

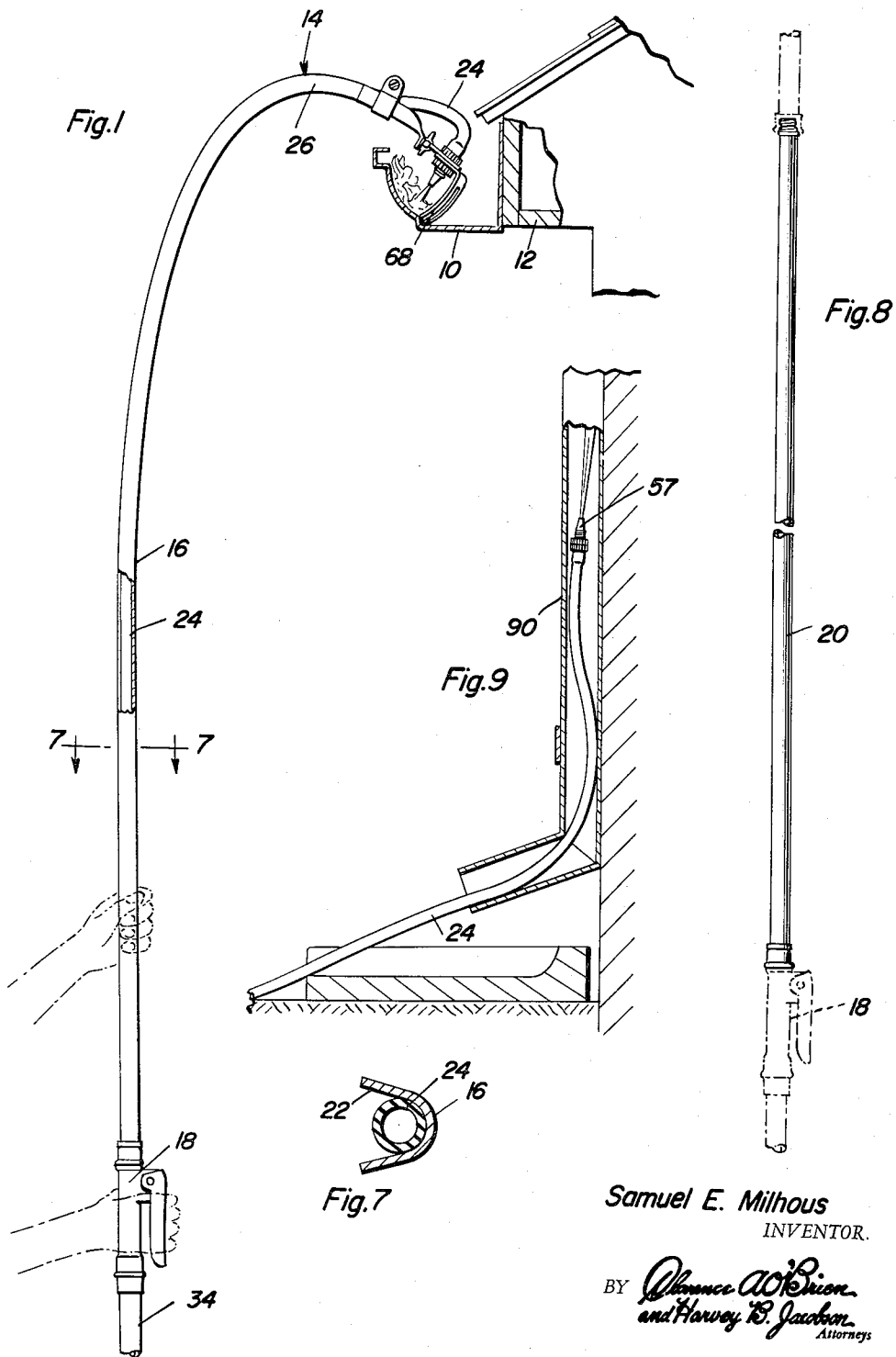
March 6, 1962

S. E. MILHOUS
CLEANING DEVICE

3,023,971

Filed Dec. 2, 1959

2 Sheets-Sheet 1



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2 Sheets-Sheet 2

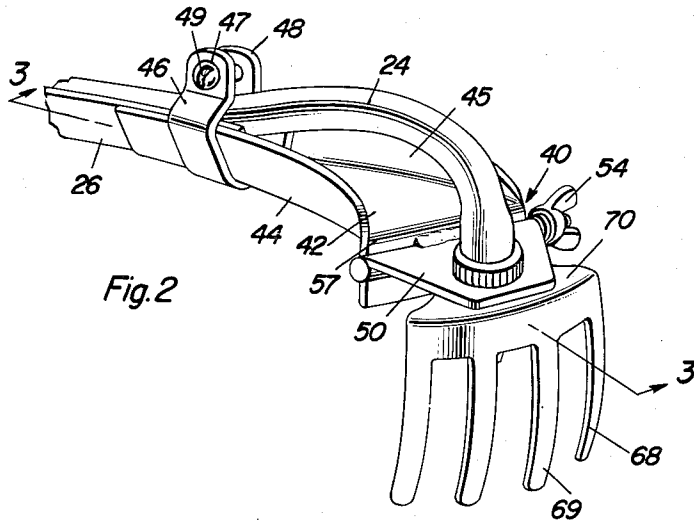


Fig. 2

Fig. 4

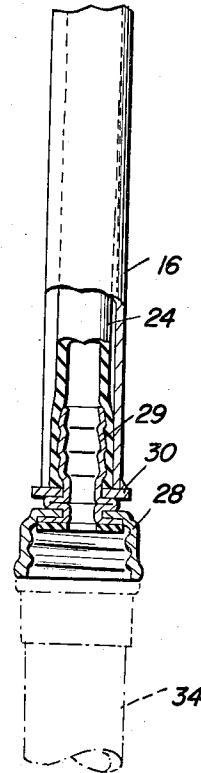
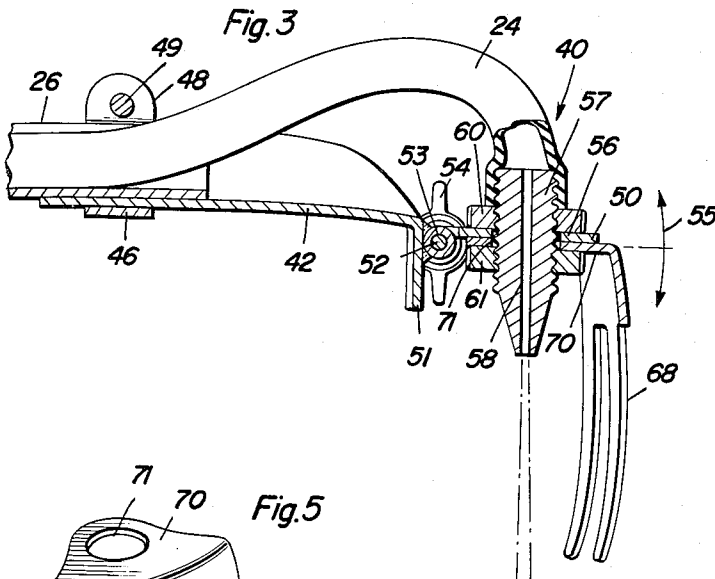


Fig. 3

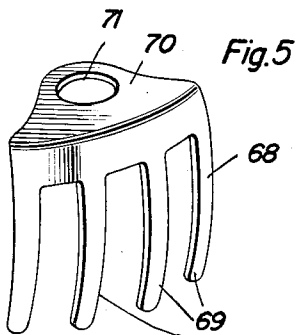
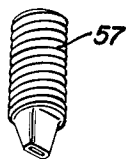


Fig. 5

Fig. 6



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CLEANING DEVICE

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This invention relates to cleaning devices and more particularly to a cleaning device especially designed for reaching inconveniently high places such as gutters, eaves troughs, and the general area on and around the roof of a house or other building.

An object of the invention is to provide a cleaning device which materially facilitates the task of cleaning eaves troughs; reaching high objects such as a newspaper, toy, etc. on the roof of a house or other building; and to perform various and sundry tasks with greater ease, as will become readily apparent to the average homeowner. The device may be used in its entirety or in part, such as for cleaning clogged downspouts.

Briefly, the invention is embodied in a handle specifically designed to support an ordinary length of hose or other water conductor. The handle construction is of importance due to its mechanical simplicity and low unit cost of production.

