaging the web 19. In its end beyond the portion 28 the screw 29 has a threaded opening, and the end is preferably of a square formation, as shown at 30 in Fig. 2, while a crank 31, provided at one end with a handle 32, has therein at its other end a square opening that fits the portion 30, so that by means of a screw 33, screwed into the square end of the screw 29, the crank may be fixed to the latter. The screw 29 has preferably thereon between its threaded portion and its smooth portion a flange 34, which bears against the inner side of the plate 25 and thus co-operates with the crank, which

bears against the outer end of the boss 27, for preventing an excessive end play of the screw relative to the plate.

Nozzles 35 are adapted to be used in conjunction with the tubular members 18. For this purpose each nozzle is threaded at its inlet end so as to allow the nozzle to be screwed upon the respective tubular member at the discharge end 20 of the latter, and the exit opening 36 of each nozzle is eccentric to the axis of the nozzle's inlet end and to the axis of the respective tubular member to such a degree that, when the nozzles are screwed upon the tubular members, the exit openings 36 may be positioned in proximity to the axis of the cylindrical body 16, as shown in Figs. 1, 3, and 4.

The frame member 11 is preferably provided with a handle 37. When the use of the device 10 is required, the operator first removes the nozzles 35 from the respective tubular members 18 and then grips the handle 37 with one hand while with the other he takes hold of the handle 32 on the crank 31 and thereby turns the crank in the direction opposite to that indicated by the curved arrow in Fig. 2, it being assumed that the screw 29 has a right-hand thread thereon, so that the plate 25 is caused to be moved away from the tubular members and that consequently the pistons 22 are caused to be moved toward the ends 21 of the respective tubular members. Each tubular member is then filled with the required plastic substance, for instance, sugar paste of a selected color, and the nozzles are again screwed upon the respective tubular members to their proper positions, as before described. The operator thereafter adjusts the nut 15 upon the screw 14 and thereby contracts the band 12 of the frame member until it engages the cylindrical body 16 with the desired degree of tension, and he again grips the device 10, as before, and turns the crank 31 in the direction indicated by the curved arrow in Fig. 2, thus causing a rotative movement of the body 16 and therewith also a rotative movement of the tubular members 18 and simultaneously causing the plate 25 to be moved toward the tubular members and thereby also causing the pistons to be moved toward the discharge ends 20 of the members so that the sugar paste is forced from the members into the nozzles and is ejected from the latter through the exit openings 36.

In the present instance the device 10 is shown as provided with three tubular members 18, and it may be assumed that the color of the aforementioned sugar paste or other plastic substance in one tubular member is red, in another white, and in the third is blue. Thus, when the body 16 is rotated, the substance 38 ejected from the nozzles is not only of a braid-like form, as is understood from the portion 38 of the substance shown in Fig.

6, but the imitative strands of the braid-like formation are colored according to the color of the substance in the respective tubular members, so that one such imitative strand is red, as shown at 39, one is white, as shown at 40, and one is blue, as shown at 41 in the same figure.

The number of tubular members, of course, may be varied from two to any other number most adapted to cause the ejected substance to produce a desired artistic effect. It should be further understood that, in accordance with the disclosure in my aforementioned co-pending application for Letters Patent, the exit openings 36 in the nozzles may be of any other shape than that shown in the appended drawings in order to make it possible to produce a great number of pleasing variations in the appearance of the ejected substance 38 and thereby to increase the usefulness of the device 10. A peculiarly valuable feature of my invention is also that, by the adjustment of the tension of the frame member 11 upon the body 16, the latter may be rotated at different speeds, so that the pitch of the imitative strands of the ejected substance may thus be changed at the will of the operator of the device in order to produce further pleasing variations in the appearance of the ejected substance.

While in the preferred embodiment of the invention, as shown in the drawings, the tubular members 18 are arranged within the cylindrical body 16 so as to form chambers for the pistons 22, the cylindrical body may in some instances be cast or otherwise suitably constructed, and it may have the piston chambers formed therein by boring or other means. In such a case the piston chambers may be internally threaded at their ends, and the caps 24 and the nozzles 35 may be correspondingly threaded externally so as to fit the ends of the piston chambers.

From the foregoing it is seen that the device 10, either in its preferred embodiment or otherwise constructed, as suggested, can easily be operated by a single person and can be used in various arts for producing decorations of a braid-like appearance from a plastic substance, especially when it is desired that the imitative strands of the substance ejected from the device be of different colors.

I claim as my invention:

1. A device of the character described, comprising a frame member; a body rotatably mounted in the frame member, the body having therein a plurality of chambers, each of which is adapted to receive therein a plastic substance of a selected color and is provided with a discharge opening for the substance; means for ejecting the substance from each chamber through the respective discharge opening; means for operating the ejecting means; and means for rotating the body in the frame member, the rotating

means being associated with the means for operating the ejecting means so that the substance ejected from the chambers may be of a braid-like form and that the imitative strands of the ejected substance may be colored according to the color of the substance in the respective chamber.

