Dec. 31, 1929. E. RICKERSBERG 1,741,435

COMBINATION BRUSH AND SPRAYING NOZZLE

Filed June 18, 1927

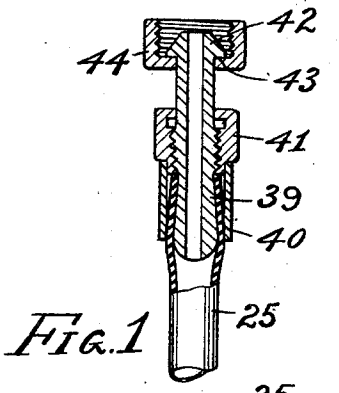


FIG. 1

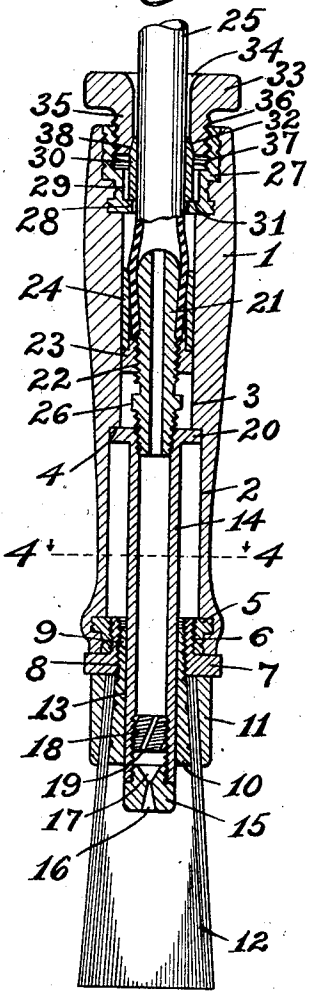


FIG. 2

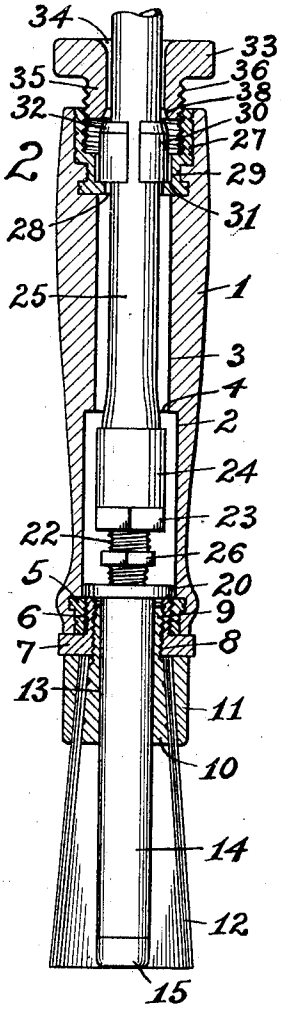


FIG. 3

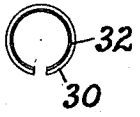
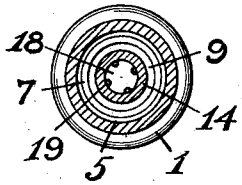


FIG. 4



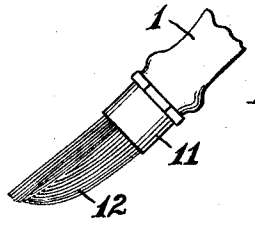


FIG. 5

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UNITED STATES PATENT OFFICE

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COMBINATION BRUSH AND SPRAYING NOZZLE

Application filed June 18, 1927. Serial No. 199,816.

This invention relates to brushes and more particularly to combination brushes and spraying nozzles for cleaning purposes.

The principal object of the invention is to provide a brush for use in combination with a spraying nozzle, which is adapted for scraping or scouring dishes, cooking utensils such as pots and pans, and other purposes at the same time that hot soapy water or simply clear hot water or other fluid is being sprayed upon the articles to be cleaned.

Another object of the invention is to provide a device of the above character, in which the nozzle is manually adjustable relative to the brush so that the fluid issuing from the nozzle will strike the brush when it is desired to use the brush during spraying, or permit independent use of the nozzle for spraying.

A further object of the invention is to provide a device of the above character of practical construction for use in connection with the spraying apparatus for providing hot soapy water or hot clear water disclosed in application No. 187,463.

With the above and other objects in view, the invention will be hereinafter fully described as illustrated in the accompanying drawings, and the novel features thereof will be distinctly pointed out in the appended claims.

In the drawings, similar characters of reference indicate corresponding parts.

Figure 1 is a longitudinal sectional view of a combination brush and adjustable spraying nozzle constructed in accordance with my invention, the nozzle being in its extreme inner or withdrawn position,

Fig. 2 is a similar view, the nozzle being in its outer position,

Fig. 3 is a plan view of the clamping collar,

Fig. 4 is a cross sectional view taken on line 4—4 of Fig. 1, and

Fig. 5 illustrates the brush, the bristles thereof being shown compressed together when used for scraping purposes.

