F. FILCZER.

DEVICE FOR REGULATING FLOW OF A FLUID.

APPLICATION FILED MAY 13, 1914.

1,132,175. Patented Mar. 16, 1915.

Fig. 1.

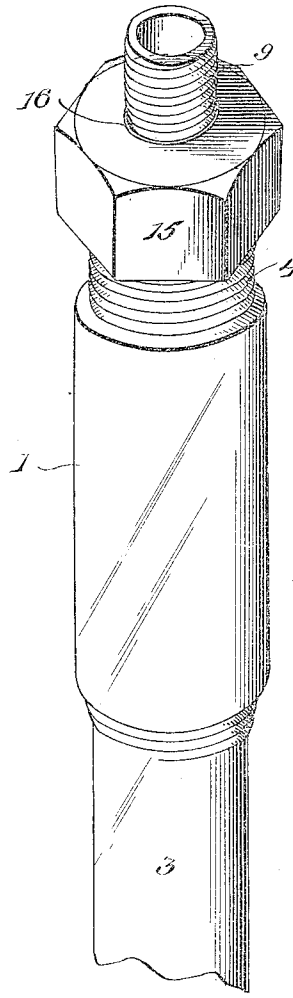


Fig. 2.

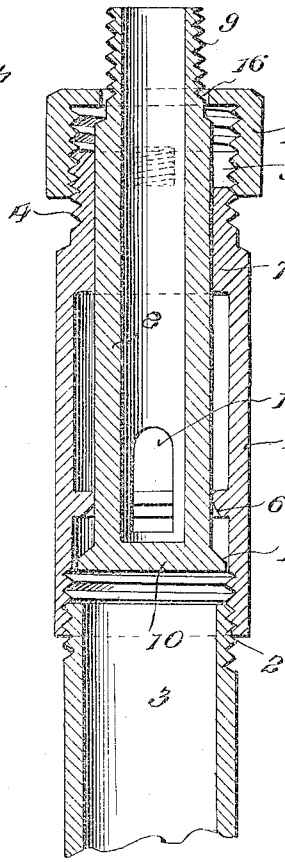
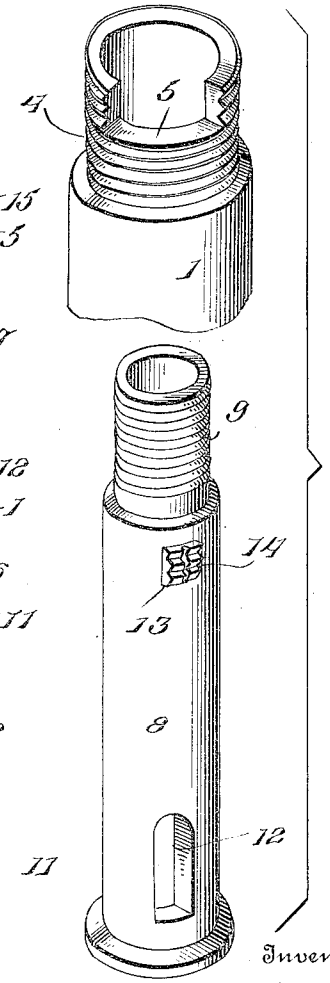


Fig. 3.



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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

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DEVICE FOR REGULATING FLOW OF A FLUID.

1,132,175. Specification of Letters Patent. Patented Mar. 16, 1915.

Application filed May 13, 1914. Serial No. 838,345.

To all whom it may concern:

Be it known that I, FRANK FILCZER, citizen of the United States, residing at Lorain, in the county of Lorain and State of Ohio, have invented certain new and useful Improvements in Devices for Regulating Flow of a Fluid, of which the following is a specification.

This invention relates to an improved device for regulating the flow of a fluid to the point of use and is intended more particularly for use in tools which are operated by compressed air, the object of the invention being to provide a simple and efficient device whereby the desired quantity of the motive fluid may be permitted to flow to the tool or other point of use or the flow may be entirely cut off when desired.

This stated object and such other incidental objects as will appear from the following description are attained in such a device as is illustrated in the accompanying drawings and the invention consists in certain novel features which will be particularly pointed out in the claims following the description.

In the drawings:—Figure 1 is a perspective view of my improved device. Fig. 2 is a longitudinal sectional view of the same, and Fig. 3 is a perspective view showing the inner tube separated from the outer tube and showing the front end of the outer tube.

