be lubricated, and nothing herein is to be interpreted as limiting the present invention to use with a component of a particular shape or size.

With the cover plate **70** removed, a base **85** of the spray head **35** can be observed. A gasket **90** (such as the o-ring shown) may be used to provide a seal between a given cover plate and the base **85**. With a cover plate installed, a substantially enclosed cavity **95** is formed between the base **85** and the cover plate (see FIG. **4**). The cavity **95** is substantially closed to the environment so that sprayed lubricant cannot readily escape. However, as can be best observed in FIG. **4**, the cavity **95** of this embodiment is not completely sealed due to clearances built in to the component receiving holes in the spray head cover plates (as described in more detail below).

Referring again to FIG. **3**, the base **85** contains a number of apertures (in this case, three) **100** that exit into a lubricant groove **105**. A lubricant orifice **110** is provided in each aperture **100**. Each lubricant orifice **110** is associated with a lubricant supply line to supply lubricant to the lubricant groove **105**. An air nozzle **115** also exits into each of the apertures **100**, as can be better observed in FIG. **4**. The air nozzles **115** are in fluid communication with associated air supply lines coming from the pneumatic pump **20**, such that a burst of pressurized air supplied to the air nozzles will atomize and eject lubricant from the lubricant groove **105** onto a component located within the enclosed cavity **95**. A draining aperture **120** is in fluid communication with the drainage line **50**, which allows unused lubricant to return to the reservoir **25**.

FIG. **4** illustrates operation of the spray head **35** to lubricate an exemplary component **125** that has been inserted through a corresponding cover plate **130** of the spray head. In this particular embodiment, the component to be lubricated **125** is an o-ring, which is located on one end of a HVAC assembly part (tube) **135**. The gasket **90** can be seen to provide a seal between the cover plate **130** and the base **85** of the spray head **35**, thereby defining the cavity **95**.

As mentioned above, the cavity **95** is not completely sealed in this particular embodiment. Rather, a small gap **140** may exist between the cover plate **130** and the portion of the part **135** having the component to be lubricated **125** when the component to be lubricated is located to the spray head **35**. This gap **140** results from the clearance provided in the hole of the cover plate **130** to permit unhindered insertion of a component to be lubricated. Even with such a gap present, it has been found that overspray is nonetheless contained within the spray head because the cavity **95** is not highly pressurized during a lubricating operation.

While not shown herein, it is also possible to install an o-ring or other sealing element within a hole in a spray head cover plate to further seal the associated spray head cavity. Such a sealing element may have a variety of shapes and may be constructed from a number of appropriate materials as would be understood by one of skill in the art. An exposed surface of the sealing element would ideally contact a corresponding surface of a part protruding through the hole in an associated cover plate so as to provide a seal between the cover plate and the part.

With the component to be lubricated **125** properly inserted into the spray head **35**, an operator engages the actuator **30**, which causes the pump **20** to force a predetermined amount of lubricant from the reservoir **25**, through associated lubricant supply lines, to the lubricant orifices **110**. Preferably, the pump **20** is associated with a pulse generator **155** that limits lubricant pump **145** operation in some predetermined manner each time the actuator **30** is activated. For example, the pulse generator **155** may cause the lubricant pump **145** to dispense one metered drop of lubricant each time the actuator **30** is

activated and released. Alternatively, the pulse generator **155** may cause the lubricant pump **145** to dispense an amount of lubricant every five seconds if the actuator **30** is maintained in an activated position. Obviously, these are only examples, and other regulation of the lubricant pump **145** by the pulse generator **155** is possible.

Lubricant is caused to flow through the lubricant orifices **110** and out of the apertures **100** into the lubricant groove **105**. A backflow of lubricant from the lubricant groove **105** is prevented by a check valve or similar device in each of the lubricant supply lines. Thus, once lubricant is supplied to the lubricant groove **105**, the lubricant will remain therein until ejected as described below or until displaced by further operation of the pump **20**.

When the operator engages the actuator **30**, an operating sequence is initiated that first causes lubricant to be transferred to the lubricant groove **105** of the spray head **35**, as described above. Subsequent thereto, the air pump portion **150** of the pump **20** activates to transfer pressurized air to the air nozzles **115** via the air supply lines. This pressurized air is emitted from the air nozzles **115** as a brief burst that atomizes and ejects lubricant from the lubricant groove **105** and onto the component to be lubricated.

As shown in FIG. **4**, this particular embodiment of the present invention includes air nozzles **115** that are oriented at an angle to better direct lubricant from the lubricant groove **105** onto the component to be lubricated **125**. Other embodiments may employ different air nozzle orientations and/or a lesser or greater number of air nozzles. Additionally, the air nozzles employed in a given embodiment may provide different spray patterns to best lubricate the particular component to be lubricated.

Excess lubricant sprayed into the cavity **90** is collected at the draining aperture **120** and is returned to the reservoir **25** via the drain line **50** for subsequent re-use. Thus, it can be understood that a system and method of the present invention essentially provides a closed-loop system where overspray and excess lubricant can be readily captured and re-used. In addition to providing a cost savings associated with reduced lubricant waste, a system and method of the present invention also prevents the transfer of lubricant to the surrounding environment, including to other workspaces and/or personnel. As such, the area surrounding the location of such a system remains free of lubricant, thereby ensuring a clean and safe working area.

While certain exemplary embodiments of the present invention are described in detail above, the scope of the invention is not to be considered limited by such disclosure, and modifications are possible without departing from the spirit of the invention as evidenced by the following claims:

What is claimed is:

1. A spray head for lubricating components, comprising:

a base;

a cover plate attached to the base and having an opening adapted to receive therethrough a component to be lubricated, an area between the base and cover plate defining a substantially enclosed cavity;

a groove in the base for receiving a lubricant;

an aperture in fluid communication with the groove and a source of lubricant to fill at least a portion of the groove with the lubricant;

a nozzle in fluid communication with the groove;

a pressurized air source in fluid communication with the nozzle and selectively operable to supply a burst of pressurized air to the groove to atomize and project lubricant from the groove and onto a component to be lubricated; and