Referring to the drawings, 1 represents a handle of suitable heat insulation material and light in weight preferably bakelite. The handle is provided with a bore 2 and a slightly smaller bore 3 thereby leaving an intermediate annular shoulder 4. Fixed in the lower end of the handle is a metallic bushing 5, which is threaded internally at 6 for receiving a plug 7. This plug is internally threaded at 8 for screwing upon the straight threaded end 9 of a circular wedge member 10, which is adapted to be drawn into a ferrule 11 for securely holding therein bristles of wire or other suitable material to form a hollow brush 12. The circular wedge member 10 is provided with a central longitudinal bore 13, in which is slidably mounted a nozzle 14 of tubular form having a removable tip 15, provided with oppositely tapering openings 16 and 17. A plug 18 is fixed in the nozzle 14 and is provided with suitable inclined grooves indicated by 19, which with the opposite openings 16 and 17 of the tip 15 give the fluid passing through said nozzle a whirling motion.

At the inner end of the nozzle 14 is a flange 20, which is adapted to slide in the bore 2 and engage the annular shoulder 4 and the bushing 5 for limiting the longitudinal movement of said nozzle. Fixed into the flanged end of the nozzle 14 is a cylindrical wedge member 21, which is threaded at 22 for receiving a nut 23 and is thereby drawn into a sleeve 24 for securely holding the inner end of a rubber tube 25. A flattened or nut portion 26 of the cylindrical wedge member 21 is provided for the application of a wrench. In order to lock the nozzle 14 in any desired position, a metallic bushing 27 is fixed in the upper end of the handle 1, and through an opening 28 of said bushing passes the rubber tube 25. The bushing 27 is bored at 29 to provide space for a split collar 30 of spring material, which encircles the rubber tube 25 and is adapted to grip the same. The bushing 27 rests upon an annular shoulder 31 at the lower end of the bushing 27, and its upper end is bevelled as indicated at 32. A locking nut 33 is provided with an opening 34 for receiving the rubber tube 25, and the neck 35 thereof is threaded at 36 for entering the threaded bore 37 of the bushing 27. The inner end of the opening 34 of the locking nut 33 is tapered, as indicated at 38, for fitting over

the upper bevelled end 32 of the split spring collar 30, and causing the same to contract and thereby grip the rubber tube 25 as said locking nut is moved inwardly by manual rotation thereof. Upon reverse rotation of the locking nut 33, the split spring collar releases the rubber tube 25.

The free end of the rubber tube 25 is provided with means for attachment to the spraying apparatus, and consists of a cylindrical wedge member 39 for holding said tube in a sleeve 40 by the use of a nut 41. The outer end of the cylindrical wedge member 39 terminates in a tapering head 42, which provides a shoulder 43 for a union nut 44 adapted to be secured to the threaded outlet of the spraying apparatus.

In practice, the nozzle 14 is at first in the withdrawn position and locked as shown in Figure 1, and hot soapy water is permitted to pass through the brush 12. When said nozzle is in its withdrawn position, the hot soapy water, due to its whirling motion and the spreading thereof, strikes the inner side of the bristles of the brush 12, and the brush may be manipulated by means of the handle 1 to serve for scraping articles to be cleaned while hot soapy water is flowing upon said articles. The ends of the bristles of the brush or the outer sides of the bristles of the brush may be used for scraping purposes, or the bristles at the opposite sides of the brush may be pressed together by pressure upon the handle, as shown in Fig. 5, when the brush is so used for scraping purposes. The scraping action of the brush will loosen any clinging particles from the articles being cleaned and difficult to remove, and then the locking nut 33 may be rotated to release the nozzle, and the nozzle adjusted to its outer position shown in Fig. 2. The spraying apparatus, to which this brush is connected, is now adjusted to provide simply clean hot water, and when the outer end of the nozzle is even with and clear of the ends of the bristles of the brush, the clean hot water will be sprayed upon the articles being cleaned for rinsing the same.

From the drawings and description, it is readily seen that this brush is practical in construction and well adapted for the purposes intended. It will be understood that minor changes in the details of construction may be made within the scope of the claims.

Having fully described my invention, what I claim is:

1. In a brush, the combination of a handle, bristles carried by the handle, the bristles being arranged in tubular form, a nozzle, the nozzle being slidably mounted within the tubular form of the brush, and means for locking the nozzle in an adjusted position.

2. In a brush, the combination of a handle, bristles carried by the handle, the bristles being arranged in a tubular form, a nozzle, the nozzle being adjustable within the tubular form of the bristles, and the nozzle having a tapering outlet for causing a fluid passing through the nozzle to strike the inner side of the tubular form of the bristles, when the outlet end of the nozzle is within the tubular form of the bristles.

