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DISPENSING DEVICE

Original Filed March 11, 1929

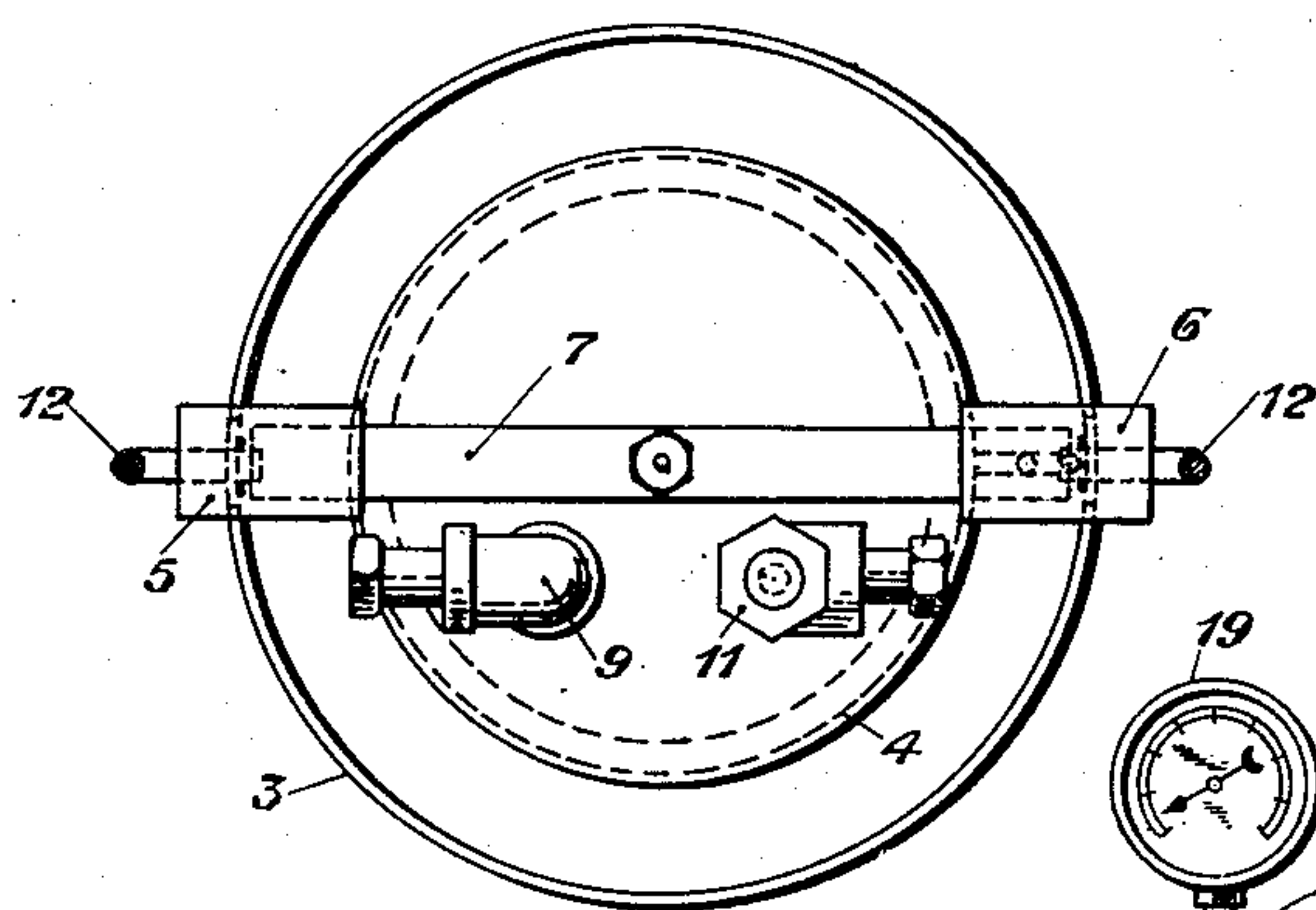


Fig. 2

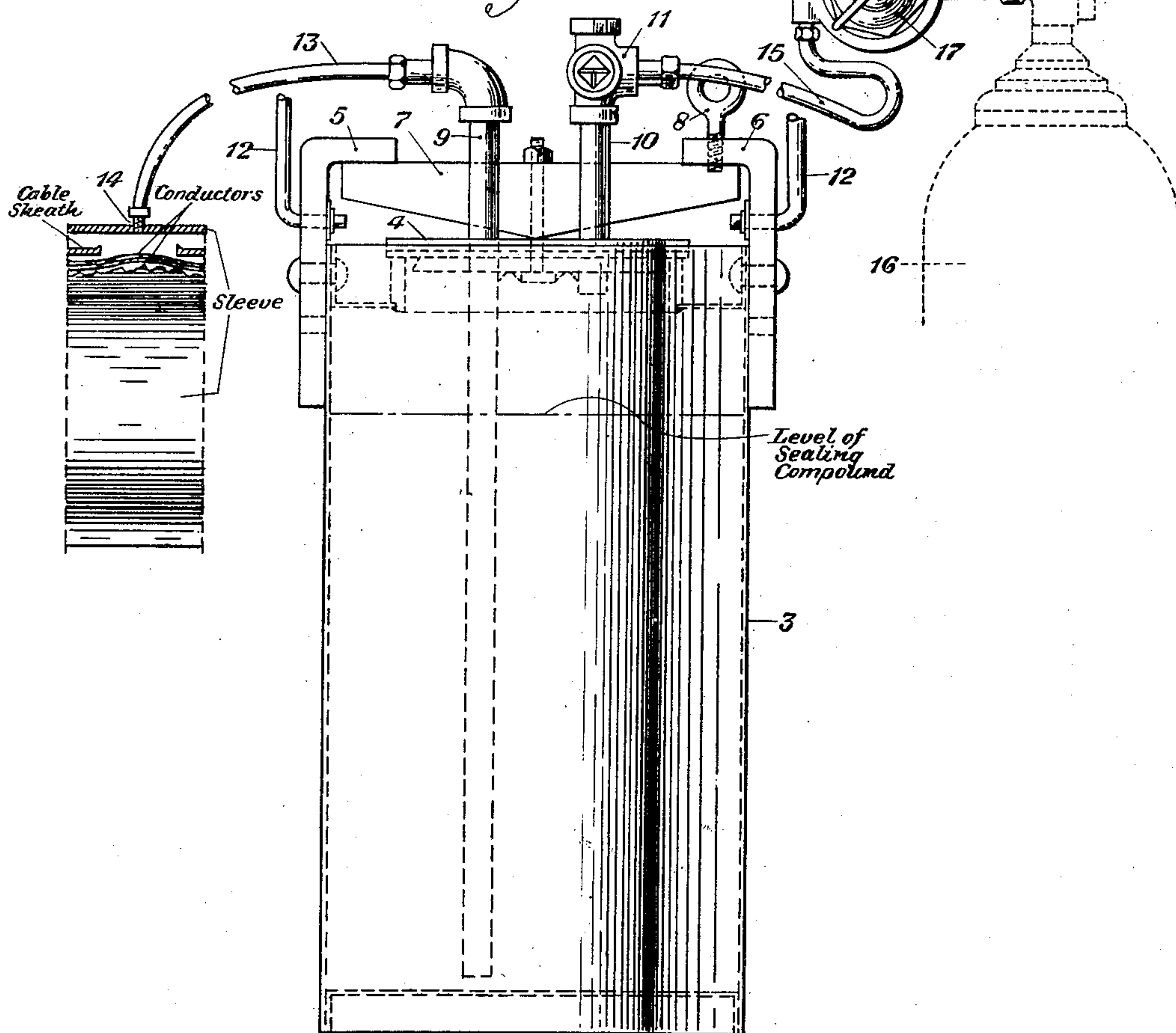


Fig. 1

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DISPENSING DEVICE

Original application filed March 11, 1929, Serial No. 346,026. Divided and this application filed May 24, 1930. Serial No. 455,443.

This invention relates to apparatus for use in gas pressure testing of cables and the like.

This application is a division of the applicant's copending application filed March 11, 1929, and given Serial No. 346,026, in which there is claimed the applicant's novel method of plugging cables, described hereinbelow.

In certain cases it is advisable that gas pressure be continuously maintained in a cable. This gas pressure serves to facilitate the detection of mechanical defects, such as holes, which occur from time to time in the cable sheath, and to prevent the entrance of water into the cable, which, but for the pressure, might take place before the defects could be located and repaired. If gas pressure is introduced into and maintained in a cable for the testing of a section of the cable, it is, of course, necessary that the section under test be isolated by some form of gas-tight plug. The plugging methods which in many respects appear to be the most satisfactory are based on the idea of wiping a sleeve over a broken section of the cable sheath and filling the sleeve with a molten sealing compound, such as wax. Certain difficulties, however, have been encountered in the application of these plugging methods, due to the fact that the sealing compound does not entirely fill the voids between the cable conductors and the insulating paper, and that the sealing compound, on cooling, shrinks away from the inner surface of the sleeve, thus providing leakage paths by which the gas escapes from the supposedly isolated section of the cable.

