

July 28, 1964

T. J. McMULLEN

3,142,084

SIGN WASHER

Filed Dec. 3, 1962

2 Sheets-Sheet 1

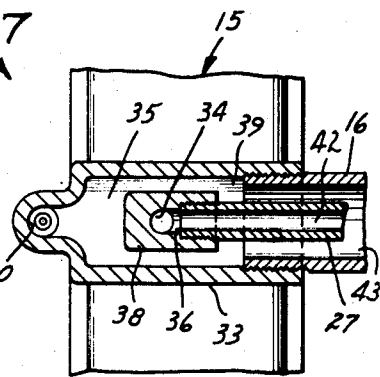
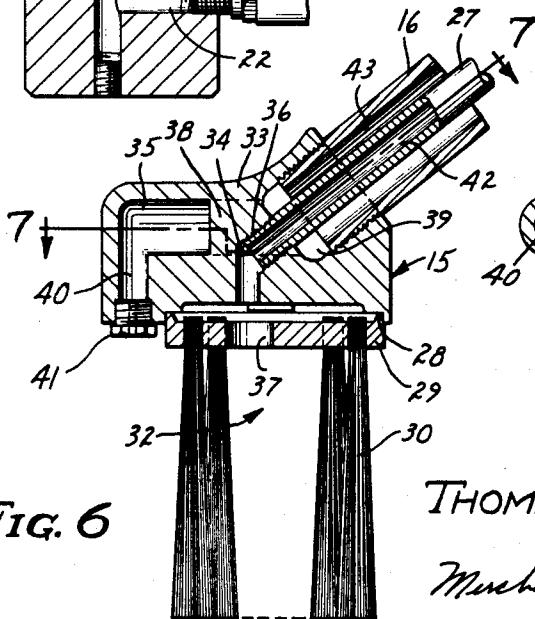
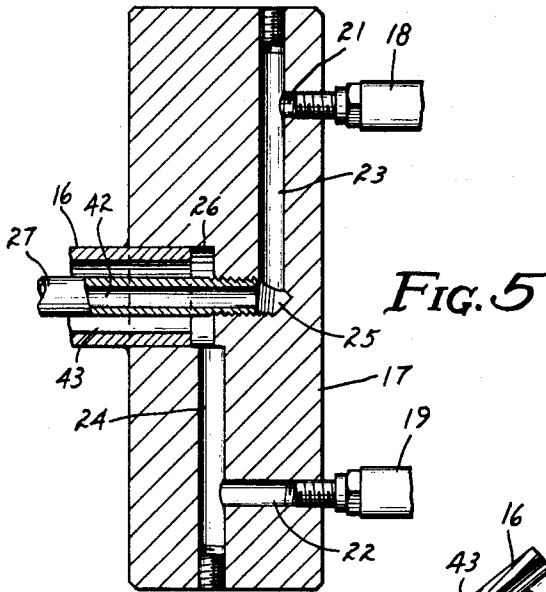
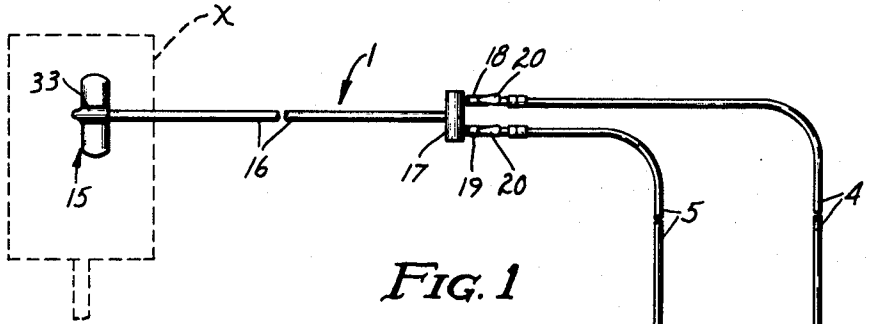


