May 17, 1955

H. W. GRIKSCHEIT

2,708,599

BRUSH

Filed March 6, 1950

2 Sheets-Sheet 1

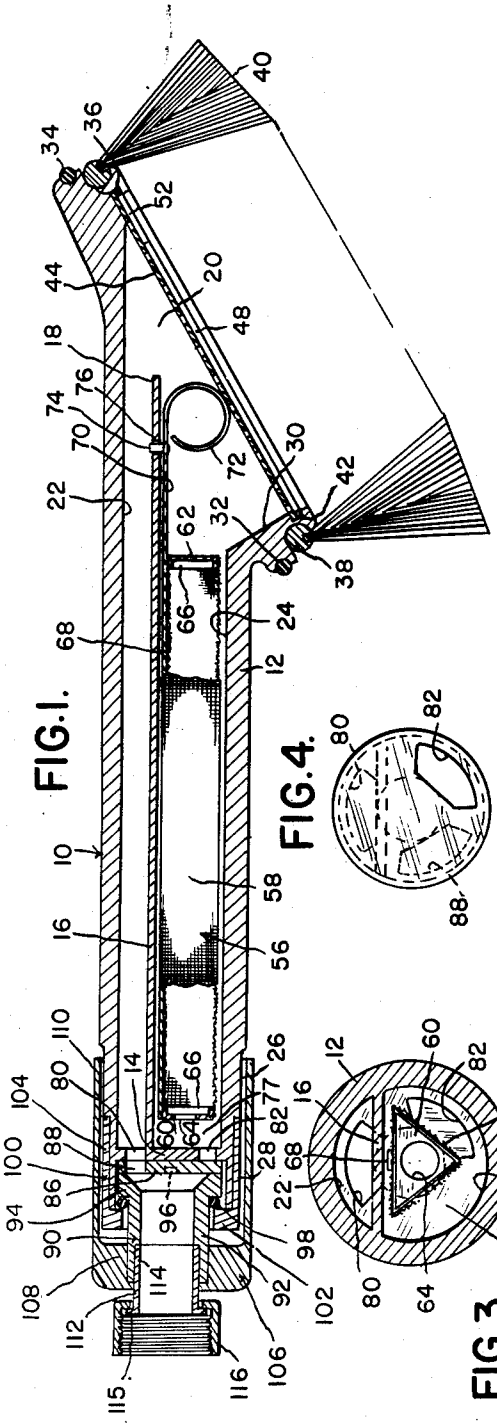


FIG. 1.

FIG. 4.

FIG. 3.

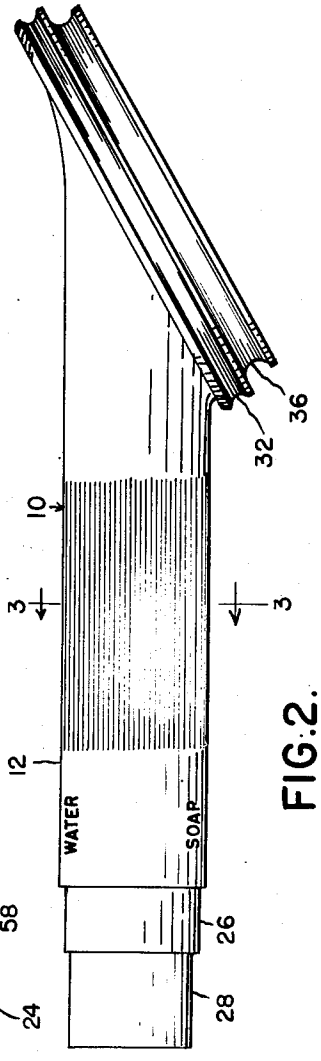


FIG. 2.

INVENTOR.
HENRY W. GRIKSCHEIT
BY Whittemore, Hulbert & Belknap
ATTORNEYS

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2 Sheets-Sheet 2

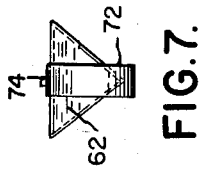


FIG.7.

