

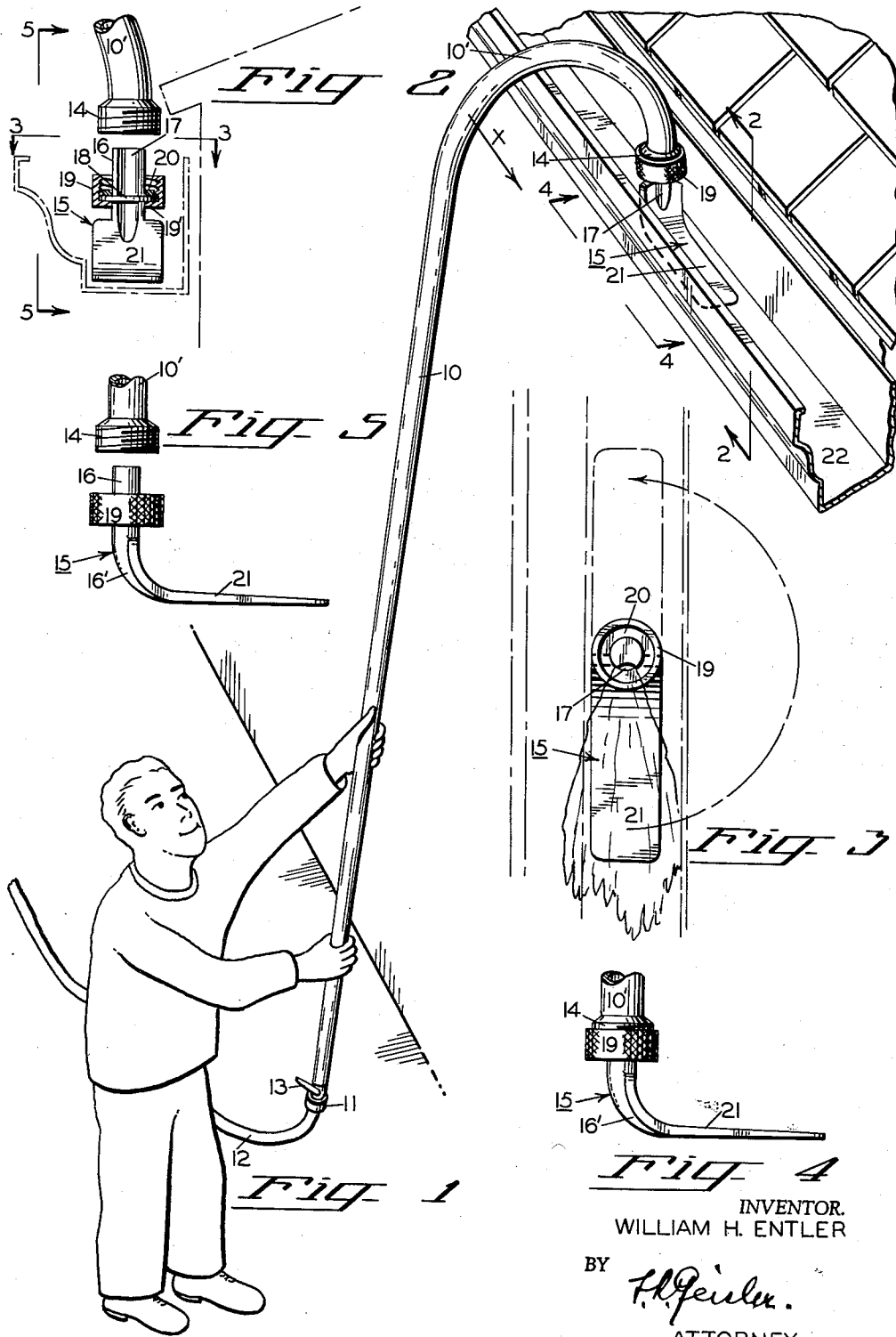
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W. H. ENTLER

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EAVES GUTTER CLEANING DEVICE

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INVENTOR.
WILLIAM H. ENTLER

BY *H. J. Entler.*
ATTORNEY

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EAVES GUTTER CLEANING DEVICE

William H. Entler, 518 NW. Hoyt St., Portland, Oreg.

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This invention relates to the removal of leaves, trash and sediment from eaves gutters. It relates particularly to means usable for performing the necessary periodic cleaning of such gutters on ordinary dwelling houses, especially houses having sloping roofs.

Heretofore in cleaning such eaves gutters it has generally been necessary for the person engaged in the work to mount a ladder leading from the ground to the eaves gutter. An object of the present invention is to provide a cleaning device which will enable such gutter cleaning to be done by someone standing on the ground and thus without the use of any ladder.