FIG. 6

FIG. 7

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2 Sheets-Sheet 2

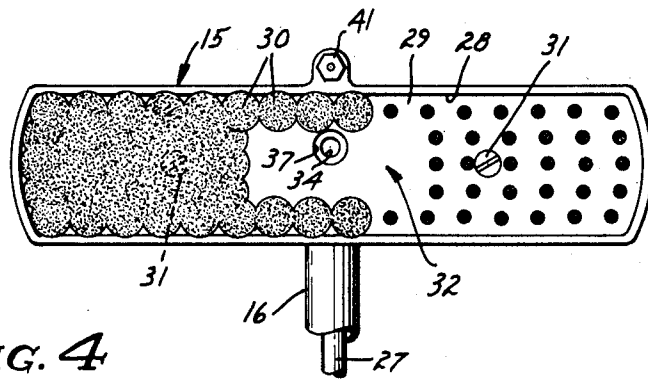
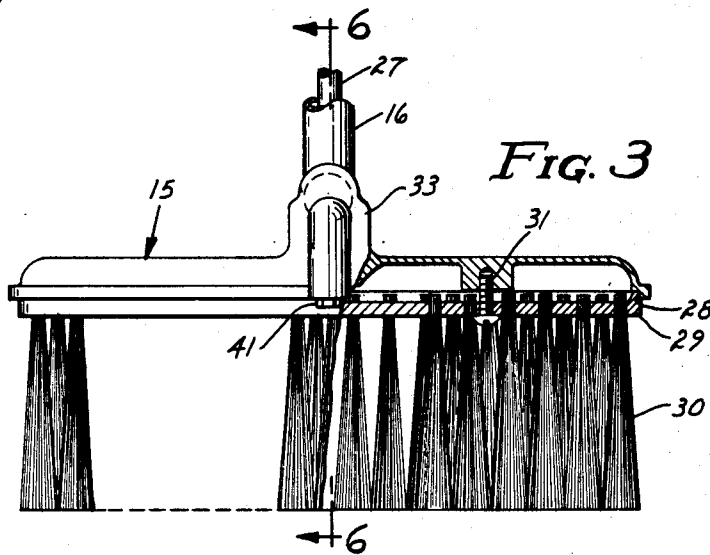
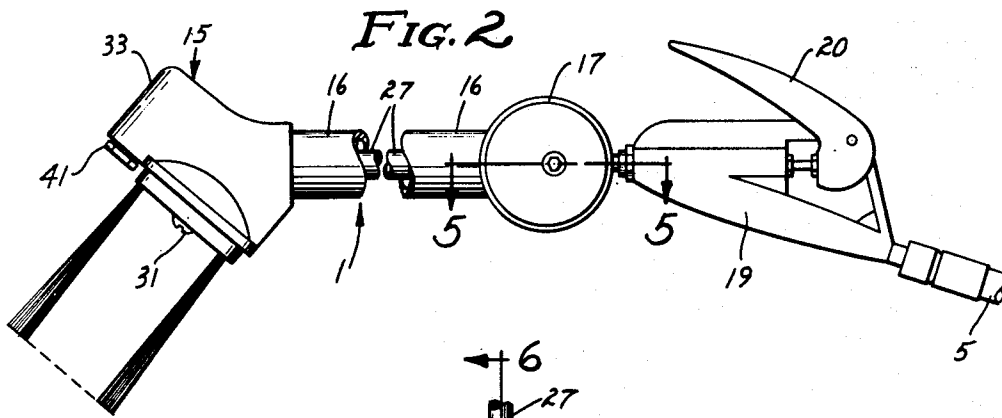


FIG. 4

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3,142,084

SIGN WASHER

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4 Claims. (Cl. 15-524)

My invention relates generally to cleaning devices of the fountain variety, and more particularly to devices for washing or scrubbing and rinsing various articles.

More specifically, my invention relates to improvements in devices of the above type primarily adapted for use in cleaning of highway or road signs, such as traffic warning and control signs, and the like.

It is well known that highway or road signs, being placed closely adjacent the shoulder of a road or highway, are subject to dust, rain and the like, and require washing at frequent intervals in order that they may be maintained in a clean condition, whereby to be clearly visible and easily read by an approaching driver from an appreciable distance. In view of the great numbers of such signs on most well traveled roads, periodic washing or otherwise cleaning of these signs is a time-consuming operation. Hence, an important object of my invention is the provision of a washing device by means of which a sign may be thoroughly scrubbed and cleaned in a minimum of time.

Another object of my invention is the provision of a washing device of the fountain type which uses a minimum of detergent liquid and rinsing liquid to achieve adequate cleaning results.

Another object of my invention is the provision of a sign cleaning device which is used to dispense both liquid detergent and rinsing liquid and which is comfortable to hold and easy to manipulate. To this end, I provide an elongated tubular handle which defines a passage for a liquid medium to a scrubbing head, and a conduit within the tubular handle which defines a passage for a different liquid to the scrubbing head.

Still another object of my invention is the provision of a cleaning device as set forth which is simple and inexpensive to produce, which is highly efficient in operation, and which is rugged in construction and durable in use.

