I. A. BURNETT.

ALLOY MIXER.

APPLICATION FILED APR. 9, 1921.

1,413,651. Patented Apr. 25, 1922.

Fig. 1

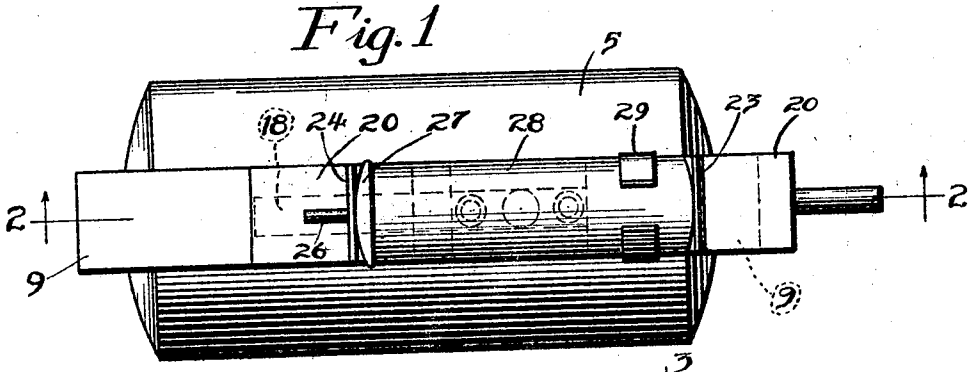


Fig. 2.

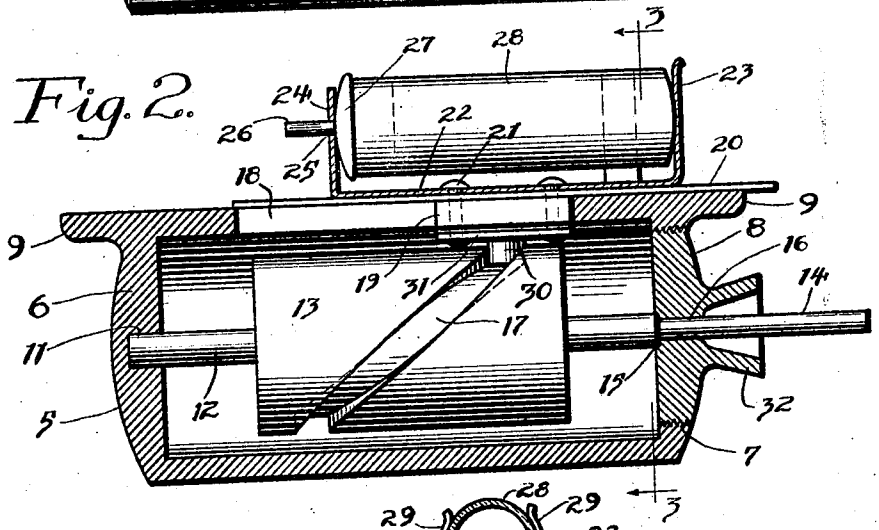
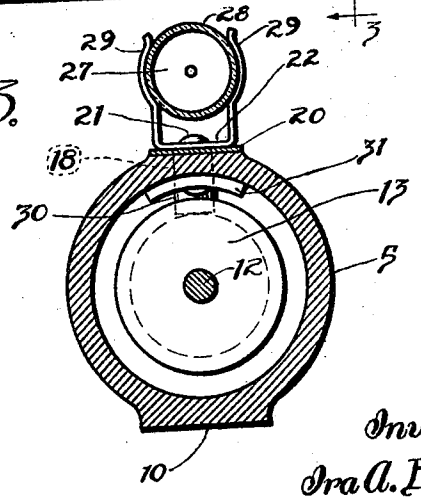


Fig. 3.



Witness

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ALLOY MIXER.

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To all whom it may concern:

Be it known that I, IRA A. BURNETT, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in an Alloy Mixer, of which the following is a specification.

This invention relates to improvements in means for converting rotary motion into reciprocatory motion, and has particular relation to a device of this character, which, while it is primarily intended for use in connection with motor-driven dental-engine hand-pieces, by dentists, for thoroughly and quickly mixing the ingredients of alloy used for dental purposes, yet, it is applicable for use as an agitator or mixer for other purposes or other ingredients or articles, and I desire it to be understood that it may be employed in connection with any suitable driving force and for any purpose that it may be found to be adapted, without a departure from the spirit of the invention.

In the accompanying drawing, I have shown the invention embodied in a comparatively small and portable device adapted to be held manually and operated by the handpiece of a dental-engine applied to one end of the shaft of the rotor of the mixer, and in the following explanation, and description, will refer to the parts of the device as being constructed and adapted for a mixer or agitator of the above mentioned portable and manually held one. However, it will be manifest from the following description and explanation, that the parts can be made upon a much larger scale and the body of the same can be permanently mounted should the device be intended for heavy work or duty.

The invention consists in certain peculiarities of the construction, novel arrangement and operation of the various parts thereof as will be hereinafter more fully set forth and specifically claimed.

In the accompanying drawing which serves to illustrate an embodiment of the invention—

Fig. 1 is a plan view thereof.

Fig. 2 is a central longitudinal sectional view taken on line 2—2 of Fig. 1, and

Fig. 3 is a cross-sectional view taken on line 3—3 of Fig. 2.

Like numerals of reference refer to corresponding parts throughout the different views of the drawing.