3. In a brush, the combination of a handle, bristles carried by the handle, the bristles being arranged in a tubular form, a nozzle, the nozzle being adjustable within the tubular form of the bristles, the nozzle having a tapering outlet, a plug in the nozzle adjacent its outlet end, the plug having inclined grooves for causing a whirling motion of the fluid passing from the nozzle.

4. In a brush, the combination of a handle, bristles fixed to one end of the handle, the bristles being arranged in a tubular form, a nozzle, the nozzle being slidably mounted in the handle and within the tubular form of the bristles, means for limiting the movement of the nozzle relative to the free ends of the bristles, and means for locking the nozzle in an adjusted longitudinal position.

5. In a brush, the combination of a handle, bristles fixed to one end of the handle, the bristles being arranged in a tubular form, a nozzle, the nozzle being slidably mounted in the handle and within the tubular form of the bristles, means for limiting the movement of the nozzle, a flexible tube fixed to the nozzle, and means in the handle for gripping the tube to hold the nozzle in an adjusted position.

6. In a brush, the combination of a handle, bristles fixed to one end of the handle, the bristles being arranged in a tubular form, a nozzle, the nozzle being slidably mounted in the handle and within the tubular form of the bristles, means for limiting the movement of the nozzle, a flexible tube fixed to the nozzle, a split spring collar encircling the flexible tube, and a locking nut at the other end of the handle adapted to contract said collar for causing the collar to grip said flexible tube.

7. In a brush, the combination of a handle, bristles fixed to one end of the handle, the bristles being arranged in a tubular form, a nozzle, the nozzle being slidably mounted in the handle and within the tubular form of the bristles, means for limiting the movement of the nozzle, a flexible tube fixed to the nozzle, a split spring collar encircling the flexible tube, the collar having a bevelled end, a locking nut threaded into the other end of the handle, and the locking nut having a tapering opening adapted to co-operate with the bevelled end of said collar for contracting the collar to cause it to grip said flexible tube.

8. In a brush, the combination of a hollow handle, bristles fixed to the end of the handle, the bristles being arranged in a tubular form,

a nozzle slidably mounted in the handle within the tubular form of the bristles, a flexible tube fixed to the nozzle and extending through the handle, a bushing fixed to the other end of the handle, the bushing having an opening for said flexible tube, the bushing being bored to provide a space and annular shoulder, a split spring collar within said space and resting upon said annular shoulder, a locking nut threaded in said bushing, the locking nut having an opening for said flexible tube, and the locking nut having means for co-operating with said collar to cause same to grip said flexible tube for holding said nozzle in a locked position.

9. In a brush, the combination of a handle, the handle having a larger and a smaller longitudinal bore and an intermediate annular shoulder, a bushing fixed in one end of the handle, a plug threaded in the bushing, a sleeve, a circular wedge member, bristles arranged within said sleeve, the circular wedge member having a threaded portion for receiving said plug to cause said circular wedge member to hold said bristles within said sleeve to form a hollow brush, the circular wedge member having a central opening, a nozzle slidably mounted in the circular wedge member, the nozzle having a flange slidably mounted in said larger bore of the handle and adapted to engage said bushing and said annular shoulder for limiting the movement thereof, and means carried by said handle for locking the nozzle in an adjusted position.

10. In a brush, the combination of a handle, the handle having a larger and a smaller longitudinal bore and an intermediate annular shoulder, bristles fixed to one end of the handle, the bristles being arranged in a tubular form, a nozzle slidably mounted within the tubular form of the bristles, a flange at the inner end of the nozzle and slidable within said larger bore of the handle, a cylindrical wedge member fixed to the inner end of the nozzle, a flexible tube, a sleeve within said smaller bore of the handle, a nut threaded on the cylindrical wedge member for drawing the cylindrical wedge member within said sleeve to hold said flexible tube therebetween, and means carried by said handle for gripping said flexible tube to lock said nozzle in an adjusted position.

11. In a brush, the combination of a handle, the handle having a larger and a smaller longitudinal bore and an intermediate annular shoulder, bristles fixed to one end of the handle, the bristles being arranged in a tubular form, a nozzle slidably mounted within the tubular form of the bristles, a flange at the inner end of the nozzle and slidable within said larger bore of the handle, a flexible tube having one end within said smaller bore of the handle and its other end adapted to be connected to a source of liquid supply, means for fixing said flexible tube to said nozzle, a bushing fixed in the upper end of the handle, the bushing having an opening for said flexible tube, the bushing being bored to provide a space around said flexible tube, a split spring collar within said space and encircling said flexible tube, a locking nut threaded in the handle, and the locking nut having means adapted to co-operate with said collar for causing the collar to grip said flexible tube.

12. In a brush, the combination of a handle, bristles carried by the handle, the bristles being arranged in tubular form, a nozzle, the nozzle being arranged within the tubular bristles, and the nozzle being adjustable to a set position relative to the free ends of the bristles of the brush.

In testimony whereof I affix my signature.

EMANUEL RICKERSBERG.