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CLOSURE FOR PIPES, VALVES, AND OTHER VESSELS

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ATTORNEYS
To all whom it may concern:

Be it known that I, Horace C. Nixon, a citizen of Canada, residing at the city of Saskatoon, in the Province of Saskatchewan, in the Dominion of Canada, have invented certain new and useful Improvements in Closures for Pipes, Valves, and other Vessels, do hereby declare that the following is a full, true, and exact description thereof.

This invention relates to improvements in pipe closures.

Among the objects of the invention is to provide a novel form of pipe closure adapted to be associated with drain pipes, cylinders or the like; which will serve to make a tight closure for the associated pipe or cylinder which may be quickly operated to open the pipe; and which is exceedingly simple in construction and inexpensive to manufacture.

It is an important object of the invention that the threads employed in connection with the closure be insulated by a double metallic seal from gases or fluids or vapors which may be within the pipe or article for which the present invention forms a closure, thus to ensure that said threads will be maintained in good condition.

Other objects and objects relating to details of construction, combination and arrangement of parts will hereinafter appear in the detailed description to follow. The invention is illustrated by way of example in the accompanying drawings, in which:

Figure 1 is a vertical sectional view showing the present invention when the parts thereof are fully assembled and associated with a pipe, said pipe being shown in dotted lines.

Figure 2 is a top plan view of the same.

Figure 2a is a perspective view of the retaining cap.

Figure 3 is a group view illustrating sectional views of the retaining cap, plate closure and pipe, respectively.

Figures 4, 5 and 6 are different forms of pipe sections which may be employed.

Referring to the drawings generally, 1 indicates a plate closure, 2 a ferrule or pipe section and 3 a retaining cap.

More particularly the plate closure 1 consists in a disk like plate having its upper face formed with an annular flange, as shown in the drawings, and from the upper edge of such flange there extends an integral annular lip 4 which is curved downwardly as shown and adapted to form an annular recess or cone frustum shaped groove 5 with the periphery of the plate closure 1. The periphery of the plate closure is preferably slightly tapered as best shown in Figure 3.

With respect to the ferrule or pipe section 2 it is to be understood that the same is shown merely to illustrate the end of a pipe for which the present invention may form a closure. This pipe section may be separately provided as illustrated and then suitably connected with the end of a pipe to be closed in any manner desired such as soldering, as provided by the form illustrated in Figure 4 or by threaded connection as shown in Figures 5 and 6. Also the pipe section may be formed upon a receptacle and communicate with the interior thereof. In either event it is to be understood that the present invention is not to be limited to any particular construction of ferrule or pipe section. In the present instance, in Figure 1, an elongated ferrule or pipe section is shown, the upper end 6 being tapered and rounded at the edge and screw threaded below the tapered portion as at 10, Figure 4. The Figure 4 represents an end portion of the pipe section shown in Figure 1. In Figure 5 the pipe section is shown of considerable less length and threaded interiorly as at 8 so that the same may be threaded upon the end of a pipe. In Figure 6 the pipe section is exteriorly threaded so that the same may be threaded into a pipe. Also a bead is formed about the exterior thereof as at 9. The threads 10 in each of the Figures, 3, 4 and 5 are similarly tapered, that is, below the base line of the tapered portion.

The retaining cap 3 is interiorly threaded as at 12, the threads 12 being complementary to the threads 10 of the pipe section 2. The threads 12 do not extend the entire depth of the cap, but as shown in Figure 3, the space existing between the threads 12 and the upper wall of the cap is an annular curved recess as indicated by the reference numeral 7, and designed to receive the annular lip 4.

The retaining cap 3 has its upper edge formed with a plurality of radial notches to provide the lugs or extensions 3 as shown in Figures 1 and 3, whereby to apply a wrench or other means for positioning or removing the cap.

In assembling the present, pipe closure...
the plate 1 is positioned as shown in Figure 1 of the drawings. The associated end of the ferrule or pipe section 2 should be beveled as shown in the different views of the drawings, and the periphery of the plate closure 1 should be complemental to said bevel in order to make a tight fitting and seal on the inside of the tapered end. The threads 10, in each instance, do not extend to the associated end of the ferrule or pipe section 2 and this unthreaded tapered end of the pipe extends into the groove or recess 5 of the plate closure. The retainer cap 3 may now be threaded upon the pipe section 2 and in this way the plate closure 1 is securely held in position, providing a double metallic seal.

As is obvious the lip 4 carried by the plate closure 1 serves the function of further insuring that no gas or liquid may leak to the co-operating threads of the cap and pipe section, as it completely fills the annular recess 7 in the cap. The cap may be easily removed when desired which is of considerable importance in case of an emergency where it is necessary to quickly open a pipe or other article equipped with the present closure.

I claim:

1. A closure of the character described comprising a tubular metal member having one end beveled off in opposite directions providing a double tapered terminal and exteriorly threaded below said beveled portion, a plate closure for said end comprising a metal disc having an annular flange projecting from its upper face at its periphery, the outer face of said flange tapered to fit tightly within the tapered end of the tube, an annular lip oppositely tapered and pendant from the upper edge of said flange and adapted to fit fluid tight over the outer taper of said end, and an internally threaded metallic cap adapted to engage the said exteriorly threaded portion, and engage and secure the plate closure in position to form an inner and outer seal of the tapered end.

2. A pipe closure of the character described comprising in combination, a metallic pipe section having one end inwardly and outwardly bevelled to form a double tapered edge and exteriorly threaded below said tapered edge, a plate closure for said end consisting of a metallic disc adapted to fit fluid tight within said end and having an outwardly inclined annular overhanging lip at its periphery adapted to fit fluid tight on the outer tapered face of said pipe section, and a cap member having an annular flange extending therefrom, said flange internally threaded adjacent its outer end and adapted to engage the exteriorly threaded portion of the tapered end of the pipe section, said flange having an internal annular recess to receive and house said annular lip, said cap adapted to be threaded on the pipe end to force and secure the plate closure in position to form an inner and outer seal between the interior of the ferrule or pipe section and the said exterior threads.

3. A closure as set forth in claim 1, the cap member provided on its outer face with a circular series of radial notches for the purpose set forth.

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