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E. B. NICHOLS

ROTARY AGITATOR

Filed Dec. 7, 1923

Fig. 1

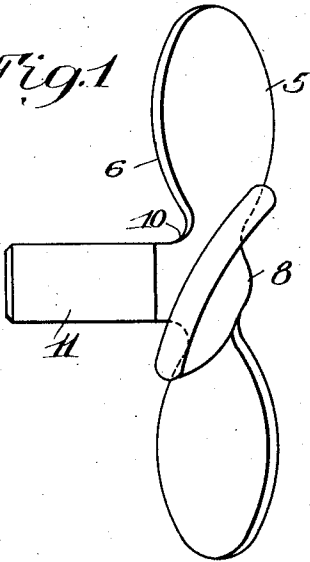


Fig. 2

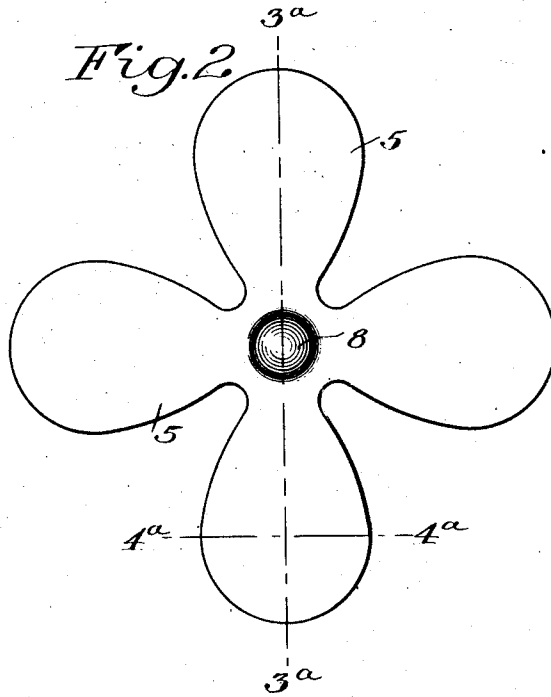


Fig. 3

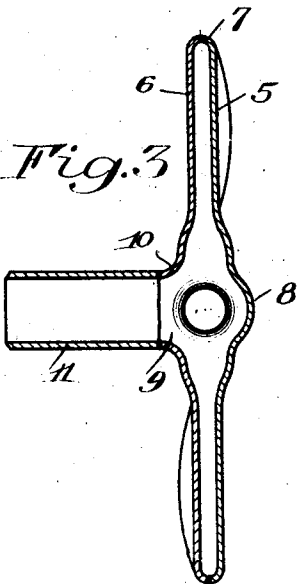
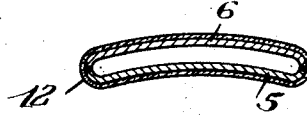


Fig. 4



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ROTARY AGITATOR.

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This invention relates to rotary agitators of the variety adapted for example, for stirring the contents of a container, one object of the invention being to provide a simple, practical and economical agitator of this character capable of being constructed by practical methods from sheet metal blanks cut, formed and united to afford a light but rigid article of efficient design. A further object is the provision of an agitator formed from blanks of sheet metal in such a manner as to be efficiently adapted for the application thereto of a fused protective coating of vitreous material. To these and other ends the invention consists in certain improvements and combinations of parts, all as will be hereinafter more fully described, the novel features being pointed out in the claims at the end of the specification.

In the drawings:

Figure 1 is a side view of an agitator embodying the present invention;

Figure 2 is a front end view of the same;

Figure 3 is a sectional view on the line 3^a—3^a in Figure 2, and

Figure 4 is a cross sectional view of one of the agitator blades on the line 4^a—4^a of Figure 2.

Similar reference numerals throughout the several views indicate the same parts.

The present invention provides a rotary type agitator economically constructed from sheet metal by practical forming methods and requiring therefor a minimum of metal material. This is a substantial advantage especially where it is desired to employ a more expensive metal of noncorrosive nature but the invention offers the further important advantage of affording a character of construction particularly adapted for receiving a fused coating of glass enamel or other vitreous material having the various desirable qualities well understood in the art.

Referring more particularly to the drawings, the present embodiment of the invention is shown as an agitator of the screw or helical type but the invention is applicable in its broader aspects to other types as well. In this embodiment there are employed a pair of sheet metal blanks 5 and 6 each cut to provide a central hub and radial blade portion of the screw propeller variety as shown in Figure 2. These blanks are of the same size and shape in outline and their peripheral margins are turned or rolled toward

each other as at 7 so that the blanks may be brought together with the margins coinciding in abutting relation as shown in Figure 3. The meeting edges are united as by welding, brazing, or the like, to form an integral hollow closed body having thin metal walls of uniform mass throughout. The blade portions are formed up at a substantially helical propelling inclination to the plane of rotation and may be given practically any desired shape or design for producing efficient agitating operation.

The forward blank 5, as best shown in Figure 3, is preferably provided with a forwardly projecting central boss 8 for assisting the flow of the agitated material and avoiding the formation of a region of reduced pressure in this locality, as well understood in the art. The rear blank 6 has its hub portion provided with a central shaft opening 9 with the margin thereof rolled transversely rearward as at 10. A length of tubing 11 of substantially the diameter of the shaft opening in the agitator has an end fixed to the margin of the opening, as for example by welding, brazing, or the like, to provide additional bearing area for the attachment of a driving shaft.

While the construction described above may be economically utilized for providing an agitator formed of noncorrosive metal, it has in addition the important advantage that a metallic agitator body is thus afforded particularly adapted for subjection to a heating process for fusing or baking glass enamel or other vitreous material, as a protective coating over its exterior, as indicated on an exaggerated scale at 12, Figure 4. It is to be noted that the walls of the body as constructed are of uniform mass throughout with all portions of the interior in free communication with one another and with the exterior through the shaft opening, as desirable for equalizing temperature conditions and gaseous pressures created during such fusing processes, as well understood in the art, thereby insuring the production of an article of uniformly good quality with little waste in manufacture. As apparent from the description and drawings an agitator so constructed is of light weight but substantial strength which may be increased as required by the use of sheet material of substantial thickness and strength. The agitator furthermore has a relatively smooth and con-

tinuous surface protected by an unbroken coating of enamel as desirable from a sanitary aspect.

I claim as my invention:

- 5 1. A rotary, screw type agitator comprising a hollow closed body formed by a pair of sheet metal blanks cut to provide hub portions and radial blades, with the peripheral margins of said blanks rolled toward each other and welded together, said blades having a substantially helical inclination, a forwardly projecting boss centrally of the forward blank, said rear blank having a central shaft opening with its margin rolled rearwardly, and a shaft receiving sleeve welded to said opening margin in extension thereof.
- 10 2. A rotary, screw type agitator comprising a hollow closed body formed by a pair of sheet metal blanks cut to provide hub portions and radial blades, with the peripheral margins of said blanks rolled toward
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each other and welded together, said blades having a helical inclination and the rear of said blanks having a shaft opening, a shaft receiving sleeve welded to the margin of said shaft opening, and a fused coating of vitreous material protecting the exterior of the body.

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3. A rotary, screw type agitator comprising a hollow body constructed of a pair of sheet metal blanks cut to form central portions with blades extending radially therefrom, said blanks being stamped so that the entire peripheral edge of each blade is turned to extend at an angle to the axis of rotation of the agitator, said blanks being united by welding said edges together one of the blanks having a projecting hub portion and a shaft receiving sleeve having one end abutting the end of said hub portion and united therewith by welding.

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