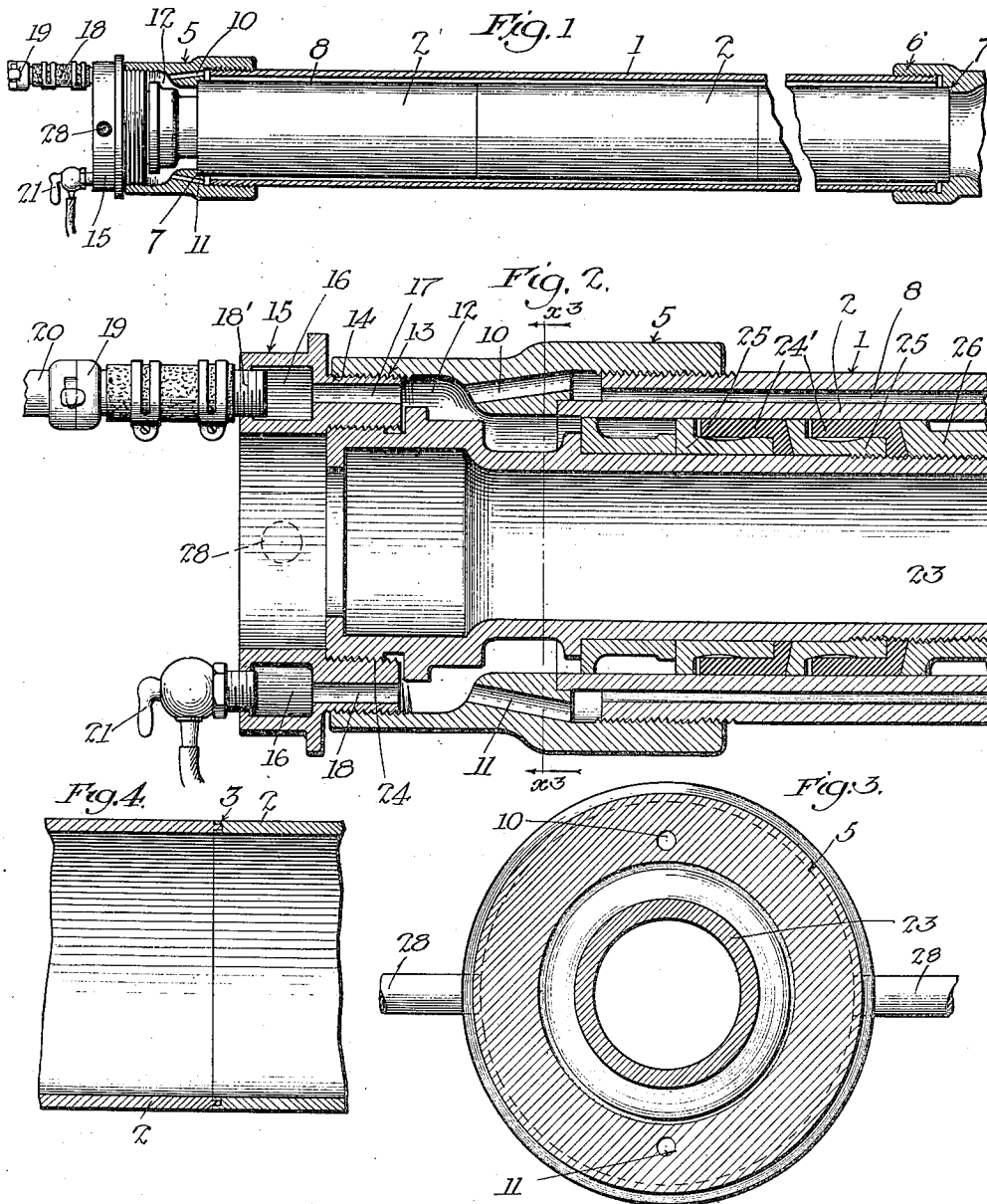


1,059,598.



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UNITED STATES PATENT OFFICE.

DANIEL DANIELS AND LYSLE P. BURGESS, OF LOS ANGELES, CALIFORNIA.

MEANS FOR TESTING PUMP-BARRELS.

1,059,598.

Specification of Letters Patent.

Patented Apr. 22, 1913.

Application filed May 8, 1912. Serial No. 696,032.

To all whom it may concern:

Be it known that we, DANIEL DANIELS and LYSLE P. BURGESS, citizens of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented a new and useful Means for Testing Pump-Barrels, of which the following is a specification.

This invention relates to means for testing pump barrels to ascertain if the same are water-tight, and it is particularly applicable in connection with pump barrels having liners or internal casings supported by an outer casing, the object of the invention when so used, being to determine the water or fluid-tight condition of the liner.

Other objects of the invention will appear hereinafter.

The accompanying drawings illustrate an embodiment of the invention, and referring thereto: Figure 1 is a longitudinal section of a pump barrel, showing the liner and the testing device in elevation. Fig. 2 is a longitudinal section through a testing device and the adjacent portion of the pump barrel. Fig. 3 is a section on line x^3-x^3 , Fig. 2. Fig. 4 is a longitudinal section of a portion of the liner, showing the joint between the sections thereof, one object of the invention being to determine the fluid-tight condition of such joint.

