

D. DOMENICO.
BARREL TESTER.
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1,297,113.

Patented Mar. 11, 1919.

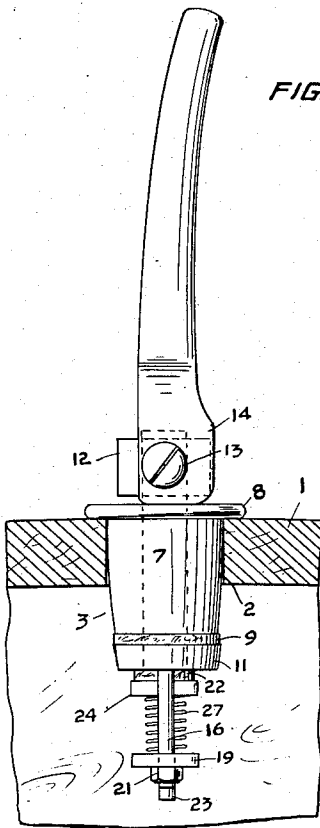


FIG. 1

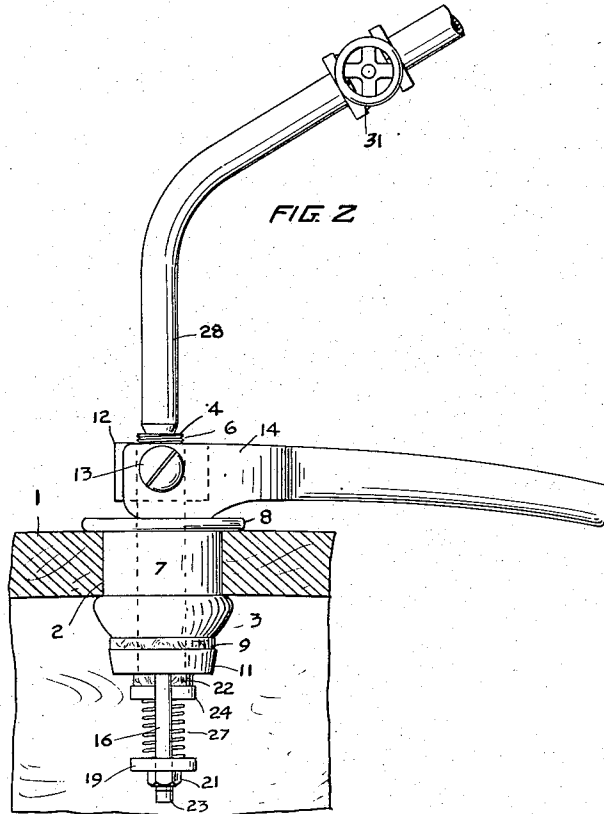


FIG. 2

FIG. 3

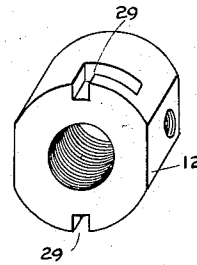
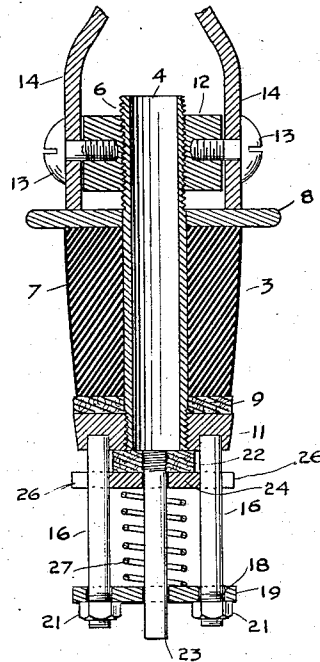


FIG. 4

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BARREL-TESTER.

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To all whom it may concern:

Be it known that I, DEIANA DOMENICO, a citizen of the United States, residing at San Francisco, in the county of San Francisco and State of California, have invented new and useful Improvements in Barrel-Testers, of which the following is a specification.

The object of the present invention is to provide a device for testing the tightness of barrels and other receptacles, which will permit the barrel or other receptacle to be repaired or rendered tight against leakage while the testing device is still in position ready for use.

In the accompanying drawing, Figure 1 is a sectional view of a portion of a barrel showing my improved testing device in its first position therein; Fig. 2 is a similar view of the same showing the testing device in a second position therein; Fig. 3 is a sectional view of the testing device detached from the barrel and viewed at right angles to the view shown in Figs. 1 and 2; Fig. 4 is a view of a nut for steam connection.

Referring to the drawing 1 indicates a barrel, of which only the portion having the bung hole 2 is here shown. In said bung hole is inserted a stopper 3 forming part of my improved testing device and comprising a tube 4, threaded as shown at 6 on its outer end, and a slightly conical jacket or bushing 7 of rubber. On to the outer end of said tube 4 is passed a perforated disk 8 abutting against the outer end of the jacket 7. The inner end of said slightly conical jacket abuts against a washer 9 of leather and presses said washer against an apertured disk 11 of metal screwed on the threaded inner end of the tube 4.

On the outer end of said tube is screwed a nut 12 and pivoted on opposite faces of said nut by screws 13 are the tines of a forked end of a lever or handle 14.