Another object of the invention is to provide an improved gutter cleaning device for gutters which will effectively dislodge any accumulation of heavy sediment or dirt from the bottom of the gutter, in addition to the usual flushing of loosened debris from the gutter.

A further object of the invention is to provide an efficient gutter cleaner which can be arranged for being manually moved along the gutter in either longitudinal direction by someone located on the ground.

An additional object is to provide a simple, practical and relatively inexpensive device which can be attached to an ordinary garden hose and which will enable the desired gutter cleaning operation to be performed quickly, easily and thoroughly.

The device by which these objects and other incidental advantages are obtained, its construction, and the manner in which it operates, will be easily understood from the following brief description with reference to the accompanying drawings.

In the drawings:

FIG. 1 is a perspective view illustrating the device in operation;

FIG. 2 is a sectional elevation through the eaves gutter of FIG. 1, taken on line 2-2 of FIG. 1, showing the front elevation of the scraper-nozzle of the device, the scraper-nozzle being shown detached from its mounting pipe for clarity;

FIG. 3 is a top plan view of the scraper-nozzle taken on the line 3-3 of FIG. 2;

FIG. 4 is a side elevation of the scraper-nozzle and thus a view of the scraper-nozzle taken on the line indicated at 4-4 in FIG. 1; and

FIG. 5 is a side elevation of the scraper-nozzle taken on line 5-5 of FIG. 2 and thus also showing the scraper-nozzle separated from the mounting pipe.

Referring first to FIG. 1, the device includes a pipe 10, preferably made of aluminum or other suitable light weight metal, having a reverse or U-shaped bend 10' at the top end. The pipe 10 is of sufficient length to reach the eaves from the ground, and preferably consists of a single length of pipe, as shown in FIG. 1, although it might also consist of two telescoping lengths of pipe should it be desired to have the pipe adjustable in length. The bottom of this pipe is provided with the usual coupling means, indicated at 11 in FIG. 1, for connecting such bottom end of the pipe to a garden hose 12. A simple shut-off valve 13 is also provided in the pipe near the bottom end for controlling the passage of water up through the pipe.

The curved upper end 10' of the pipe terminates in an externally threaded head 14 (see FIGS. 2 and 5) so arranged as to enable a special scraper-nozzle to be adjustably and removably attached to the pipe. This special scraper-nozzle is designated as a whole by the reference

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character 15 and constitutes the main feature of the device.

The scraper-nozzle 15 has a solid neck portion 16 which is cylindrical except for a water channel groove 17 on its leading side, the diameter of the neck portion being less than the internal diameter of the pipe 10 and its threaded head 14 so as to enable the upper end of the neck portion 16 to extend into the pipe when the scraper-nozzle is mounted on the pipe. A ring 18 is rigidly secured on the neck portion 16 in the relative position shown in FIG. 2. A clamping collar 19 is rotatably carried on the ring 18, the interior wall of this collar being threaded and being of proper diameter to enable the collar to engage the externally threaded head 14 of the pipe 10. The collar 19 has a bottom intumed flange 19' engaging the underside of the stationary ring 18. A washer 20 or other suitable material is placed on the ring 18 to form a tight connection with the head 14 of the pipe. Thus, when the scraper-nozzle 15 is attached to the head 14 of the pipe by the collar 19, the water from the pipe will be discharged forcibly in a form of a jet through the groove 17, passing under the washer 20, ring 18 and flange 19' of the collar.

An integral blade 21 leads from the neck portion 16 beginning a short distance below the stationary ring 18, as shown in FIG. 2. The groove 17 for the water jet gradually terminates on the leading face of the upper portion of this blade 21. The blade curves forwardly a short distance below the neck portion and the major portion of the blade extends forwardly substantially at a right angle with respect to the axis of the neck portion. The side edges of the blade 21 are substantially parallel throughout the extent of the blade and the blade is made sufficiently wide so that it will extend over the major portion of the bottom of a standard size eaves trough. A width of about one and one-quarter inches for the blade has been found to be very satisfactory for use in the various eaves troughs commonly installed on dwelling houses.

The thickness of the blade 21 decreases to some extent towards the front or leading edge of the blade, as shown in FIG. 4, and, since the front edge of the blade is straight and extends at right angles to the side edges, the front edge will be thrust between any accumulation of debris or dirt along the bottom wall of the gutter as the scraper-nozzle is moved along on the bottom of the gutter. The lower end of the neck portion acts as a reinforcement in back of the curved portion of the blade, as shown at 16' in FIG. 4. Consequently the blade and the entire scraper-nozzle will be strong enough and rigid enough to withstand hard usage without being made excessively heavy.

