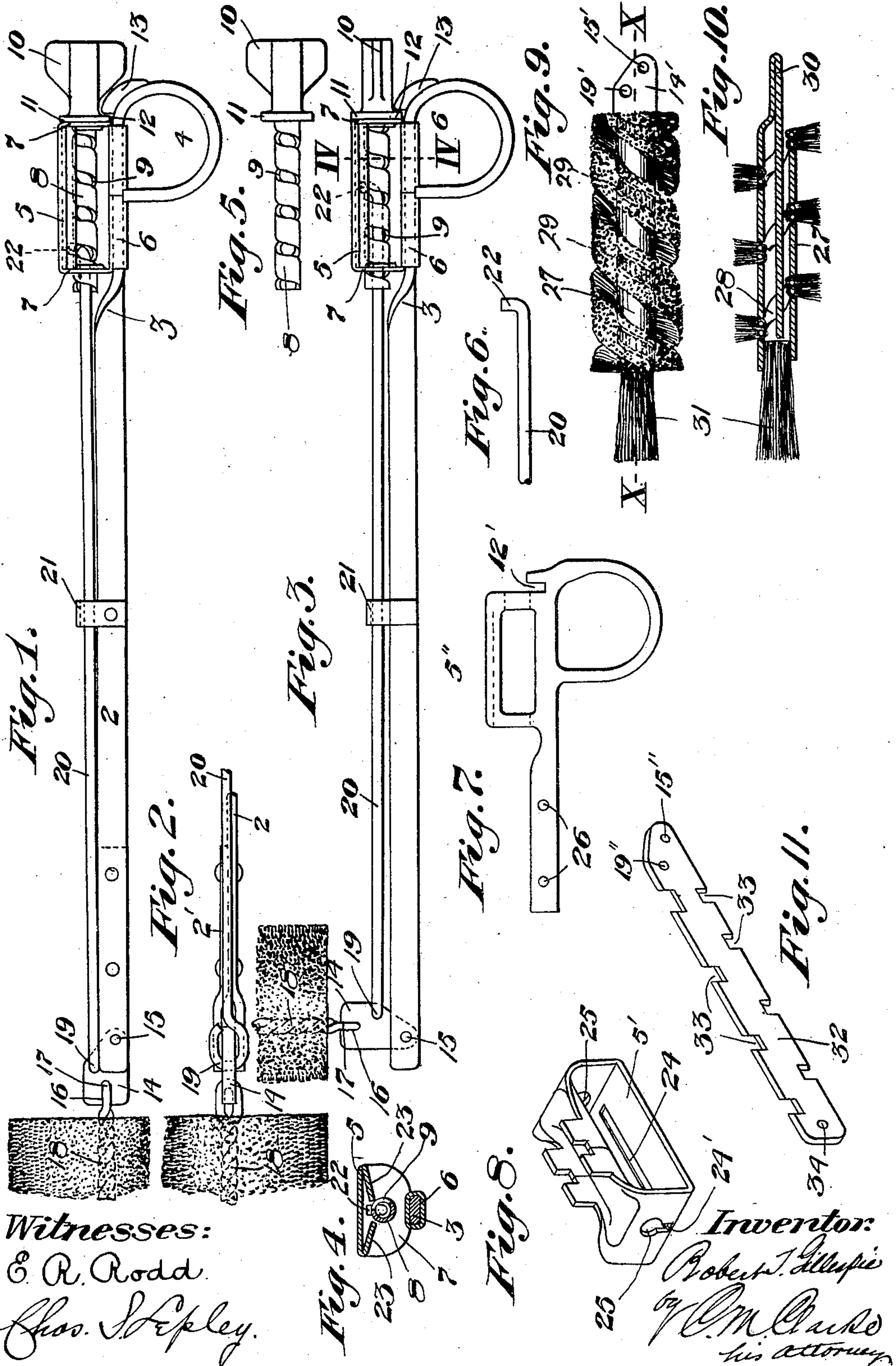


No. 879,764.

PATENTED FEB. 18, 1908.

R. T. GILLESPIE.  
ADJUSTABLE CLEANING BRUSH.  
APPLICATION FILED SEPT. 6, 1906.





# UNITED STATES PATENT OFFICE.

ROBERT T. GILLESPIE, OF BLOOMFIELD, NEW JERSEY.

## ADJUSTABLE CLEANING-BRUSH.

No. 879,764.

Specification of Letters Patent.

Patented Feb. 18, 1908.

Application filed September 6, 1906. Serial No. 333,524.

*To all whom it may concern:*

Be it known that I, ROBERT T. GILLESPIE, a citizen of the United States, residing at 83 Linden avenue, Bloomfield, New Jersey, have invented certain new and useful Improvements in Adjustable Cleaning-Brushes, of which the following is a specification, reference being had therein to the accompanying drawing.

