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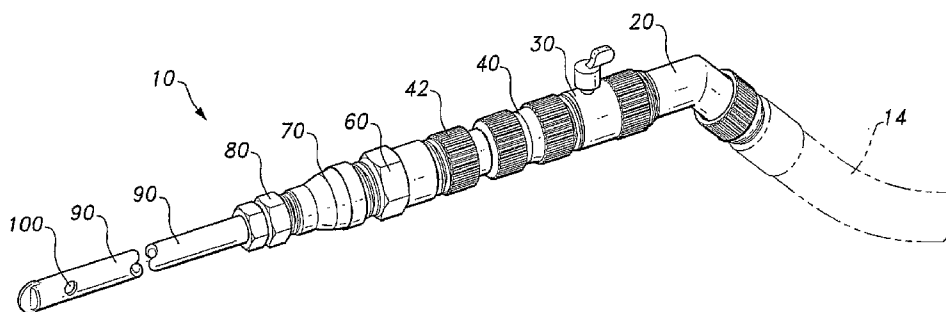
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(54) Title: CLEANING ATTACHMENT FOR WATER HOSE



(57) Abstract: The cleaning attachment (10) for use with a water hose (14) includes an angle adapter (20), a water control valve (30), a quick connect coupling (40, 42), a first thread adapter (60), a debris screen, a second thread adapter (70), a compression fitting adapter (80), and a hollow wand (90). The cleaning attachment (10) is designed to act as a nozzle for directing and dispensing water from a conventional water hose (14). Specifically, the cleaning attachment (10) is designed for effectively cleaning air conditioner coils, particularly condenser coils and evaporator coils. Cleaning attachment (10) allows a user to clean a coil with a flow of water through openings in the coil, eliminating the conventional need to disassemble the coil. The cleaning attachment (10) may also be used for a variety of other purposes for which a flow of pressurized water is needed.



WO 2007/120580 A2

CLEANING ATTACHMENT FOR WATER HOSE

TECHNICAL FIELD

The present invention relates to cleaning devices, and, more specifically, to a cleaning attachment for use with a water hose.

BACKGROUND ART

A variety of devices, including spray nozzles, have commonly been used for dispensing pressurized water from a flexible hose. Most of these spray nozzles are designed to assist the user in accomplishing everyday outdoor chores, such as watering flowers or plants, cleaning such surfaces as walls or driveways, or even cleaning such items as vehicles.

A need has long existed for a means for effectively cleaning air conditioner coils, especially condenser coils and evaporator coils. Due to the dimensions of these coils, cleaning them properly from the inside of the coils has always been a cumbersome task for air conditioning professionals and home owners wishing to properly maintain their air conditioning equipment. There is a need for a cleaning attachment for a water hose that will allow a user to clean a coil with a flow of water through openings in the coil, eliminating the need to disassemble the coil. Thus, a cleaning attachment for use with a water hose solving the aforementioned problems is desired.

DISCLOSURE OF INVENTION

The disclosure is directed to a cleaning attachment for use with a water hose. The attachment includes a water control valve with opposing female and male ends. The female end of the water control valve is adapted for releasable connection to a water hose, and the male end is attached to a first threaded adapter. The first threaded adapter has opposing female and a male ends. The female end of the first threaded adapter is attached to the water control valve, and the male end has external pipe threads and is designed to connect to a second threaded adapter. The second threaded adapter has two opposing female ends. The first female end is releasably attached to the male end of the first threaded adapter, and an opposing second female end has internal pipe threads and is designed to connect to a compression fitting. The compression fitting connects the second threaded adapter to a hollow wand with opposed first and second ends. The second end of the hollow wand is

closed, however the wand has an aperture formed adjacent to the closed second end so that the aperture forms a spray outlet.

The disclosure is also directed to a cleaning attachment that includes a mesh screen for filtering out particulate matter. The cleaning attachment has a water control valve that is releasably connected to a water hose. A hollow, elongated wand with a closed end is connected to the water control valve. A nozzle opening is formed adjacent to the closed end of the wand. A compression fitting is disposed between the wand and the water control valve. A mesh screen is disposed between the water control valve and the compression fitting. The water control valve, the compression fitting, and the wand form a water conduit for delivering water from the water hose to the nozzle opening so that the water sprays from the nozzle opening. The mesh screen filters out particulate matter from the water before the water is delivered to the wand.

BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 is an environmental, perspective view of a cleaning attachment for use with a water hose according to the present invention.

Fig. 2 is an exploded, side view of a cleaning attachment for use with a water hose according to the present invention.