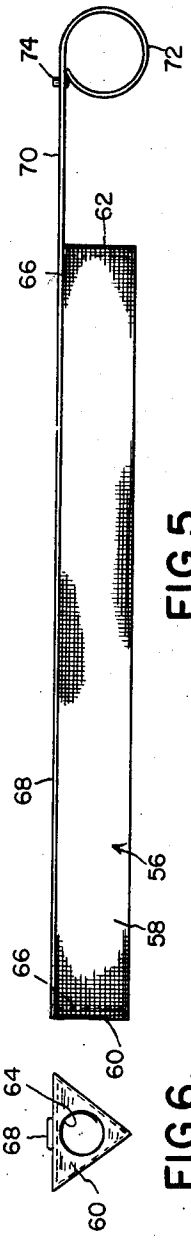


FIG.5.

FIG.6.

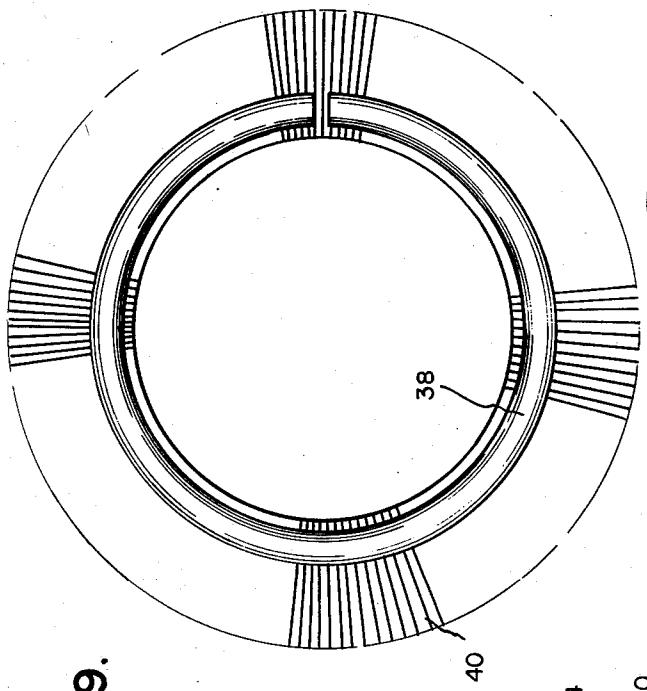


FIG.10.

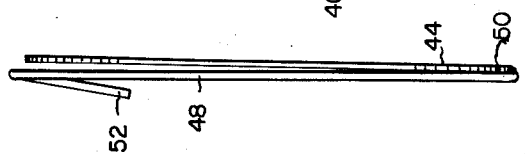


FIG.9.

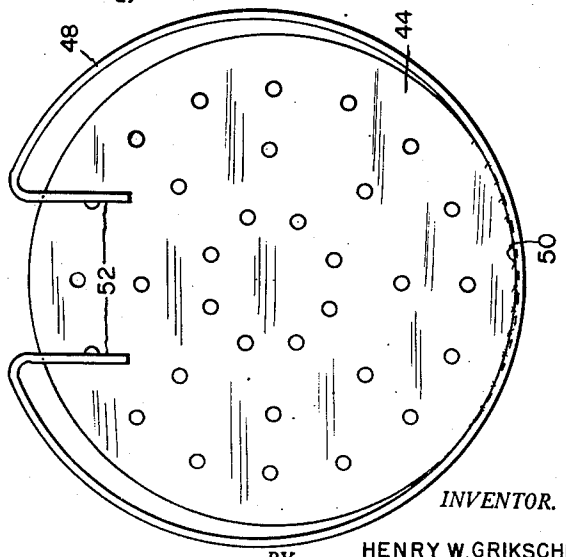


FIG.8.

INVENTOR.
HENRY W. GRIKSCHEIT

BY Whittemore, Hulbert & Belknap
ATTORNEYS

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2,708,599

BRUSH

Henry W. Grikscheit, Detroit, Mich.

Application March 6, 1950, Serial No. 147,809

4 Claims. (Cl. 299—84)

The present invention relates to a brush especially designed for use in washing cars. Briefly described, the brush comprises a handle portion adapted to be connected to a hose or other supply of water. Within the handle there is a longitudinally extending partition defining independent water passages at opposite sides thereof. Within one of these passages a removable and replaceable detergent container is provided. The brush includes three-position valve means effective to selectively cut off the flow of water through the brush, to permit water to flow through the detergent containing passage, or to permit water to flow through the other passage carrying out a rinsing operation.