From the inner face of the disk 11 extend inwardly rods 16 which pass through holes 18 in a plate 19 said plate being retained in position by nuts 21 secured on the threaded inner ends of said rods 16. Normally closing the hole in the disk 11 is a leather disk 22, into which is secured the threaded outer end of a stem 23, said stem being slidable in a central hole in the plate 19, and extending through a central hole in a slide plate 24, the ends of which are recessed, as shown at 26, to engage said rods 16. A spring 27,

coiled around said stem 23 and compressed between the plates 19 and 24, presses said slide plate against said closing disk 22 and therefore normally maintains closed the hole in the disk 11.

The device is used in the following manner:—

When it is desired to determine whether or not a barrel or other receptacle is sufficiently air-tight, a pipe 28 leading from a source of supply of compressed air, or steam under pressure, is connected with the outer end of tube 4. If compressed air is used it is sufficient to insert the end of the pipe 28 in the outer end of the tube 4, and the pressure of the air will be sufficient to make an air-tight connection between the two. If there be used steam of sufficiently high pressure the steam pipe can be connected with the outer end of the tube 4 by any suitable coupling, for which purpose the nut 12 may be formed with a bayonet slot 29.

When the connection has thus been made, the stopper is pressed tightly into the bung hole of the barrel; the rubber tube tightly engages the side of the bung hole. The handle is then turned from a position in which it extends approximately in alinement with the tube 4 through a right angle to a position in which it extends at right angles thereto. In so turning the handle, the disk 11 is pressed inwardly with reference to the tube 4, thereby greatly compressing the rubber jacket or bushing 4. The reason for the inward movement of the disk 11 is that the pivotal line of the handle or lever upon the nut is considerably nearer to the end of the lever which engages the disk in the first position than it is to the side edges of the tines of the lever which engage the disk in the second position, since this pivotal line is, for the time being, fixed in relation to the tube 4. It follows that the disk 11 is by the aforesaid movement of the handle moved inwardly relative to the tube 1. Thereby the rubber jacket or bushing is compressed longitudinally and correspondingly enlarged transversely.

The operator now turns a valve 31 admitting compressed air or steam to the pipe 28. The pressure fluid then enters the tube 4 and forces away from the disk 11 the leather disk 22 against the pressure of the spring 27, the guide stem 23 sliding in the plate 19. Thereby the compressed fluid is permitted to enter the barrel. If sufficient amount of

compressed fluid is allowed to so enter to fill the barrel and if the barrel or other receptacle is not sufficiently tight the compressed fluid will escape at the leak.

- 5 In order to render barrels air-tight, there is often poured therein molten paraffin, which, by rolling the barrel around is caused to fill all the interstices or small holes in the barrel. If the barrel is not sufficiently tight, 10 the paraffin, by the pressure of the testing fluid, will be forced through these holes or crevices, thus indicating to the operator the location of the leaks. The operator can then, while the testing device is still in position, 15 calk or otherwise render air-tight said holes or crevices.

The metal disk 11 becomes very hot by contacting with the molten paraffin, and the object of the washer 9 is to space said metal disk 11 from the rubber jacket or bushing 20 7, thereby preventing said jacket or bushing from being injured by the heat from the metal disk 11.

It will be observed that the amount of 25 compression of said rubber bushing can be varied by varying the normal distance between the nut 12 and the disk 8, which can be done by screwing the nut around the tube 4.

30 I claim:—

1. In a barrel testing device the combination of an apertured stopper of suitable form and size to be inserted in the bung hole of a barrel and comprising a rubber bushing 35 or jacket and a tube extending axially there-through, the outer end of which is arranged to communicate with an end of a pressure fluid tube to conduct pressure fluid into the barrel, guiding means extending inwardly 40 into the barrel and supported by the inner end of the tube, and spring-actuated means, guided by said guiding means, for closing the inner end of the tube.

2. In a barrel testing device the combination of an apertured stopper of suitable 45 form and size to be inserted in the bung hole of a barrel and comprising a rubber bushing or jacket and a tube extending axi-

ally therethrough, the outer end of which is arranged to communicate with an end of a 50 pressure fluid tube to conduct pressure fluid into the barrel, guiding means extending inwardly into the barrel and supported by the inner end of the tube, and spring-actuated means, guided by said guiding means, for 55 closing the inner end of the tube.

3. In a barrel testing device the combination of an apertured stopper of suitable form and size to be inserted in the bung hole of a barrel and comprising a rubber bushing 60 or jacket and a tube extending axially there-through, the outer end of which is arranged to communicate with an end of a pressure fluid tube to conduct pressure fluid into the barrel, a nut screwed on the outer end of 65 said tube, a lever pivoted on said nut, means whereby the movement of said lever on its pivot contracts said jacket in an axial direction; guiding means extending inwardly into the barrel and supported by the inner 70 end of the tube, and spring-actuated means, guided by said guiding means, for closing the inner end of the tube.

4. In a barrel tester, the combination of a tube, a rubber jacket or bushing thereon, a 75 metal disk secured on inner end of said tube, a leather washer between said disk and jacket, guide rods extending inwardly from the outer side of said disk, nuts on the inner ends of said guide rods, a guide plate 80 through which said rods extend, a slide plate guided by said rods, a stem extending through said slide and guide plates, a spring coiled around said stem and compressed between said slide and guide plates, a disk 85 secured to the outer end of said stem between said first-named disk and slide plate, a nut on the outer end of said tube, a forked lever the tines of which are pivotally attached to opposite sides of said nut, and the 90 pivotal axis of which is nearer to the nearer end of said lever than to a side edge thereof, and a disk through which said tube extends and contained between said nut and bushing.

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