My invention consists of a brush or cleaning implement adapted for use in the interior of hollow vessels or other articles such as jars, bottles, cruets, lamp chimneys, etc. and it has for its object to provide a brush which may be readily inserted within the reduced neck of such a vessel and then adjusted so as to present the brushes against the interior faces of the vessel at varying angles, or against the bottom portion. Ordinarily vessels of this character cannot be cleaned with an ordinary brushing implement, owing to the inflexible character of the brush stem, and my invention is designed to provide an article which may be readily and quickly adjusted by the hand while the brush is in the interior of the vessel being cleaned so as to reach all of its parts, and capable of being held in such adjusted position with facility and ease.

Generally stated, the device consists of a longitudinal shank portion of any suitable or convenient form, provided at the holding end with a finger extremity or loop, an adjustable rod having a movable adjusting terminal in convenient proximity to said loop and adapted for operation by means at the other end of the shank, so connected with said rod that it may be adjusted thereby and securely held in combination with the main shank or stem, as shall be more fully hereinafter described.

The invention comprises certain features of improvement, advantage and novelty in that class of similar devices shown and described in my prior application filed April 5th, 1906 bearing the Ser. No. 310,064, and refers more particularly to the adjusting mechanism.

Referring now to the drawings, Figure 1. is a longitudinal view in elevation showing the brush extended in alinement with the main shank or stem. Fig. 2. is a partial plan view of Fig. 1. Fig. 3. is a view similar to Fig. 1, showing the brush turned at right angles. Fig. 4. is a cross sectional view on the line IV. IV. of Fig. 3. Fig. 5. is a detail

view in elevation of the rod adjusting device. Fig. 6. is a detail view of the rear end of the rod, adapted to cooperate with said adjusting device. Fig. 7. is a detail view in side elevation of a modified form of holding terminal. Fig. 8. is a similar view of another form of the frame for the adjusting device. Fig. 9. is a detail view of a modified construction of brush terminal. Fig. 10. is a horizontal sectional view on the line X. X. of Fig. 9. Fig. 11. is a detail view showing a further modified form of brush base.

Referring to the drawings, 2 represents the main shank or stem of the device, which as shown in Fig. 1 consists of a flat bar, twisted a quarter way around as indicated at 3 so as to present its edge for convenient attachment and cooperation of the adjusting stem and also to present the flat side of the bar for engagement by the finger. At the holding terminal said bar is bent around into loop form as indicated at 4 and secured to the bar is a rectangular frame 5, conveniently made of sheet metal as shown in Fig. 1, 3 and 4 and securely attached to the holding end of the shank by bending the metal around the bar as indicated at 6.

Extending longitudinally through the ends 7, 7, of said frame, is a spirally wound adjusting stem 8 conveniently made of a band of thin sheet metal with a corresponding spirally arranged slot 9 extending throughout its length. Said stem is provided with a terminal grasping extremity 10 of convenient form for engagement by the finger and thumb and is also provided with an annular flange 11 projecting up into a recess 12 formed between the rear frame end 7 and abutment 13. Said abutment may be attached to the device as shown, or a receiving groove for the flange 11 may be cut across the under side of the shank at the proper position.

At the other end of shank 2 it is provided with a brush bearing link 14 pivoted at 15 between the end of the main shank 2 and a supplemental blade 2' secured thereon so as to provide a fork, or the shank 2 may be divided back sufficiently far for the same purpose. The link 14 consists of a flat metallic block, widened at its outer end sufficiently to provide a bearing material for the operating rod and provided with a transverse hole and longitudinal recesses or grooves 16 adapted to receive the embracing wires 17 of the brush. These wires are twisted together be-



yond such connection as at 18, engaging the assembled bristles of the brush, as will be readily understood. An especial feature of advantage of this construction is that the  
 5 tight twisting of the wires will hold them into engagement with the grooves 16 whereby the rigid engagement of the brush holding wires with the block 14 is insured, thus stiffly connecting these elements.

10 The block 14 is provided with a transverse opening 19 somewhat beyond the pivotal bearing 15, with which is connected the terminal of an operating rod 20 extending backwardly along the edge of the shank 2, preferably through one or more guides 21 and is  
 15 turned down at its other end to provide a lip extremity 22. Said extremity passes outwardly through the groove 9 in the spiral adjusting stem 8, the main stem extending centrally therethrough, and it will thus be  
 20 seen that upon turning the stem 9 in one direction or the other, forward or back motion will be imparted to the operating rod 20.

For the purpose of positively holding the  
 25 lip 22 to prevent turning, the side edges of the frame 5 are turned inwardly as shown in Fig. 4 at 23, 23, providing a longitudinal slot into which said lip 22 projects, as clearly shown. As thus constructed the brush may be set at  
 30 any desired angle or in longitudinal alinement with the shank 2 and will there remain, the spiral stem acting as a positive lock to prevent movement in either direction.

In Fig. 8 is shown a modified construction  
 35 of the frame for the adjusting stem formed of sheet metal and adapted to provide a bearing and to cooperate with the other elements of the device in the same manner generally as just described. In this construction the  
 40 bottom plate 5' of the frame is provided with a longitudinal slot 24 adapted to engage the lip 22 and is likewise provided with openings 25, 25, at each end for the spiral stem 8, the front opening also being provided with a  
 45 terminal undercut slot 24' providing a clearance for entrance of the lip 22.