The above, and still further highly important objects and advantages of my invention will become apparent from the following detailed specifications, appended claims and attached drawings.

Referring to the drawings, which illustrate the invention, and in which like reference characters indicate like parts throughout the several views:

FIG. 1 is a view in diagram of sign washing apparatus incorporating the washer of my invention;

FIG. 2 is an enlarged fragmentary view in side elevation of the sign washer of my invention, some parts being broken away and some parts being shown in section;

FIG. 3 is a view in elevation of the washing head portion of my sign washer, some parts being broken away and some parts being shown in section;

FIG. 4 is a fragmentary view in bottom plan of the washing head portion of the invention, some parts being removed;

FIG. 5 is an enlarged fragmentary section taken substantially on the line 5-5 of FIG. 2;

FIG. 6 is an enlarged fragmentary section taken substantially on the line 6-6 of FIG. 3; and

FIG. 7 is a fragmentary section taken substantially on the irregular line 7-7 of FIG. 6.

Referring with greater detail to the drawings, and more particularly to FIG. 1, my improved sign washer, indicated in its entirety by the reference numeral 1, is

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shown as being connected to a pair of fluid pumps 2 and 3 by means of tubes or conduits 4 and 5 respectively. The pumps 2 and 3 are driven from an engine 6 through suitable transmission mechanism not shown but contained within a housing 7, the mechanism being driven by the drive shaft 8 of the engine 6 and connected to the pumps 2 and 3 by drive shafts 9 and 10 respectively. The pumps 2 and 3 receive liquid from respective supply tanks 11 and 12 through conduit connections 13 and 14 respectively. The engine 6, transmission mechanism, pumps 2 and 3, and supply tanks 11 and 12 may be assumed to be carried by a truck or similar vehicle, not shown, so that the same may be easily transported from one place to another on the road or highway. A sign to be washed or cleaned is illustrated in FIG. 1 by dotted lines and indicated by the reference character X.

The washer 1 comprises a generally rectangular washer head 15, an elongated tubular handle 16 extending generally transversely from the intermediate portion of the head 15, a manifold 17 connected to the outer or free end of the handle 16, and a pair of valves 18 and 19 by means of which respective ones of the conduits 4 and 5 are connected to the manifold 17. The valves 18 and 19 are conventional in nature, and are normally closed, each thereof being provided with an operating handle or lever 20 by means of which said valves are selectively opened.

The valves 18 and 19 are screw threaded into threaded openings 21 and 22 respectively in the manifold 17, the openings 21 and 22 communicating with respective passages 23 and 24 that extend longitudinally of the manifold 17 and which terminate in axially aligned passage portions 25 and 26 respectively that extend in a direction transversely of the manifold 17. As shown in FIG. 5, the passage portion 25 opens into the passage portion 26, and is screw threaded to receive the threaded outer end of the tubular member 27. The outer or free end of the tubular handle 16 is received in the passage portion 26 and soldered or otherwise sealed therein, whereby to dispose the handle 16 and tubular member 27 in concentric relationship.

The washer head 15 defines a generally rectangular recess 28 in which is seated a mounting plate 29 that is provided with scrubbing media in the nature of groups of bristles or the like 30. The mounting plate is detachably locked in place by fastening means such as screws 31, the groups of bristles 30 covering most of the area defined by the mounting plate 29 except for a limited generally rectangular area 32 at the central portion of the mounting plate 29, see particularly FIG. 4. Opposite the mounting plate 29, the washer head 15 is formed to provide an outwardly projecting boss 33 which defines inner and outer passages 34 and 35 respectively. The inner passage is formed to provide an angularly disposed screw threaded passage portion 36 in which is screw threaded the adjacent inner end of the inner tubular member 27, see FIGS. 6 and 7. The opposite end of the inner passage 34 is substantially axially aligned with an opening 37 that extends through the mounting plate 29 within the open area 32 between the bristles 30. As shown in FIGS. 6 and 7, the outer passage 35 is bifurcated for a portion of its length about a central boss portion 38 through which the passage 34 extends, the outer passage 35 terminating at one end in an angularly displaced passage portion 39 in which is screw threadedly received the adjacent inner end of the tubular handle 16. The outer passage 35 terminates in an angularly displaced passage portion 40 that extends in a direction parallel to the inner passage 34, and is disposed laterally outwardly with respect to the mounting plate 29 and bristles 30 carried thereby. The extreme outer end of the passage 40 is defined by a conventional nozzle 41 that

is screw threaded into the boss portion 33 of the washer head 15, whereby to produce a relatively fine stream of fluid when the same is pumped therethrough. It will be noted that the passage portions 36 and 39 are axially aligned, so that the inner ends of the tubular handle 16 and inner tubular member 27 are concentric, the tubular member 27 defining a central passage 42 that establishes communication between the passage 23 in the manifold 17, the tubular member 27 and handle 16 cooperating to define an annular passage 43 that establishes communication between the passage 24 in the manifold 17 and the outer passage 35 in the washer head 15.