In carrying out my invention, I employ an outer sleeve or tubular body 1 which is internally threaded at one end, as shown at 2, to receive the end of a supply pipe 3 which may lead from any convenient source of supply, such as an air pump or compressor, or a steam boiler, or a gas tank, as will be readily understood. The other or front end of this outer sleeve or tubular body 1 is provided with a reduced externally threaded extension 4 and in the said extension is formed a notch 5, the purpose of which will presently appear. The outer sleeve or tubular body 1 is further provided near its rear end with an internal annular beveled shoulder 6, and the bore of the said sleeve or body at its front extremity 7 is of less diameter than the rear end of its bore as clearly shown. The inner tube 8 is adapted to fit closely within the front portion of the bore of the outer tube or sleeve and the front extremity of the inner tube is reduced and threaded, as shown at 9, whereby to provide an extension adapted to connect the sleeve with a line or pipe to convey the fluid to the tool or other point of use. The rear end of the inner tube is closed, as shown at 10, and at its rear extremity the said tube is provided with an externally beveled annular flange 11, the inclination or angle of the beveled flange being the same as the inclination or angle of the beveled surface of the annular shoulder 6 so that when the flange 11 is drawn into close engagement with said annular shoulder, the flow of fluid through the pipes will be cut off. The external diameter of the flange 11 is somewhat less than the internal diameter of the bore of the outer sleeve so that a slight space will be left through which the air or other fluid may flow around the said flange, and adjacent the rear closed end of the inner tube I provide a longitudinal slot 12 which establishes communication between the bore of the inner tube and the space between the inner and outer tubes.

It will be readily understood that the annular shoulder 6 fits closely against the external surface of the inner tube and when the tubes are in the relative positions shown in Fig. 2 of the drawings, the air below the shoulder 6 and between the inner and outer tubes may flow through the slot 12 into the inner tube. It will, therefore, be obvious that the quantity of fluid permitted to pass to the tool or other point of use will be determined by the proportion or extent of the slot which is in rear of the shoulder 6 and when the slot is entirely in front of the said shoulder no air can pass into the inner tube.

In the body of the inner tube just in rear of the reduced extension 9 of the same, I provide a set screw 13 having a spirally grooved or threaded head, shown at 14, which may be engaged by the locking nut or cap 15 which is threaded on to the front end of the outer tube and around the front end of the inner tube, as clearly shown in Figs. 1 and 2. This cap or nut has an opening 16 of a diameter sufficient to permit the cap or nut to move over the line extension or pipe which is fitted upon the extremity of the inner tube, as will be readily understood.

It will be readily understood that the threads or grooves 14 in the head of the stop or set screw 13 are engaged by the internal threads of the cap or nut 15 so that if the

inner tube or sleeve be adjusted within the outer tube to the proper position and the cap then turned home, it will maintain the two sleeves in the relative positions to which they have been adjusted, inasmuch as it will ride upon the threaded extension of the outer tube or sleeve and upon the threaded head of the set screw 13 without causing movement of either sleeve or tube. When the nut or cap has been turned home, the sleeves will be locked in the relative positions in which they may be set. If the cap or nut be loosened and the inner sleeve then moved to such a position that the set screw 13 will fit between the end walls of the recess or notch 5, the inner tube will be held against rotation by one of said end walls and the line pipe or extension may then be readily fitted to the end of the inner tube.

My improved device is exceedingly simple in the construction and the arrangement of its parts and may very easily be adjusted so as to permit the flow of the desired quantity of motive fluid.

Having thus described my invention what I claim and desire to secure by Letters Patent is:—

1. The combination of inner and outer tubes constructed to permit flow through the tubes or cut off the same, a grooved projection on the inner tube, and a nut threaded upon the end of the outer tube and said projection on the inner tube to secure the tubes in set relative position.

2. A device for the purpose set forth comprising inner and outer tubes constructed to permit or cut off flow through the tubes, the outer tube being provided with a recess in its front extremity, a projection on the inner tube adapted to engage said recess, and a nut threaded on the outer tube and said projections for locking the tubes in their relative axial positions.

In testimony whereof I affix my signature in presence of two witnesses.

FRANK FILCZER. [L. S.]

Witnesses:
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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."