A valve is mechanically connected at one end of the handle and adapted to be coupled to the hose to control the flow of water therethrough. The opposite end of the handle has a unique fitting by which to support a number of tools, one of which is a rake. The coupling is adjustable so that the angularity of the rake and a water ejecting nozzle may be selected in accordance with the desires of the user.

A very important feature of the invention is the practicability of the device and the cleanliness of design. Mechanically, the device is reduced to a very simple construction but yet, it is capable of all the necessary or desirable adjustments, to cause the device to be very versatile.

These together with other objects and advantages which will become subsequently apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming a part hereof, wherein like numerals refer to like parts throughout, and in which:

FIGURE 1 is a side elevational view of the device showing it being used in a typical way that is, in cleaning a roof gutter, the roof gutter being shown in section.

FIGURE 2 is a perspective view of the head portion of the device.

FIGURE 3 is a sectional view taken on the line 3—3 of FIGURE 2.

FIGURE 4 is a fragmentary elevational view, parts being broken away in section and showing the coupling between the lower part of the handle and a conventional garden hose.

FIGURE 5 is a perspective view of one possible attachment to be used as a part of the head in FIGURE 2.

FIGURE 6 is a perspective view of a nozzle also constituting a part of the head of the device.

FIGURE 7 is a transverse sectional view taken on the line 7—7 of FIGURE 1 and on an enlarged scale.

FIGURE 8 is an elevational view showing that the handle may be used with a handle extension should this be desirable.

FIGURE 9 is a fragmentary sectional view showing a downspout being cleaned by a portion of the device shown in FIGURE 1.

In the accompanying drawings a conventional roof gutter 10 is shown attached to a part 12 of a building. It is to be clearly understood that this is merely one pos-

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sible method of using cleaning device 14 which exemplifies the principle of the invention, and numerous other methods of use and purposes will become readily apparent to those skilled in the art.

Cleaning device 14 is made of a handle 16 to which a conventional valve 18 is connected. Handle 16 may have an extension section 20 connected at the lower end thereof (FIGURE 8) in which case valve 18 shown in dotted lines in FIGURE 8, will be secured to the lower end of the section 20. The section 20 is preferably made rigid, for instance thin wall lightweight tubing to have the necessary rigidity. Extension 20 may be shaped in cross-sections similar to handle 16 (FIGURE 7) and used in conjunction with a length of garden hose as is handle 16 and as will appear subsequently. Alternatively, extension 20 may assume the configuration actually shown in FIGURE 8. Inasmuch as handle extensions are quite commonly used, no great detail is given in connection, it simply being understood that cleaning device 14 may be used with such an extension.

Handle 16 is approximately U-shaped in cross-section (FIGURE 7) to form trough 22 in which a length of garden hose 24 is disposed. The upper end of the handle 16 has a curved portion 26, and the lower end (FIGURE 4) has a common female hose connector 28 secured thereto. The connection may be made by having a wall 30 rigidly secured to the lower end of handle 16, to which the sleeve 29 of the conventional female connector is secured. Garden hose 34 may be attached directly to connector 28, but the preference is to have valve 18 attached to connector 28 as shown in FIGURE 1, and garden hose 24 attached to the valve 18. This places the flow of water through hose 24 under the control of the user.

The upper end of the handle 16 has a flared, generally trough-shaped bracket or head 40 connected to it. The head is made of plate 42 with short upstanding sides 44 and 45 at the edges. The inner end of the plate and its sides 44 and 45 are narrower than the outer end, and they fit flush against the outside surface of the curved part 26 of handle 16. Clamp 46, consisting of a metal strap with ears 47 and 48 at the ends thereof, almost completely encircle the curved part 26 of handle 16, a part of hose 24 and a portion of the two sides or side walls 44 and 45. A bolt 49 extending through holes in ears 47 and 48 is used to tighten the clamp and thereby detachably secure the plate 42 in place on the extremity of the curved part 26 of handle 16.

Adjustable plate 50 is connected to a depending part 51 of plate 42. Adjustable plate 50 is joined to part 51 by means of a hinge 52. The hinge pin 53 of the hinge is threaded, at least at one end, and there is a wing nut 54 on the threaded part thereof. This wing nut is used to tighten the hinge, by binding it, whereby the angularity of plate 51 with reference to plate 42 may be selected and held. One angular position is shown in FIGURES 1—3, and the arrow 55 designating adjusting movement of the head, shows the direction of adjustment which is possible due to the hinge connection of plate 50 with plate 42.