In use, and assuming that the tank 11 contains a supply of liquid detergent and the tank 12 a supply of other liquid, such as water, and with the engine 6 operating to drive the pumps 2 and 3, the operator momentarily opens the valve 18 to cause a liquid detergent to be delivered through the opening 37 in the bristle mounting plate 29, and rubs the bristles 30 over the sign X to scrub the same and loosen the dirt therefrom. Thereafter, the operator opens the valve 19 to cause rinsing water under pressure to be delivered through the nozzle 41, with the bristles 30 held away from the sign X to rinse the loosened dirt and detergent from the sign, leaving the same in a clean condition. Preferably, the tubular handle 16 and inner tubular member 27 contained therein are of such length that the operator can reach the sign X with the washer head 15 without dismounting from the truck or vehicle on which the apparatus is carried. By disposing the tubular member 27 within the tubular handle 16, the operator may easily hold the handle member 16 in one hand while manipulating the valves 18 and 19 with the other, whereby to substantially reduce the element of fatigue during a given working period. Further, by disposing the rinsing nozzle 41 in laterally spaced relation to the scrubbing bristles 30, rinsing water is supplied immediately to the article to be washed upon opening of the valve 19; and by using a nozzle 41 to deliver the rinsing water in a relatively fine stream at high pressure, the loosened dirt and detergent is effectively removed from the article, such as the sign X, with a minimum of rinsing water and in a minimum of time. By providing a clear area around the opening 37 in the mounting plate 29, detergent liquid is delivered directly to the article to be cleaned, the bristles 30 being used only to spread the detergent on the article after the same has been delivered to the article and to scrub the article.

My invention has been thoroughly tested and found to be completely satisfactory for the accomplishment of the objectives set forth; and while I have shown and described a commercial embodiment of my sign washer, it will be understood that the same is capable of modification without departure from the spirit and scope of the invention, as defined in the claims.

What is claimed is:

1. A sign washer comprising,
 - (a) a washer head and a scrubbing brush secured to said washer head, said brush comprising a mounting plate and a plurality of bristles extending outwardly therefrom,
 - (b) an elongated rigid tubular handle extending outwardly from said head,
 - (c) a conduit extending from said head within said rigid handle and substantially co-extensive in length with said handle,
 - (d) a manifold secured to the outer end of said handle

and connected to the adjacent end of said conduit, (e) a pair of valves associated with said manifold and operatively communicating with respective ones of said tubular handle and conduit,

(f) said valves adapted to be connected respectively to sources of liquid detergent and rinsing liquid under pressure,

(g) said head defining spaced independent passages communicating with respective ones of said tubular handle and said conduit,

(h) one of said passages opening through said head laterally outwardly of said brush,

(i) said mounting plate having a discharge opening therethrough between some of said bristles and communicating with the other of said passages.

2. A sign washer comprising,

(a) a washer head,

(b) a scrubbing device including mounting means secured to said head and scrubbing media on said mounting means,

(c) concentric inner and outer tubular members secured at their inner ends to said washer head, said outer member being rigid and providing a handle, said inner member defining a central passage and said inner and outer members cooperating to define an annular passage,

(d) a manifold secured to the outer ends of said tubular members,

(e) a pair of valves associated with said manifold and operatively communicating with respective ones of said central and annular passages,

(f) said valves being adapted to be connected respectively to sources of liquid detergent and rinsing liquid under pressure,

(g) said head defining independent inner and outer passages communicating respectively with said central and annular passages,

(h) said outer passage opening through said head laterally outwardly of said scrubbing media,

(i) said mounting means defining an opening establishing communication between said inner passage and said scrubbing media, the arrangement being such that liquid detergent is delivered to the scrubbing media through said inner passage and rinsing liquid delivered laterally outwardly of said scrubbing media through said annular passage, responsive to opening of their respective valves.

3. The structure defined in claim 2, in which said mounting means comprises a plate-like member, said scrubbing media comprising a plurality of bristles extending outwardly from said plate-like member.

4. The structure defined in claim 3 in further combination with a nozzle secured to said head and directing rinsing liquid from said outer passage in a direction generally parallel to said bristles.

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