Fig. 3 is an exploded, side view of an alternative embodiment of the cleaning attachment for use with a water hose according to the present invention.

Similar reference characters denote corresponding features consistently throughout the attached drawings.

BEST MODES FOR CARRYING OUT THE INVENTION

The cleaning attachment for use with a water hose includes an angle adapter, a water control valve, a quick connect coupling, a first thread adapter, a second thread adapter, a compression fitting adapter, and a hollow wand. The angle adapter has a female end for connecting to the water hose and a male end. The water control valve has a female end for receiving the male end of the angle adapter and a male end. The quick connect coupling has a female member and a male member. The female member has a first end for receiving the male end of the water control valve and a second end for receiving a male quick connect extension and the male member has a first end with a male quick connect extension for

engaging the second end of the female member and a second end having external hose threads.

The first thread adapter has a female end for receiving the second end of the male member of the quick connect coupling and a male end having external pipe threads. The second thread adapter has a first female end for receiving the male end of the first thread adapter and second female end having internal pipe threads. The compression fitting adapter has a male end for engaging the second female end of the second thread adapter and a female end for receiving a compression fitting. The hollow wand has a first end for engaging the female end of the compression fitting adapter and a second end, the second end of the hollow wand being crimped shut. An aperture is formed in the hollow wand at a point substantially near the second end of the hollow wand and is used for dispensing water through the cleaning attachment.

In an alternative embodiment, the cleaning attachment has a water control valve adapted for attaching directly to a garden hose, a mesh screen to filter particulate matter from the water stream, a compression fitting, and a hollow wand for emitting a spray of water. The water control valve is a swivel valve, permitting 360° axial rotation of the wand. The hollow wand is an elongated tube having a crimped end and an aperture through the tube sidewall defining a nozzle for spraying a jet of water from the wand. Adapters to adjust for thread type and size may be inserted between the components as needed through openings in the coil, eliminating the need to disassemble the coil.

The present invention is designated generally as **10** in the drawings. Referring to Figs. 1 and 2, cleaning attachment **10** is designed to act as a nozzle for directing and dispensing water from a conventional water hose **14**. Specifically, cleaning attachment **10** is designed for effectively cleaning air conditioner coils, especially condenser coils and evaporator coils. Cleaning attachment **10** allows a user to clean a coil with a flow of water through the openings in the coil, eliminating the need to disassemble the coil.

Cleaning attachment **10** includes an angle adapter **20**, a water control valve **30**, a quick connect coupling, a first thread adapter **60**, a second thread adapter **70**, a compression fitting adapter **80**, and a hollow wand **90**. Angle adapter **20** has a female end **20a** for attachment to a conventional water hose **14** and a male end **20b**. Angle adapter **20** is provided to ergonomically ease the handling of cleaning attachment **10** and, in the preferred embodiment, angle adapter **20** is a 45° angle adapter.

Water control valve **30** is connected to angle adapter **20** and has a female end **30a** for attachment to the male end **20b** of angle adapter **20** and a male end **30b**. Water control valve

30 is used to selectively control the flow of water through cleaning attachment **10** so that the pressure of water channeled to hollow wand **90** may be controlled by the user at a point adjacent attachment of the cleaning attachment **10** to the hose **14**.

The quick connect coupling includes a female member **40** and a male member **42**. Female member **40** has a first end **40a** attached to the male end **30b** of the water control valve **30** and a second female end **40b** for receiving a male quick connect coupler. Male member **42** has a first end **42a** with a male quick connect coupler for engaging the second end **40b** of female member **40** and a second end **42b** having external hose threads. Male member **42** and female member **40** are connectable so that, when connected, male member **42** is capable of rotating 360° with respect to female member **42**. This quick connect coupling allows cleaning attachment **10** to be manipulated so that it can be more effective when cleaning air conditioning coils, providing the user with selectively adjustable rotation of hollow wand **90**.

First thread adapter **60** is connected to male member **42** of the quick connect coupling and has a female end **60a** attachable to the second end **42b** of male member **42** of the quick connect coupling, and a male end **60b** having external hose threads. First thread adapter **60** is designed to convert the hose threads of second end **42b** into pipe threads that are present on male end **60b**. In a preferred embodiment, first thread adapter **60** converts three-quarter inch hose threads into three-quarter inch pipe threads.

