This invention relates to a clamp and closure for use in connection with a resilient end portion of a fluid conduit, to make a fluid-tight connection of the conduit with suitable means, and to close or seal said end portion to exclude air and also prevent leakage.

The clamp and closure of the present invention may be combined advantageously with a fountain pen filling device disclosed in my copending application, Serial No. 531,733, filed April 19, 1944 now Patent #2,424,896, July 29, 1947.

The principal object of the invention is the provision of a device of the indicated character which enables the connection or coupling of elements in a fluid-tight manner so that fluid or liquid may be delivered from one element to another without waste resulting from leakage, and to close or seal the flow passage after delivery of the fluid to prevent loss from evaporation or deterioration.

With the foregoing, other objects of the invention will appear from the embodiments thereof described hereinafter, and illustrated, by way of example, in the accompanying drawings, in which—

Fig. 1 is a side elevational view of a fountain pen filling device selected to show the clamp and closure in use, the filling device being shown partly in section, and the closure member or stopper in the closed position.

Fig. 2 is a fragmentary side elevational view of parts shown in Fig. 1, looking at the same from another angle.

Fig. 3 is a view similar to Fig. 1 showing the relation of parts for carrying out a filling operation.

Fig. 4 is a top plan view.

Fig. 5 is a sectional view taken on the line 5—5 of Fig. 1.

As shown in Figs. 1 to 5 inclusive, the clamp and closure is combined with a fountain pen filling device 10 applied to a bottle 11 containing ink for filling fountain pens with ink by manipulating the device to produce a pumping action causing charges of ink to be delivered into the ink sack of a pen. This requires a fluid-tight connection of the outlet end of the filling device with the end section of the pen. After the filling operation the outlet end should be closed or sealed to prevent loss by evaporation and deterioration. The clamp and closure of the present invention serves adequately for this purpose in an effectual manner.

The clamp and closure includes a tubular body 12 having a transverse cut 13 part way through to provide an attaching section 14 and a clamping collar section 15. The section 15 is divided longitudinally to enable said section to be expanded and contracted. It is to be understood the body 12 is made of metal or other suitable material inherently resilient or having springiness. The section 15 at the division therein has apertured lugs 16 projecting laterally in spaced relation to each other. Nuts 17 cooperate with the lugs 16, respectively, one of said nuts having a left thread and the other having a right thread. The nuts 17 receive a screw 18 having left and right threads 19 and 20, respectively, adapted for threaded engagement with the threads of the nuts 17. By turning the screw 18 clockwise, as viewed in Figs. 1 and 3, the section 15 will be caused to exert a clamping action and vice versa.

A U-shape handle 21 has its apertured terminals secured to the opposite ends, respectively, of the screw 18 by suitable fastening elements 22. When the handle 21 is in the down position shown in Fig. 1, the collar section 15 is released and in the up position shown in Fig. 3, the section 15 exerts the clamping action due to the fact that the screw 18 acting on the nuts 17 presses the lugs 16 toward each other which is just the reverse of the operation when the handle 21 is moved into the down position.

A suitable closure member or stopper 23 is pivotally connected with the lugs 16, as at 24, so that the stopper may be swung between a closed and open position with respect to the outlet of the device 10.

In use, the tubular body 12 is placed around the outlet portion 25 of the filling device 10, which portion 25 is made wholly of resilient material such as rubber. Pins or screws 26 extend through the attaching section 14 into the portion 25 to secure the clamp with its closure in functioning position.

With the parts as shown in Fig. 1, the filling device is sealed or closed by the stopper 23, and the clamp is open. To fill a fountain pen, the stopper 23 may be moved to the open position, after which the writing end of the pen is inserted into the discharge end portion 25. The handle 21 is then moved to the up position as shown in Fig. 3, which will contract the section 15 about the portion 25, thereby making a fluid-tight connection of the filling operation. After the pen is filled, the handle is moved to the down position, allowing the section 15 to expand, to release the
3 pen. The stopper 23 is then swung to the closed position to seal the outlet passage of the filling device for the purposes stated.

I claim:

1. A device of the character described comprising a tubular part adapted to surround a conduit made of resilient material, said tubular part having a transverse slit providing an attaching section and a clamping section, said attaching section serving for attaching the device to said conduit, said clamping section being split longitudinally and inherently resilient so as to be expansible and contractible, and actuating means to contract the clamping section for the purpose of compressing said conduit into a fluid-tight connection with an article to be filled with fluid, and to allow the clamping section to expand to decompress the conduit for the purpose of releasing said article, said actuating means consisting of lugs on said clamping section, a screw extending loosely through said lugs, nuts on said lugs respectively, and a handle connected with said screw to rotate it causing the nuts to bear on the lugs to contract the clamping section and to withdraw the nuts to allow the clamping section to expand, for the purposes stated.

2. A device as set forth in claim 1, wherein said screw has left and right threads.

3. A device as set forth in claim 1, and a closure member connected with said tubular part for movement between a closed position closing said conduit and an open position with respect thereto.

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