With the foregoing general description in mind it is an object of the persent invention to provide a brush having a detergent contained therein and means for selectively controlling a contact between the water flowing through the brush and the detergent.

It is a further object of the present invention to provide a detergent containing brush provided with water passages therethrough in combination with a three-position valve effective selectively to cut off flow of water through the brush, to cause water to flow through the brush in contact with the detergent, or to flow through the brush out of contact with the detergent.

It is a further object of the present invention to provide a fountain type brush including a removable detergent container and a diffusing baffle, the latter being removable from the brush to afford access to the detergent container.

Other objects and features of the invention will become apparent as the description proceeds, especially when taken in conjunction with the accompanying drawings, wherein:

Figure 1 is a longitudinal section through the brush.

Figure 2 is a side elevation of the body of the brush.

Figure 3 is a section on the line 3—3, Figure 2.

Figure 4 is a porting diagram illustrating the operation of the valve means.

Figure 5 is a side elevation of the removable detergent container.

Figure 6 is an end elevation of the detergent container looking from the left in Figure 5.

Figure 7 is an end elevation of the detergent container looking from the right in Figure 5.

Figure 8 is a front elevational view of the removable diffuser plate.

Figure 9 is a side elevation of the plate shown in Figure 8.

Figure 10 is an end elevation of the brush attachment.

Referring now to the drawings, in Figure 1 there is illustrated a fountain type brush capable of many uses but particularly well adapted for washing automobiles. The brush comprises a body **10** which is preferably a die casting, and includes a cylindrical center portion **12**, a transverse ported partition **14** adjacent one end, and a longitudinally extending transverse partition **16** which at one end is connected to the transverse partition **14** and

which terminates at the other end short of the end of the body as indicated at **18** thereby providing a chamber **20**. It will be appreciated that independent passages for the flow of water through the brush are provided at opposite sides of the partition **16**. The first of these passages is indicated at **22** and the other at **24**. Both of these passages communicate freely with the chamber **20** at the end of the brush.

The body **10** is provided with a first reduced portion **26** adjacent one end, and a second reduced portion **28** therebeyond for a purpose which will subsequently be described. At the opposite end of the brush the body terminates in an angularly disposed opening **30** of substantially greater cross sectional area than the transverse cross sectional area of the intermediate portion of the body **10**.

Surrounding the opening **30** is a first annular groove or recess **32** adapted to receive a bumper ring **34** which may be formed of rubber or the like. Beyond the groove **32** is a second groove **36** in which is sealed a split annular brush supporting ring **38**. The ring **38** is provided with an annular array of bristles **40** as best seen in Figure 10, these bristles flaring outwardly from the ring **38** and defining a substantially continuous annular brush surrounding the exit opening **30**.

An internal annular recess **42** is provided adjacent the edge of the exit opening **30** and carries a diffuser plate **44**, the details of which are best illustrated in Figures 8 and 9. The diffuser plate **44** may be a thin disc of suitable material such for example as stainless steel, provided with a plurality of spaced openings therein to direct water outwardly in a spray. In order to retain the diffuser plate **44** in the internal annular recess **42**, there is provided a spring ring **48** which intermediate its ends is welded or otherwise secured to a peripheral portion of the plate **44** as illustrated at **50**. The two ends of the spring **48** are free and include inwardly directed fingers **52** which the operator may grasp to contract the ring in removing the diffuser plate from the brush.