Further, in the preferred embodiment, debris screen **50** (shown in Fig. 2) is disposed between first thread adapter **60** and male member **42** of the quick connect coupling. Debris screen **50** prevents debris or particulate matter introduced into the system from reaching hollow wand **90**. Second thread adapter **70** is connected to first thread adapter **60** and has a first female end **70a** for attachment to the male end **60b** of first thread adapter **60** and second female end **70b** having internal pipe threads. In the preferred embodiment, second thread adapter **70** converts three-quarter inch pipe threads to one-half inch pipe threads.

Compression fitting adapter **80** is connected to second thread adapter **70** and has a male end **80a** for engaging the second female end **70b** of second thread adapter **70** and a female end **80b** for receiving a compression fitting. Hollow wand **90** is connected to compression fitting adapter **80** and has a first end **90a** for engaging the female end **80b** of compression fitting adapter **80** and a second end **90b**. The second end **90b** of hollow wand **90** is crimped shut and hollow wand **90** is provided with an aperture **100** substantially near second end **90b**. Aperture **100** is provided for directing and releasing water to be dispersed by cleaning attachment **10**. In the preferred embodiment, hollow wand **90** is made from 3/8-inch outer-diameter stainless steel tubing and is two feet in length. It should be understood

that the particular size and dimensions of wand **90** are dependent upon the particular needs and desires of the user. For example, the hollow wand **90** may have a 3/8-inch outer-diameter tubing, as above in the preferred embodiment, but the wand **90** may be formed with a length of three feet, for example.

In the alternative embodiment of Fig. 3, cleaning attachment **200** is constructed substantially similar to attachment **10** of Figs. 1 and 2. However the quick connect adapter formed from male portion **42** and female portion **40** has been removed. In order to provide the user with selective rotation of the wand **90** with respect to hose **14**, water control valve **30** has been replaced with a swiveling water control valve **130** having a male threaded portion **130b** and a female threaded portion **130a**. Male portion **130b** may be rotated axially 360° with respect to female portion **130a** to direct the spray from the wand **90** in any desired direction.

In this embodiment, hose **14** is attached directly to female portion **130a**, with angular adjuster **20** of Figs. 1 and 2 being removed. Further, the first threaded adapter **60** and the second threaded adapter **70** have been replaced by a single threaded adapter **170** having first and second internally threaded female ends **170a**, **170b**. Preferably, the first end **170a** of single threaded adapter **170** is selectively rotatable with respect to the second end **170b**. The male portion **130b** of valve **130** is attached to the first female end **170a** of threaded adapter **170**, and the threaded male end **80a** of the compression fitting adapter **80** is attached to the second female end **170b**. It should be understood that further elements may be removed or replaced, dependent upon the particular needs and desires of the user.

It is to be understood that the present invention is not limited to the embodiments described above, but encompasses any and all embodiments within the scope of the following claims.

CLAIMS

1. A cleaning attachment for use with a water hose, comprising:
 - a water control valve having opposed female and male ends, the female end being adapted for releasable connection to the water hose;
 - a first threaded adapter having a female end for releasable connection to the male end of the water control valve, the first threaded adapter having an opposing male end, the male end having external pipe threads;
 - a second threaded adapter, the second threaded adapter having a first female end releasably attached to the male end of the first threaded adapter, and an opposing second female end having internal pipe threads;
 - a hollow wand having opposed first and second ends, the second end of the hollow wand being closed, the wand having an aperture formed therein adjacent the closed second end forming a spray outlet; and
 - a compression fitting attaching the wand to the second female end of the second threaded adapter.
2. The cleaning attachment as recited in claim 1, further comprising an angle adapter having a female connecting end and a male connecting end, the angle adapter being releasably connected between said water control valve and the water hose.
3. The cleaning attachment as recited in claim 2, wherein the male and female connecting ends of the angle adapter are each threaded.
4. The cleaning attachment as recited in claim 1, wherein the male end of the water control valve is selectively rotatable axially with respect to the female end thereof.
5. The cleaning attachment as recited in claim 1, further comprising a quick connect coupling disposed between the water control valve and the first threaded adapter.
6. The cleaning attachment as recited in claim 5, wherein the quick connect coupling includes a female member and a male member, the female member having a first end for receiving the male end of the water control valve and a second end for receiving a male quick connect extension of the male member, the male quick connect extension of the male member being formed at a first end thereof, the male member further a second end having external hose threads.

7. The cleaning attachment as recited in claim 6, further comprising a debris screen disposed between the first threaded adapter and the male member of the quick connect coupling.

8. The cleaning attachment for use with a water hose as recited in claim 1, further comprising a debris screen disposed between the first threaded adapter and the male end of the water control valve.

9. The cleaning attachment for use with a water hose as recited in claim 1, wherein said hollow wand is elongated and has a substantially linear contour.