In Fig. 7 I show a holding handle made in the form of a casting, to which the shank 2 may be riveted through holes 26, the spiral  
 50 stem passing through the end walls of the downwardly extended holding frame 5'', while a transverse slot 12' is provided for the flange 11. In other respects the holding terminal and its combination with the other  
 55 parts of the device are the same as already described.

In Figs. 9 and 10 I show a brush holding ferrule consisting of a spirally wound band of metal 27 provided with a continuous clear-  
 60 ance slot 28, into which the bristle holding wires 29 and the bristles held thereby are forced and spirally wound as clearly shown, the bristles fitting tightly in the spiral groove. The band forming the spiral is extended at  
 65 the back in flat form as indicated at 30, re-

doubled upon itself and projecting inwardly through a portion of the length of the ferrule, as shown in Fig. 10. This construction provides a strong, durable device for the  
 70 purpose, having a rear integral pivoting extremity 14' provided with the pivotal bearing hole 15' and the link receiving hole 19'. A tuft of bristles 31 is also secured in the end of the ferrule, and when thus assembled a  
 75 strong, convenient brush, ready for immediate attachment to the end of the shank 2 without the necessity of a supplemental link 14, is provided.

The same results generally may be secured by employing a flat bar 32, see Fig. 11,  
 80 provided with a series of oppositely arranged staggered notches 33 adapted to receive the bristle-holding wires in spiral form, having also a terminal hole 34 for attachment of terminal tufts, in the same manner as the  
 85 main brush is secured to the block 14 in Fig. 1. At the other end the bar 32 is provided with the pivotal hole 15'' and rod attaching hole 19'', and when assembled with the shank and connected with the other portions of the  
 90 device will operate in the same manner.

The operation of the implement will be readily understood from the foregoing description. By reason of the construction, the brush may be made of few parts, is  
 95 simple and cheap, very strong and durable, not liable to get out of order, and the entire device will be found to be generally well adapted and efficient for the objects in view. It may be changed or varied in different  
 100 details of construction by the skilled mechanic.

What I claim is:

1. A cleaning implement comprising a main shank portion provided with terminal  
 105 cheeks, a brush having a bearing extremity pivoted between said cheeks, an operating rod connected with the bearing extremity of said brush extending backwardly and provided with a laterally projecting terminal,  
 110 and a spirally grooved stem engaging said terminal, substantially as set forth.

2. In a cleaning brush, the combination of a main shank, a pivoted brush, an operating  
 115 rod having a laterally extending element, and a spirally grooved rotatable shank engaging said laterally extending element of the rod to adjust the said rod longitudinally, substantially as set forth.

3. In a cleaning brush, the combination of  
 120 a main shank, a pivoted brush, an operating rod having a laterally extending element, a spirally grooved rotatable shank engaging said laterally extending element of the rod, and means adapted to prevent rotation of  
 125 the operating rod, substantially as set forth.

4. In a cleaning brush, the combination with a holding shank, of a bearing frame, an  
 130 adjusting spirally grooved stem mounted in said frame, a pivoted brush, and an operating



rod connected with the brush, and engaging said spirally grooved stem, substantially as set forth.

5. The combination with a main shank provided with a holding terminal and a cleaning brush pivotally mounted at the other end of the shank, of a longitudinal operating rod having a laterally bent terminal, and a spirally grooved hollow shank engaging the terminal end of said rod, substantially as set forth.

6. The combination with a main shank provided with a holding terminal and a cleaning brush pivotally mounted at the other end of the shank, of a longitudinal operating rod having a laterally bent terminal, a spirally grooved hollow shank engaging the terminal end of said rod, and a surrounding frame therefor, substantially as set forth.

7. The combination with a main shank provided with a holding terminal and a cleaning brush pivotally mounted at the other end of the shank, of a longitudinal operating rod having a laterally bent terminal, and a spirally grooved hollow shank engaging the terminal end of said rod, a surrounding frame therefor, and a turning terminal for the spirally grooved shank, substantially as set forth.

8. In a brush, the combination of a longitudinally arranged cylindrical body portion formed of a flat band bent around in spiral form surrounding a cylindrical hollow interior, the adjacent edges of the band

being on a common longitudinal line and separated by an intervening spirally arranged opening providing recesses, and bristles and spirally arranged holding wires therefor seated in said recesses, substantially as set forth.

9. In a brush, the combination of a longitudinally arranged cylindrical body portion formed of a flat band bent around in spiral form surrounding a cylindrical hollow interior, the adjacent edges of the band being on a common longitudinal line and separated by an intervening spirally arranged opening providing recesses, bristles and spirally arranged holding wires therefor seated in said recesses, and a pivoting attaching terminal formed at one end of said spirally wound band, substantially as set forth.

10. In a brush, the combination of a spirally wound band having corresponding spirally arranged bristles mounted in said groove, and similarly arranged holding wires, said band being re-doubled upon itself to form a hinging terminal, and extending backwardly through the interior of the ferrule, substantially as set forth.

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

ROBERT T. GILLESPIE.

Witnesses:

JOHN J. MURRAY,  
THOMAS MCGOWAN.