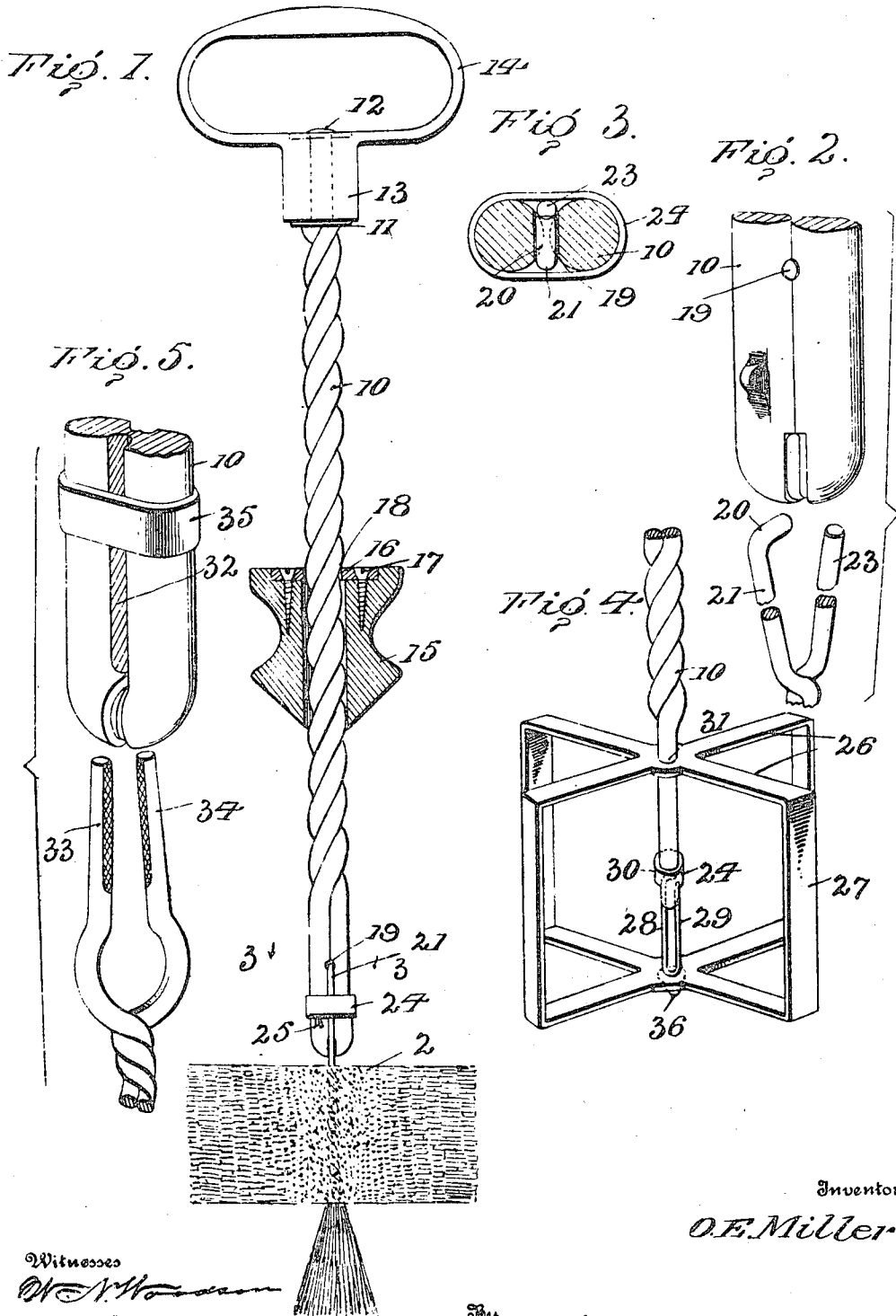


O. E. MILLER.
 ROTARY HAND DEVICE.
 APPLICATION FILED MAR. 23, 1909.

949,436.

Patented Feb. 15, 1910.



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ORAM E. MILLER, OF PHILADELPHIA, PENNSYLVANIA.

ROTARY HAND DEVICE.

949,436.

Specification of Letters Patent.

Patented Feb. 15, 1910.

Application filed March 23, 1909. Serial No. 485,207.

To all whom it may concern:

Be it known that I, ORAM E. MILLER, citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Rotary Hand Devices, of which the following is a specification.

This invention relates to rotary hand implements and refers particularly to a device for cleansing bottles or the like.

The invention has for another object the provision of an improved fastening means which may be applied to rotary brushes or beaters by means of which the brushes or beaters may be attached to the device in order to be operated thereby.

The invention further aims simplicity in the construction of a device of this character to enable the economical manufacture of the same and also the easy operation of the device enabling the user thereof to cleanse the same and to keep the device in a sanitary condition.

For a full understanding of the invention reference is to be had to the following description and accompanying drawings, in which:—

Figure 1 is a side elevation of the device having a rotary brush applied thereto disclosing a part of the same in section. Fig. 2 is a detailed perspective of the lower end of the shank and spring-arms in a detached position. Fig. 3 is a transverse section on the line 3—3 of Fig. 1. Fig. 4 is a detailed perspective of a rotary beater as applied to the lower end of the shank, and Fig. 5 is a detailed perspective of a modification of the lower end of the shank and spring-arms for engagement with the same.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

Referring to the drawings the numeral 10 designates a shank which is preferably formed from two portions of round wire which are twisted about one another in order to form spiral grooves about the outer face of the same. The shank 10 is terminated in a flange 11 which is provided with an upwardly extended pin 12 upon which is rotatably disposed a sleeve 13 which is provided with a hand-loop 14. The sleeve 13 and hand-loop 14 comprise the handle of the device in its preferred form, although any

form of handle may be employed which is loosely mounted upon the pin 12. Upon the shank 10 a guide 15 is positioned which is so formed with a lower beveled end that the same is applicable to the neck of a bottle in order to retain the same in fixed relation thereto during the reciprocation of the shank 10 therethrough. The guide 15 is provided with a metal plate 16 which is countersunk into the upper face of the same and retained therein in any suitable manner as by means of screws 17, the plate 16 being provided centrally with an elongated opening 18 through which the shank 10 is passed and by means of which the shank 10 is rotated when longitudinally reciprocated therethrough.