10. A cleaning attachment for use with a water hose, comprising:
a water control valve adapted for releasable connection to the water hose;
a hollow, elongated wand having a closed end and a nozzle opening formed therein adjacent the closed end;

a compression fitting disposed between the wand and the water control valve; and
a mesh screen disposed between the water control valve and the compression fitting, the water control valve, the compression fitting, and the wand forming a water conduit for delivering water from the water hose in a spray from the nozzle opening, the mesh screen filtering particulate matter from the water before delivery to the wand.

11. The cleaning attachment according to claim 10, further comprising at least one threaded adapter disposed between said water valve and said compression fitting for adapting thread types and fitting sizes.

12. The cleaning attachment as recited in claim 10, further comprising an angle adapter disposed between said water control valve and the water hose.

13. The cleaning attachment as recited in claim 10, wherein said water control valve comprises a swivel valve rotatable axially by about 360°.

14. The cleaning attachment as recited in claim 10, further comprising a quick connect coupling disposed between said water control valve and said compression fitting, the quick connect coupling being axially rotatable by about 360°.

15. The cleaning attachment as recited in claim 14, wherein the quick connect coupling includes a female member and a male member, the female member having a first end for receiving the male end of the water control valve and a second end for receiving a male quick connect extension of the male member, the male quick connect extension of the male member being formed at a first end thereof, the male member further a second end having external hose threads.