Plate 50 has an aperture 56 therein through which nozzle tip of the jet type 57 extends. The nozzle tip is in the form of a short sleeve having a water conducting passage 58 extending axially therethrough. The passage is preferably flat (FIGURE 6) to provide a comparatively broad flat jet stream. Two nuts 60 and 61 are threaded on the externally threaded tip 57 and they are located on opposite faces of plate 50 thereby coupling the tip to plate 50 whereby the tip is adjusted simultaneously with the adjustment of plate 50. The

forward end of hose 24 is threaded or otherwise coupled to the tip 57.

A number of different types of attachments may be used as a part of or with the head 40. A typical attachment is in the form of a rake 68 having a number of tines 69 and a rake body 70. The rake body has an aperture 71 therein. When coupling the rake attachment to the head, the rake body is sandwiched between plate 50 and one of the nuts, for example nut 61, and the elongate tip 57 extends through the aperture 71 in the rake body 70.

In use, the cleaning device is simply held in the hands as shown in FIGURE 1 to perform cleaning operations or any other operations at a high elevation thereby avoiding the necessity of a ladder. The head adjustment makes it possible to perform a much more effective cleaning operation, especially when angularity of the head is an important factor. The handle 16 i.e. the construction thereof, is important because thin wall aluminum stock or the like may be used and this is very cheap. Furthermore, it is very light and avoids the necessity of expensive couplings such as would be found in hollow handles which are of generally cylindrical formation.

FIGURE 9 shows a practical use of device 14. Hose 24 is removed from handle 16, and nozzle tip 57 is attached to one end of the hose or left attached thereto after removal from plate 50. Then the nozzle end of the hose may be pushed up (or down) the downspout 90 for flushing and unclogging the same.

The foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly all suitable modifications and equivalents may be resorted to, falling within the scope of the invention as claimed.

What is claimed as new is as follows:

1. A cleaning device of the character described comprising a handle including an elongated trough comprising a curved end portion, a hose mounted longitudinally in the trough and extending beyond said curved end portion thereof, a flared, generally trough-shaped bracket on said curved end portion of said trough communicating therewith and accommodating the extending end portion of the hose, a clamp securing the bracket on the trough and the hose in said trough, a jet nozzle removably mounted on the bracket and having the adjacent end of the hose connected thereto, and means for connecting the other end of the hose to a source of pressurized water.

2. A cleaning device of the character described com-

prising a handle including an elongated, longitudinally curved trough, a bracket on one end portion of the trough, a plate hingedly mounted for swinging adjustment on said bracket, said plate having an opening therein, a jet nozzle mounted on the plate in the opening, a water hose mounted in the trough and connected at one end to the nozzle, a rake mounted on the plate for dislodging matter to be washed away by water from the nozzle, and common means removably securing the nozzle and the rake on the plate.

3. A cleaning device in accordance with claim 2, wherein said means includes coacting nuts threaded on the nozzle on opposite sides of the plate and the rake.

4. An eaves trough cleaner comprising an elongated handle, a plate hingedly mounted for swinging adjustment on one end of said handle, a rake mounted on the plate, said plate and said rake having registering openings therein, a jet nozzle extending through the openings, coacting nuts threaded on the nozzle with the plate and the rake therebetween for removably securing said nozzle and said rake on said plate, and a hose having one end connected to the jet nozzle.

5. A cleaning device of the character described comprising a handle including an elongated trough comprising a curved end portion, a water hose mounted longitudinally in the trough, a nozzle on one end of the hose, and common means securing the other end of the hose to the corresponding end of the trough and for connecting said hose to a source of water supply.

6. An eaves trough cleaning device including a handle comprising an elongated longitudinally curved trough, a flared, generally trough-shaped bracket on one end portion of the trough projecting forwardly therefrom and communicating therewith, a rake on said bracket, a water hose mounted in the trough, a nozzle on the rake having one end of the hose connected thereto and cooperable with said rake for washing away matter dislodged thereby, and common means securing the bracket on the trough and the hose in said trough.

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