A detergent container assembly indicated generally at **56** is located within the passage **24**, the details of the container being best illustrated in Figures 5, 6 and 7. Essentially, the detergent container assembly comprises a container portion **58** which may be formed of wire cloth or the like. In practice, a 40-mesh brass screen has proved to be very satisfactory. This screen is formed into a suitable contour such for example as triangular as illustrated in the figures, and is closed at its ends by metal plates **60** and **62**. The metal plate **60** is intended to be located adjacent the inlet end of the brush and is provided with an opening **64** to permit water to flow into the container **58**. The plate **62** is located at the outlet end of the container and is imperforate. The plates **60** and **62** include flange portions **66** to which the screen may be soldered. The container **58** is secured to an elongated resilient strip **68** which at the outlet end of the brush extends beyond the container **58** as indicated generally at **70**. The end of the strip **68** is formed into a loop **72** by means of which the operator may grasp the container assembly for removal. Adjacent the loop **72** is a latch pin **74** and the partition **16** is provided with a pin receiving opening **76** in which the pin **74** is engageable.

With the construction so far described, it will be apparent that the detergent container assembly is latched in place by engagement of the pin **74** in the recess **76**. When water is caused to flow through the passage **24** some of the water will enter the opening **64** at the inlet end of the container. It is important that this inlet end of the container be spaced from the partition **14** so as to provide a chamber **77** at this point. It is also important that the detergent container shall be of a cross section substantially smaller in area than the cross sectional area

of the passage 24. As a result of this there is a passage for the flow of water along the sides of the container. However, some of the water will flow through the opening 64 into contact with the detergent in the container and will form a solution of some of this detergent and then flow outwardly through the meshes of the container. In practice, it will be found that the detergent in the container is used up progressively from the left hand end of the container to the right hand end thereof, although of course, water flowing through the passage 24 may contact the detergent material throughout the length of the container.

As previously stated, the brush is intended to be coupled to a hose and the flow of water is to be selectively controlled by suitable valve means. For this purpose the partition 14 is ported as best seen in Figure 4. A first port 80 is provided above the partition 16 and a second port 82 is provided below the partition 16 and at one side thereof. To selectively control the flow of water through the brush a valve plate 86 is provided having a single port 88. The valve plate 86 is rotatable and may thus be brought into registry with either of the ports 80 or 82 or may be brought into a position in which it registers with neither of these ports. Referring now to Figure 4, which is a porting diagram of the valve structure, the valve port 88 is shown in dotted lines in its shut off position, that is, out of contact with the ports 80 and 82. The valve plate 86 is associated with a rotatable valve sleeve 90. The valve sleeve 90 has a reduced portion 92 and an annular outwardly extending flange 94. It is further provided at its inner end with a plurality of coupling pins 96 adapted to enter into correspondingly located recesses provided at the outer side of the valve plate 86. Therefore, rotation of the valve sleeve 90 results in corresponding rotation of the valve plate 86 and is used to effect the necessary rotation of the valve plate to selectively control flow of water through the brush.

The valve plate 86 and the flange 94 are adapted to enter into the open inlet end of the brush body and the valve plate 86 is in contact with the outer side of the partition 14. In order to provide an effective seal an annular packing 98 is provided at the end of the body 10 and the assembly is completed by a valve retainer 100 having an inwardly extending annular flange 102 adapted to overlie the end of the body 10, and a sleeve portion 104 adapted to be retained on the reduced portion 28. For this purpose the parts may be dimensioned to have a press fit or if preferred, may be otherwise connected together.

In order to actuate the valve a valve handle 106 is provided, this handle having an inwardly extending flange portion 108 at its outer end and a forwardly extending sleeve portion 110 which is adapted to overlie the valve retainer 100 and the reduced portion 26 of the body 10. The flange 108 is adapted to have a press fit with the outer portion of the valve sleeve 90 and to serve as the handle by means of which the valve plate 86 is moved.

Extending outwardly from the valve sleeve 90 is a coupling sleeve 112 which has a press fit within an annular recess 114 provided at the end of the valve sleeve 90. The handle 106 is apertured at its end to permit the coupling sleeve 112 to extend therethrough. The outer end of the coupling sleeve 112 has an outwardly extending flange 115 by means of which it is connected to a threaded coupling nut 116 for attachment to a hose in the usual way.

Preferably, the body 10 is provided adjacent the edge of the handle 106 with suitable indicia spaced thereabout indicating the position of the valve plate 86. Two of these indicia are visible in Figure 2 marked respectively, "water" and "soap," and a third indicia is provided which conveniently may be lettered "off." The valve handle 106 is provided with a spot, arrow or other mark adapted

to be moved into registry with the indicia on the body and thus to indicate the position of the valve.