The reference numeral 5 designates the body or frame of the mixer, which body or frame is by preference substantially cylindrical in shape and has one of its ends permanently closed by a transverse wall 6 and its other end provided with a slightly tapered screw-threaded opening 7 for the reception of a centrally apertured plug 8 which is externally screw-threaded and slightly inwardly tapered for engagement with the screw-threaded opening 7 of the body or frame.

Each end of the body 5 is by preference provided at its upper portion with an outward and longitudinally disposed extension 9 which have their upper surfaces flat and located in the same plan as will be readily understood by reference to Fig. 2 of the drawing.

The lower portion of the body 5 is also flattened as at 10 to provide a base on which the mixer may rest when placed on a table or other flat surface. The vertical or transverse wall 6 at one end of the body 5 is provided in its inner surface with a bearing or journal socket 11 for the reception and operation of one end of the shaft or axle 12 of a rotor 13 which is preferably cylindrical in shape as shown and is fixedly mounted on the shaft 12. This shaft, preferably, has a reduced portion 14 which results in an annular shoulder 15 located a slight distance from the end of the rotor 13 adjacent said reduced portion of said shaft. The reduced portion 14 of the shaft is extended through and journaled in the central aperture 16 of the plug 8 in such a manner that when said plug is screwed up as shown in Fig. 2 of the drawing, the shoulder 15 on the shaft 12 will be located close to or in contact with the inner surface of the plug 8, which construction will prevent any material longitudinal movement of said shaft and the rotor which it carries. The rotor 13 is provided with an endless race-way 17 which is located longitudinally and diagonally with respect to the rotor and when viewed from the top or bottom, when the parts are in the positions shown in Fig. 2, presents substantially an ellipse, or in other words, an elongated figure having its ends rounded.

The upper surface of the body 5 is provided with a longitudinally disposed slot 18 in which is slidably located a block or enlargement 19 carried on the lower surface of a plate 20 which is longitudinally located on the flattened upper portion of the body 5 and

like portions of the extensions 9 for longitudinal movement.

Mounted longitudinally on the upper surface of the plate 20 and secured thereto by means of rivets 21 is the base 22 of the holder for the container of the ingredients of the alloy or other material. As shown, this holder has at one of its ends an upwardly extended and transversely disposed flat member 23 which is by preference slightly resilient and at its other end a similarly disposed and constructed member 24 which is provided below its upper end with an opening 25 for the reception of a pin 26 extended outwardly from the central portion of the stopper 27 which is used to close the open end of the container 28, which container may be made of glass or other suitable material and is preferably cylindrical in shape as shown, and of about the requisite length to fit with its stopper 27 in place between the arms or end pieces 23 and 24 of the holder.

Near one of its ends the base 22 of the holder is provided at each of its side edges with an upwardly extended clamping jaw 29 used to engage the sides of the container 28 near one of its ends. Extended from the block or enlargement 19 and within the body or frame 5 as well as into the raceway 17 is a projection 30 which, when the rotor 13 is rotated will travel in the race-way 17 thereof in such a manner as to cause rapid back and forth movement of the holder and container when the shaft 12 is rotated through the instrumentality of a dental-engine and its hand-piece or otherwise.

By this rapid reciprocating movement of the holder and container of the alloy it is manifest that the ingredients of the alloy will be quickly, thoroughly and most efficiently mixed.

To prevent displacement of the holder 22 and its block or enlargement 19, a locking plate 31 is secured to the lower surface of said block or enlargement and preferably by means of the rivets 21, the inner ends of which can be reached and brazed or clinched by means of a suitable instrument inserted through the opening 7 in one end of the body after the screw plug 8 has been removed therefrom.

To remove the container 28 from between the members 23 and 24 and clamping jaws 29 of the holder, it will be understood that said jaws which are slightly resilient, can be flexed from each other and the member 23 sprung outwardly from the member 24 when it is obvious the receptacle 28 can be raised at its portion adjacent the member 23, after which the projection or pin 26 can be withdrawn from the opening in the member 24 of the holder.

The screw plug 18 is provided around its central opening 16 with an outwardly flared extension 32 into which the front end of the hand-piece of the dental-engine may be extended when said hand-piece is placed in operative position on the reduced portion 14 of the shaft 12 of the rotor in which position said hand-piece will be readily held on the reduced portion 14 by reason of the engagement of its chuck mechanism therewith.

The distance between the lower portion of the floor of the body or frame and the journal bearings of the shaft of the rotor is such that after the rotor has been inserted through the screw-threaded opening and before the inner end of its shaft has been inserted in the bearing thereof, said rotor can be allowed to rest on the floor of the body when by turning it to the proper position the raceway in the rotor can be positioned to receive the projection 30 carried by the holder for the container after which the inner end of the shaft of the rotor can be inserted in the bearing therefor and the plug 8 screwed in the proper position.

Having thus fully described my invention, what I claim as new and desire to secure by Letters Patent is—

A device of the class described including a longitudinally slotted body or frame, a container-carrying holder mounted on the frame and having a projection in slidable engagement with the slot thereof, rotary means mounted in the frame in engagement with said projection on the holder for imparting reciprocatory movement thereto, said holder comprising an elongated piece having at one of its ends an apertured extension and at its opposite end a resilient apertured extension disposed in parallelism with the first named extension, said holder having at each of its sides between its ends a clamping jaw.

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