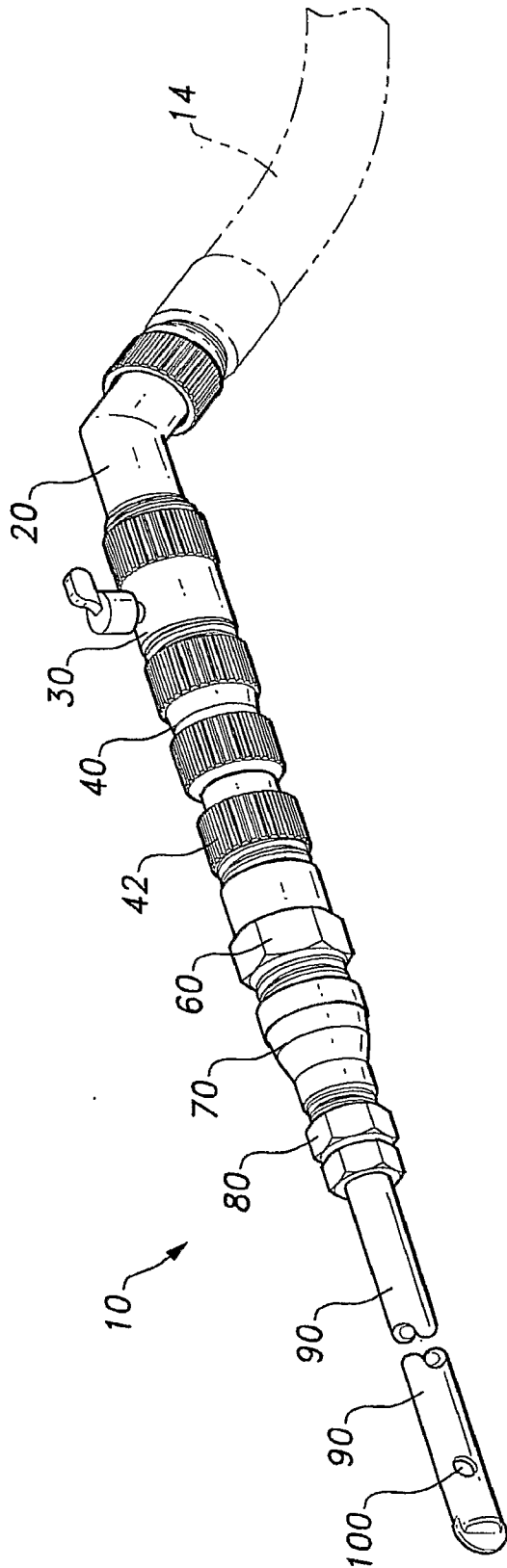


FIG. 1

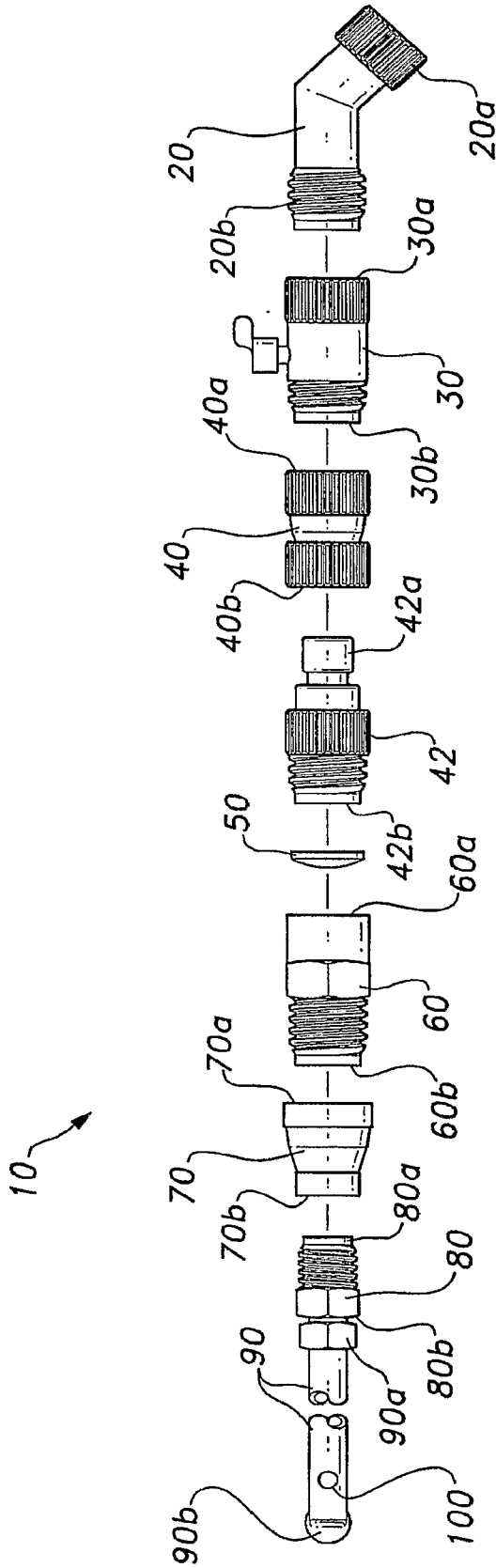


FIG. 2

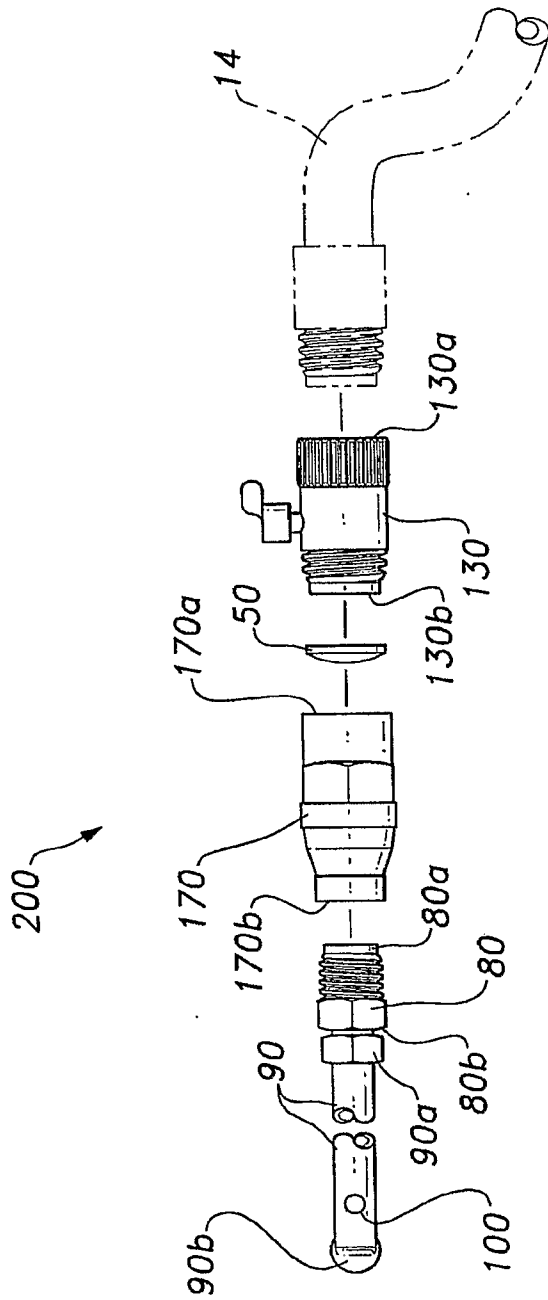


FIG. 3