The pump barrel herein shown and to which our present invention is applied is similar to that shown in Patents No. 998,076, granted July 18, 1911, and No. 1,004,151, granted September 26, 1911.

1 designates the outer casing for the working barrel of a well pump and 2, the sections of the liner therefor, said sections being arranged end to end with joints such as shown at 3 in Fig. 4, to provide for holding the liner sections in alinement, and the liner being held between screw heads or couplings 5 and 6 at the ends of the barrel. Each of said couplings is provided with a shoulder or annular rabbeted portion 7 engaging the end of the end sections to hold the liner sections in fixed relation within the casing 1 and spaced from the casing 1, so as to provide a space 8 extending around the liner and from end to end thereof.

The present invention provides for testing the fluid-tight condition of the liner by applying fluid pressure in the space 8 between the liner and the outer casing 1. In order to admit the testing fluid, preferably water,

to the said space 8, two openings or passages 10 and 11 are provided in the coupling member 5, leading from the space 8 to a chamber 12 in the outer end of the coupling. Said chamber is screw-threaded as shown at 13 to enable it to serve as a coupling means for the barrel, and the testing device consists of a plug or member 15 having a screw-threaded portion 14 adapted to screw into the screw-threaded portion 13 of the coupling, and provided with means for making a fluid-tight joint with the liner, and with means for supplying fluid to the space between the plug and the coupling. The testing plug 15 may be provided with an annular chamber 16 and with passages 17 and 18 communicating with said chamber, and opening at the forward end of the plug so as to communicate with the space 12 within the coupling, said chamber 16 being provided with inlet means for testing fluid, consisting, for example, of a pipe 18 communicating with the annular chamber 16, and provided with a coupling 19 for quick attachment and detachment of a hose 20 for supplying the testing fluid. A petcock 21 is also provided, communicating with the annular chamber 16 to allow displacement of air from said chamber 16, chamber 12 and space 8, when the fluid is being admitted, and to allow escape of the fluid after the test has been made. The means for making a fluid-tight joint between the plug and liner may consist of a sleeve or member 23, screwing at 24 into the plug and extending at its forward end within the liner, and provided at its forward portion with one or more cups 24 of leather or other suitable material, said cups being retained by washers 25 and screw collar 26, and being adapted to be pressed outwardly against the wall of the liner when the fluid pressure is brought on said cups. The plug 15 may be provided with one or more arms 28 for screwing it tightly into position.

The operation is as follows: The plug 15 is screwed into the screw-thread 13 of the pump barrel to be tested, and the petcock 21 being opened the fluid under pressure is admitted through the pipe 20 and passing through the annular chamber 16 and passage 17 enters the chamber 12 within the coupling 5 and passes through the passage 10 into the space 8. At the same time, the air displaced by the water entering in this manner, passes from the space 8 through

the passage 11, chamber 12 and passage 18 and chamber 16, and out through the petcock 21. When all the air has been displaced in this manner, the petcock 21 is closed and the supply of fluid under pressure is continued until the pressure within the space 8 reaches the desired testing limit. On then looking into the interior of the tubular liner sections 2, it is at once apparent whether there is any leakage through the joints between said sections or between the end sections and the couplings. The test having been made, the supply of water under pressure is cut off and the petcock 15 opened to allow the water to drain from the space 8 and chambers 12 and 16 and the testing plug may then be removed.

Inspection of the interior of the liner to determine the presence of any injurious leakage is facilitated by making the testing plug and the extension 23 thereof tubular or open from end to end, so that a view may be had clear through the liner, but this is not necessary as the plug may be closed, it being only necessary in that case to illuminate the interior of the liner by suitable means.

What we claim is:

1. A testing device for pump barrels such as described, which are provided with an outer casing and an internal liner, said testing device comprising in combination, a coupling secured to said casing and liner and having a chamber and two passages to establish communication between said chamber and the space between said casing and liner, a testing plug screwing into said coupling, and provided with means for making a tight joint with the interior of the liner, with means for supplying liquid under pressure to the chamber in the coupling, and means for allowing escape of air from said chamber.

2. A testing device for pump barrels which are provided with an outer casing and with an internal liner spaced from said casing, said testing device comprising in combination, a coupling formed with a chamber communicating with the space between the liner and casing, a plug screwing into said chamber and provided with an extension extending within the liner, expandible cup means on said extension for engaging the wall of the liner to make a liquid-tight joint and said plug being provided with inlet means for liquid under pressure and with a passage communicating with said inlet means and with said chamber of the coupling, and said testing plug being provided with outlet means for fluid and with a passage communicating with said outlet means and with said chamber of the coupling.

3. A testing device for pump barrels which are provided with an outer casing and an internal liner spaced from said casing, said testing device comprising in combination, couplings at the ends of the barrel, one of said couplings having a chamber and provided with passages communicating with the space between the liner and barrel and with the said chamber and coupling, means constructed and adapted for connection with said chambered coupling for supplying liquid to said chamber, and means for allowing escape of air from said chamber.

In testimony whereof, we have hereunto set our hands at Los Angeles, California, this 24th day of April, 1912.

DANIEL DANIELS.
LYSLE P. BURGESS.

In presence of—
ARTHUR P. KNIGHT,
MARTHA M. LANGE.