In use the article is connected to a hose and the valve handle is turned to bring the valve port 88 therein out of registry with either the ports 80 or 82 provided in the partition 14. Thus when water is turned on to a hose the valve structure in the brush will prevent passage of water therethrough. If now, the handle is turned to bring the indicator thereon into registry with the indicia "soap" on the body, the valve port 88 is brought into registry with the valve port 82 in the partition thus introducing water into the longitudinally extending passage 24. This water may in part flow around the detergent container 58 but will in part enter into the container through the opening 64 and form a soapy solution. This soapy water will emerge into the chamber 20 at the brush end of the article and will emerge as a spray through the diffusing plate 44. At this time the user may apply the brush in the usual manner to remove dirt from the article being cleaned, the presence of the soapy water facilitating this operation. When it is desired to rinse the article so as to remove loosened dirt and soapy water therefrom the handle is rotated until the indicator thereon comes into registry with the indicia "water" on the body, at which time the port 88 is moved into registry with the port 80 in the partition 14. This has the effect of cutting off flow of water through the chamber 20 and directing water through the longitudinally extending passage 22. This water enters the chamber 20 and emerges through the diffusing plate 44 in a spray.

The soap or other detergent provided in the detergent container may be in the form of powder or it may be a more or less readily soluble cake. As previously stated, the detergent material tends to be used up from the left hand side of the container (as illustrated in Figure 1) and the result of this is that a substantially uniform soap solution may be obtained throughout the life of the detergent in the container. After the detergent has been fully expended the detergent container assembly is readily removed by first compressing the spring retainer ring 48 by pressing the fingers 52 toward each other, thus exposing the ring or loop 72. With a finger inserted through the loop 72 the pin 74 is moved outwardly out of the opening 76 and the entire detergent container assembly may be withdrawn and replaced with another.

The brush comprising the rings 38 and bristles 40 is also readily replaceable, the ring 38 being a split ring adapted to resiliently engage in the recess 32.

The drawings and the foregoing specification constitute a description of the improved brush in such full, clear, concise and exact terms as to enable any person skilled in the art to practice the invention, the scope of which is indicated by the appended claims.

What I claim as my invention is:

1. In a spray brush, a hollow open ended body, an enlarged head at its outlet end, a removable spray plate closing the outlet end of said body, a removable detergent container in said body, said container comprising a resilient extension, and releasable latch means carried partly on said extension and partly on said body, said latch means being concealed by said spray plate in use, and accessible upon removal of said spray plate.

2. A detergent container assembly for use in a device of the character described comprising an elongated body of substantially uniform cross-section from end to end, a side wall of said container being formed of a freely water pervious wire cloth, the ends of said container being provided with transversely extending plates, one of which has an opening therethrough and the other of which is imperforate, and an elongated supporting strip secured along one side of said container, a portion of said strip extending beyond the closed end thereof, and releasable latch means on said extending portion.

3. In a spray brush, a generally cylindrical body open at both inlet and outlet ends, a transverse partition adja-

cent the inlet end of said body, a longitudinal partition joining said transverse partition at one end and terminating at a point adjacent but spaced inwardly from the outlet opening at the other end and dividing the intermediate portion of said body into two separate laterally spaced passages, a separate port in said transverse partition communicating with each of said passages, said ports being spaced apart to provide an imperforate surface therebetween, a valve plate abutting the inlet side of said transverse partition and having a port therethrough adapted to register with either of said first ports or with the imperforate surface therebetween to prevent flow into either of said passages, a valve actuator comprising a tubular sleeve surrounding the rear end of said body, and means connecting said sleeve to said valve plate.

4. In a spray brush as defined in claim 3 in which the means connecting said sleeve to said valve plate comprises a plurality of coupling pins extending beyond the inner end of said sleeve, and said valve plate is provided with recesses into which said pins extend.

References Cited in the file of this patent

UNITED STATES PATENTS

1,449,198	Rutherford	Mar. 20, 1923
1,532,809	Girard	Apr. 7, 1925
1,676,857	Cheron	July 10, 1928
2,069,833	Horner	Feb. 9, 1937