Due to the flat top surface of the blade 21 the water jet delivered through the groove 17 in the neck portion of the scraper-nozzle fans out over the blade as the groove 17 merges with the blade surface. This causes the water to spread over the blade as illustrated in FIG. 3, with the result that the water is impinged against both sides of the gutter adjacent the side edges of the blade in an oblique forward direction, as well as being impinged directly against any material ahead of the blade and encountered by the travel of the blade. In this way the combined action of the blade in scraping loose any material in its path in the bottom of the gutter, and the action of the fan-shape water jet washing loosened material along the gutter in the direction of movement of the scraper-nozzle, result in rapid and satisfactory clearing and cleaning of the gutter without any special effort on the part of the operator positioned on the ground, the operator merely being required to move along parallel with the gutter while holding the pipe 10 in position. Furthermore the operator will be positioned sufficiently out from be-

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neath the gutter to escape any water or dislodged material which may be discharged over the edge of the gutter.

In FIG. 1 the scraper-nozzle 15 is shown being moved along the bottom of the gutter 22 in the direction indicated by the arrow X, that is, towards the right as viewed from the operator. However, in some instances it may be better to operate the scraper-nozzle moving in the opposite direction. This may depend upon the location of the downspouts, or may be necessary due to transverse top bars or supporting straps which prevent continuous unobstructed travel of the cleaning device over the entire length of the gutter in one direction. In such cases the position of the scraper-nozzle with respect to its supporting pipe can easily be reversed by loosening the collar 19 sufficiently to enable the blade to be turned 180°, as indicated by the broken lines in FIG. 3, and then tightening the collar 19 again. This simple adjustment requires only a minimum of time and effort on the part of the operator.

Thus all that is necessary for the satisfactory employment of the device for cleaning an eaves gutter is to have the pipe 10 of sufficient convenient length corresponding to the height of the eaves gutter from the ground and to have a supply of water delivered through the pipe from the attached hose 12 sufficient to cause a suitable washing jet to be discharged over and from the scraper blade 21 as the operator moves the pipe and the mounted scraper-nozzle along the gutter.

I claim:

1. In an eaves gutter cleaning device of the character described including an elongated conduit pipe assembly with a substantially reverse bend portion at the top and controlled connected means at the bottom for delivering water under pressure into the conduit pipe assembly, a scraper-nozzle secured on the upper end of the conduit pipe assembly, said scraper-nozzle having a substantially cylindrical top portion, means for securing said top portion to said conduit pipe assembly, a bottom flat scraper blade portion on said scraper-nozzle extending substantially at right angles to the axis of said top portion of said scraper-nozzle and adapted to ride along on the bottom of the eaves gutter, a curved integral intermediate portion on said scraper-nozzle connecting said scraper blade portion and said top portion, and a water jet channel on said scraper-nozzle extending down from said top portion and having an outlet on said intermediate portion above the top face of said flat scraper blade portion so as to cause

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the water from said jet channel to spread over and be discharged from said top face of said scraper blade portion, whereby said device can be moved along an eaves gutter with said scraper blade portion riding on and scraping the bottom of the eaves gutter while the water discharged over the top of said blade portion will complete the cleaning of the eaves gutter.

2. In an eaves gutter cleaning device of the character described including an elongated conduit pipe assembly with a substantially reverse bend portion at the top and controlled connected means at the bottom for delivering water under pressure into the conduit pipe assembly, a scraper-nozzle removably and reversibly mounted on the upper end of the conduit pipe assembly, said scraper-nozzle having a top neck portion adapted to be inserted in said upper end of said conduit pipe assembly, said upper end of said conduit pipe assembly terminating in an enlarged head, a clamping collar on said neck portion of said scraper-nozzle extending over said enlarged head and having threaded engagement therewith, a bottom flat scraper blade portion on said scraper-nozzle extending substantially at right angles to the axis of said top neck portion of said scraper-nozzle and adapted to ride along on the bottom of the eaves gutter, a curved integral intermediate portion on said scraper-nozzle connecting said bottom scraper blade portion with said top neck portion, and an open water jet channel on said scraper-nozzle extending down from said top neck portion and terminating on said intermediate portion above the top face of said flat scraper-blade portion so as to cause the water from said jet channel to spread over and be discharged from said top face of said scraper blade portion, whereby said device can be moved along an eaves gutter with said scraper blade portion riding on and scraping the bottom of the eaves gutter while the water discharged over the top of said blade portion will complete the cleaning of the eaves gutter.

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