The principal object of the applicant's invention is the provision of suitable apparatus for plugging a cable with a sealing compound without the disadvantages indicated above.

A further object of the invention is the gas-tight plugging of a cable in a manner which involves a relatively low cost and the minimum of difficulty in forming the plugs.

In general, the applicant's apparatus consists of a gas-tight container, a conduit, means for introducing gas into the container and forcing the compound in the container

through the conduit, and means for indicating the back gas pressure in the container.

The apparatus of the invention will be clearly understood when the following detailed description is read with reference to the accompanying drawings.

Figure 1 of the drawings shows a side view, partly in section, of the container and the connections therefrom to a gas tank and to a cable section, and

Fig. 2 shows a partial top view of the container.

Like numerals of reference in the two figures of the drawings designate corresponding parts.

With reference to the details of the drawings, the container 3, which may have a capacity of 10 quarts, for example, is equipped with a removable cover 4. This cover 4 can be clamped in place to render the container 3 gas-tight by means of the lugs 5 and 6 and the cross bar 7, which is held in association with the cover 4 by a suitable bolt, as indicated in Fig. 1. When it is desired to lock the cover 4 in place, the bar 7 is swung under the lugs 5 and 6 and the screw member 8 is tightened.

A pipe 9, which has a diameter of $\frac{1}{4}$ inch, for example, extends through the cover 4 to a point near the bottom of the container 3. At the top of the pipe 9 a suitable fitting provides for attachment to a flexible hose 13. A short pipe 10 is also provided, passing through the cover 4. This pipe 10 is connected through a three-way cock 11, for example, and a flexible hose 15 to a gas tank 16. A reducing valve 17, a high pressure gauge 18 and a low pressure gauge 19 are associated with the tank 16 and the hose 15 as shown.

A handle 12 is secured to the container through holes in the lugs 5 and 6, as indicated. This handle may be used to hang the container on a strand, for instance.

When a cable is to be plugged, the cable sheath may be cut away over a short section, the conductors separated, and a sleeve wiped over the perforated section of the cable. The wax or other suitable sealing compound is heated to the temperature necessary to render it fluid in the container 3—by means of a

splicer's furnace, for example,—and the cover 4 is clamped securely in place. The level of the molten sealing compound should be approximately at the line shown in Fig. 1. The container 3 is raised to the strand or lowered into the manhole, as the particular case may require, and the hose 13 is then connected to the sleeve, in which a hole 14 has been drilled, by any suitable means.

10 The gas from tank 16 is now admitted to the container 3 through pipe 10 at a pressure of approximately 30 pounds per square inch, as indicated on the gauge 19, for a period of two or three seconds, and the compound is forced up through pipe 9 and to the cable. At the end of the period of two or three seconds, the reducing valve 17 is closed to shut off the gas at the tank, and the back pressure is indicated at the gauge 19 on the low pressure side of the reducing valve. If a back pressure of 30 pounds is indicated and this pressure remains constant for several minutes, it may be assumed that the cable has been effectively plugged. If, however, the back pressure falls off, the gas is again admitted to the container for a period of two or three seconds, and the back pressure is again observed. The operation of admitting the gas to the container 3 for a period of two or three seconds, closing the reducing valve 17 and then observing for several minutes the back pressure indicated in gauge 19, is repeated until the pressure so indicated remains constant for the period of several minutes.

35 While the apparatus of the invention has been specifically disclosed, for the purpose of illustration, it will be understood that the invention is capable of embodiment in other and different forms within its true scope as determined by the appended claim.

40 What is claimed is:

As a device for introducing a sealing compound into a cable or the like to form a gas-tight plug, a gas-tight container adapted to be partly filled with a molten sealing compound, a conduit extending from the lower portion of said container through the top thereof and having means for connection with the structure to be plugged, means associated with the upper portion of said container for introducing gas therein at a known pressure, whereby the compound is forced through said conduit, means associated with said introducing means for interrupting or terminating the introduction of the gas into the container, and means associated therewith for indicating the back gas pressure in the container upon the operation of said terminating or interrupting means.

60 In testimony whereof, I have signed my name to this specification this 21st day of May, 1930.

HERMAN BARTENBACH.