2. A device of the character described, comprising a frame member; a body rotatably mounted in the frame member, the body having therein a plurality of chambers, each of which is adapted to receive therein a plastic substance of a selected color and is provided with a discharge opening for the substance; means for ejecting the substance from each chamber through the respective discharge opening; means for simultaneously operating the ejecting means in the different chambers; and means for rotating the body in the frame member, the rotating means being associated with the means for operating the ejecting means so that the substance ejected from the chambers may be of a braid-like form and that the imitative strands of the ejected substance may be colored according to the color of the substance in the respective chamber.

3. A device of the character described, comprising a contractible frame member; a body rotatably mounted in the frame member, the body having therein a plurality of chambers, each of which is adapted to receive therein a plastic substance of a selected color and is provided with a discharge opening for the substance; means for ejecting the substance from each chamber through the respective discharge opening; means for operating the ejecting means; means for rotating the body in the frame member, the rotating means being associated with the means for operating the ejecting means so that the substance ejected from the chambers may be of a braid-like form and that the imitative strands of the ejected substance may be colored according to the color of the substance in the respective chamber; and means for adjusting the frame member so that the body may rotate freely therein or that the frame member may frictionally engage the body with any desired degree of tension, as, and for the purpose, set forth.

4. A device of the character described, comprising a frame member; a plurality of tubular members connected so as to form a unit, the unit being rotatably mounted in the frame member, and each tubular member being adapted to receive therein a plastic substance of a selected color; a piston reciprocally mounted in each tubular member so as to be adapted to discharge the substance from the tubular member at one end thereof, each piston having a stem extending through the other end of the respective tubular member; a screw rotatably connected with the piston stems and having a threaded

connection with the tubular-member connection; and means for rotating the screw, thus causing movement of the pistons in the respective tubular members and, by the resistance of the substance in each tubular member when the pistons are moved toward the discharge ends of the tubular members, simultaneously causing the tubular members to rotate, as, and for the purpose, set forth.

5. A device of the character described, comprising a frame member; a substantially cylindrical body rotatably mounted in the frame member, the body having therein a plurality of chambers, each of which is adapted to receive therein a plastic substance of a selected color and is at one end provided with a discharge opening for the substance; a piston reciprocally mounted in each chamber so as to be adapted to eject the substance from the chamber through the discharge opening, each piston having a stem extending beyond the respective chamber at the end opposite to the discharge opening; a screw rotatably connected with the piston stems and having a threaded connection with the body; and means for rotating the screw, thus causing movement of the pistons in the respective chambers and, by the resistance of the substance in each chamber when the pistons are moved toward the discharge openings of the chambers, simultaneously causing the body to rotate, as, and for the purpose, set forth.

6. A device of the character described, comprising a frame member; a plurality of tubular members connected so as to form a unit, the unit being rotatably mounted in the frame member, and each tubular member being adapted to receive therein a plastic substance of a selected color; a piston reciprocally mounted in each tubular member so as to be adapted to eject the substance from the tubular member at one end thereof, each piston having a stem extending through the other end of the respective tubular member; a screw rotatably connected with the piston stems and having a threaded connection with

the tubular-member connection; means for rotating the screw, thus causing movement of the pistons in the respective tubular members and, by the resistance of the substance in each tubular member when the pistons are moved toward the discharge ends of the tubular members, simultaneously causing the tubular members to rotate; and a discharge nozzle adapted to be removably secured to each tubular member at the discharge end thereof and being so constructed that the exit opening of the nozzle may be positioned in proximity to the axis of the unit of tubular members, as, and for the purpose, set forth.

7. A device of the character described, comprising a frame member; a substantially cylindrical body mounted in the frame member, the body having therein a plurality of chambers, each of which is adapted to receive therein a plastic substance of a selected color and at one end is provided with a discharge opening for the substance; a piston reciprocally mounted in each chamber so as to be adapted to eject the substance from the chamber through the discharge opening, each piston having a stem extending beyond the respective chamber at the end opposite to the discharge opening; a screw rotatably connected with the piston stems and having a threaded connection with the body; means for rotating the screw, thus causing movement of the pistons in the respective chambers and, by the resistance of the substance in each chamber when the pistons are moved toward the discharge openings of the chambers, simultaneously causing the body to rotate; and a discharge nozzle adapted to be removably secured to each chamber at the discharge opening thereof and being so constructed that the exit opening of the nozzle may be positioned in proximity to the axis of the body, as, and for the purpose, set forth.

Signed at Los Angeles, in the county of Los Angeles and State of California this fifth day of March, A. D. 1928.

JOHN A. OST.