The lower extremity of the shank 10 is flattened by reason of the parallel arrangement of the wires which comprise the same and is provided with a transverse aperture 19 for the reception of a lug 20 which is formed upon a spring-arm 21 carried by a rotary brush 22. The rotary brush 22 is disclosed as being constructed of two lengths of wire which are twisted about one another and which carry tufts of bristles. The upper extremities of the twisted wires of the brush 22 are terminated, one in the spring-arm 21 and the opposite wire in a cooperating spring arm 23. These arms 21 and 23 are designed to lie in the longitudinally extending depressions or grooves that are formed by the two parallel and untwisted portions of the round wires that form the shank 10, the lug 20 of one of the spring arms extending into the aperture 19.

For the purpose of retaining the spring-arms 21 and 23 against the opposite sides of the shank 10 and to hold the lug 20 in the aperture 19 a sleeve 24 is slidably disposed upon the lower end of the shank 10 and adapted for sliding engagement over the arms 21 and 23. The sleeve 24 is limited in its downward movement by means of a projection 25 formed upon the lower end of the shank 10 to prevent the displacement of the sleeve 24 therefrom.

In the drawings is disclosed a beater which is adapted to be engaged upon the lower end of the shank 10 in lieu of the rotary brush 22, the same comprising a plurality of arms 26 which are formed in various lengths, the same being disposed in two series which are mounted in parallel and which are joined at their outer extrem-

ities by means of bars 27 having a slight angular arrangement to the longitudinal axes of the arms 26. The intersecting portion of the lower series of arms 26 is provided with upwardly projecting spring-arms 28 and 29 which are adapted for engagement against the opposite sides of the lower end of the shank 10, the arm 28 being provided with a lug 30 adapted for engagement in the aperture 19 and to be retained therein through the medium of the sleeve 24. The intersecting portion of the upper series of the arms 26 is provided with an aperture 31, to receive the lower end of the shank 10.

In the drawings (Fig. 5) is disclosed a slightly modified form of the means for retaining the rotary brush 22 or the beater arms 26 on the lower end of the shank 10. This form discloses the opposite sides of the lower end of the shank 10 as having a longitudinal central roughened or serrated portion 32 against which arms 33 and 34 are adapted to impinge, the arms 33 and 34 being carried by the rotary brush 22 or by the arms 26 of the beater and being so bent as to extend inwardly and frictionally engage against the opposite sides of the lower end of the shank 10. In this construction a sleeve 35 is employed which is slidably engaged against the opposite sides of the arms 33 and 34 to retain the same in such position.

In the operation of the device when employed in cleansing the interior of the bottles or the like, the guide 15 is engaged upon the neck of the bottle having the rotary brush 22 inserted within the same, when the handle is grasped and vertically reciprocated thereby producing the alternate rotation of the shank 10 which carries the rotary brush 22 therewith and causes the bristles to rub against the sides of the bottle.

When the device is employed as a liquid beater the guide 15 is grasped in one hand while the loop 14 is engaged by the opposite hand and the guide 15 is reciprocated vertically while the handle 14 is held in rigid position thereby causing the rotation of the shank 10 which carries therewith the arms 26 to mix or beat the liquid within which the same is inserted.

The lower beater arms 26 are provided at their point of intersecting with a depending stud 36 upon which the complete device is rested while engaged in a receptacle to stir

or agitate therein and so space the same slightly from the bottom of such receptacle.

Having thus described the invention what is claimed as new is:—

1. A device of the character described, comprising a shank formed of a wire twisted upon itself for a portion of its length to provide a spiral groove, the ends of said wire extending, in untwisted relation, parallel to each other, and contacting, whereby to produce on opposite sides of the shank and at one end thereof longitudinally extending grooves or depressions, a handle rotatably mounted on one end of said shank, a guide slidably engaged on said shank and arranged to effect the rotation of the shank by and upon the reciprocating movement of the sleeve thereon, the shank being formed in the untwisted end thereof with a transversely extending aperture, and a rotary member provided with spring arms arranged to lie in the opposite grooves of the shank, one of said spring arms being formed with a lug designed to enter the aperture, and a sleeve slidably mounted on the untwisted portion of the shank and arranged to be slipped over said arms.

2. A device of the character described, comprising a shank formed of a wire twisted upon itself for a portion of its length to provide a spiral groove, the ends of said wire extending, in untwisted relation, parallel to each other, and contacting, whereby to produce on opposite sides of the shank, and at one end thereof, longitudinally extending grooves or depressions, a handle rotatably mounted on one end of said shank, a guide slidably engaged on said shank and arranged to effect the rotation of the shank by and upon the reciprocating movement of the sleeve thereon, a rotary member provided with spring arms adapted to extend about the opposite sides of the untwisted portion of the shank and lie in the longitudinally extending grooves thereof, and a sleeve slidably mounted on the untwisted portion of the shank and arranged to be slipped over said arms.

In testimony whereof I affix my signature in presence of two witnesses.

ORAM E. MILLER. [L. S.]

Witnesses:

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