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1,992,320

METALLIC CONTAINER OPENING ATTACHMENT FOR A TAP OR PLUG

Filed March 20, 1934

Fig. 1.

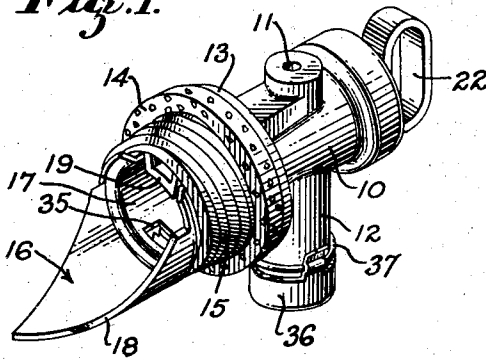


Fig. 2.

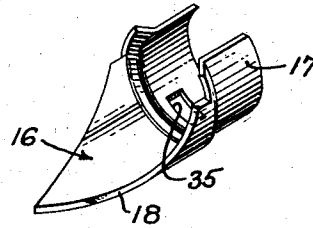


Fig. 4.

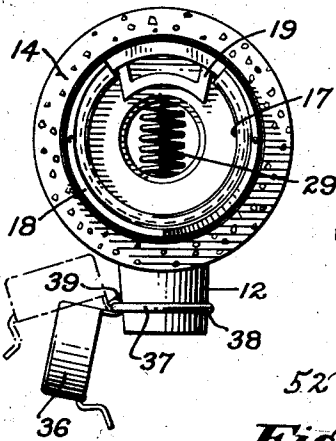


Fig. 3.

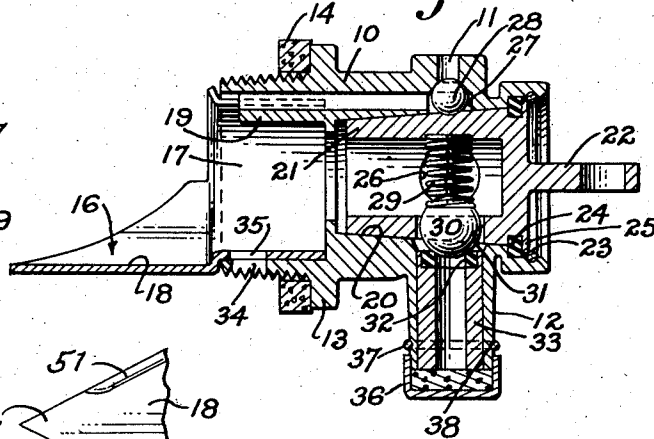


Fig. 7.

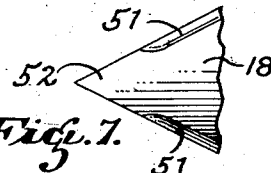


Fig. 5.

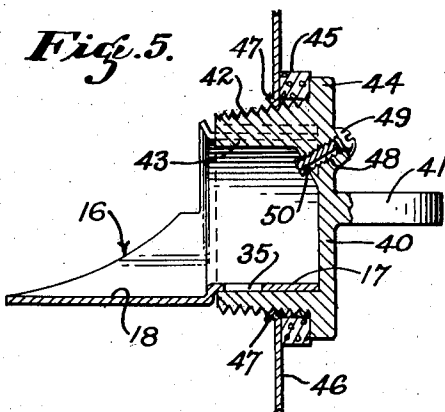
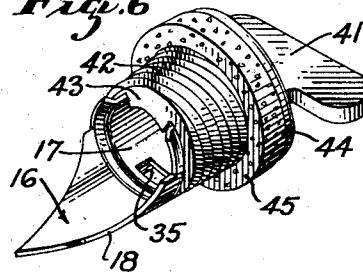


Fig. 6.



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METALLIC CONTAINER OPENING ATTACHMENT FOR A TAP OR PLUG

Alberto Louis Maggenti, San Francisco, Calif.

Application March 20, 1934, Serial No. 716,446

5 Claims. (Cl. 221-23)

My present invention relates to a metallic container perforating and cutting device, for forming an opening into which a dispensing tap or a plug may be threaded, and more particularly to an improvement upon a similar device which is described and claimed in my copending application for Letters Patent, Serial Number 661,233, filed March 17, 1933, and entitled Dispensing valve.

10 An object of my invention is to provide an improved form of metallic container perforating and cutting element for a tap of the character disclosed in my above application for Letters Patent.

15 Another object of my invention is to provide a perforating and cutting tool for a metallic container which can be attached to and detached from a tap or a plug in a simple and convenient manner.

20 Another object of my invention is to provide a perforating and cutting tool for a metallic container which can be stamped from sheet metal.

25 Another object of my invention is to provide a perforating and cutting tool for a metallic container which can be easily and conveniently replaced and/or used interchangeably with a dispensing tap and a plug.

30 A further object of my invention is to provide a new and novel tool for perforating and forming a threaded opening in a thin walled metallic container into which a tap or closure means may be screwed.

35 With the above and other objects in view, my invention resides in the construction, combination and arrangement of parts substantially as will be hereinafter described and more particularly defined by the appended claims.

40 For a better understanding of my invention reference should be had to the accompanying drawing wherein there is shown, by way of illustration and not of limitation, a preferred embodiment thereof.

In the drawing;

45 Figure 1 is a perspective view showing my improved perforating and cutting tool mounted upon a dispensing tap,

Figure 2 is a perspective view of the perforating and cutting tool,

50 Figure 3 is a vertical longitudinal sectional view of the tap and container perforating and cutting tool illustrated in Figure 1,

Figure 4 is an end elevation of the device illustrated in Figure 3,

55 Figure 5 is a perspective view showing my

improved container perforating and cutting tool applied to a threaded closure member,

Figure 6 is a longitudinal sectional view showing the device, illustrated in Figure 5, applied to the wall of a metallic container, and

Figure 7 is a fragmentary view showing the preferred manner of sharpening the perforating and cutting tool.

For the purpose of illustrating the application of my improved perforating and cutting tool to a fluid dispensing tap, I have shown, in the drawing, a tap of the character described and claimed in my copending application for Letters Patent, Serial Number 697,136, filed November 8, 1933, and entitled Dispensing tap valve.

This dispensing tap has a body portion 10 with a vent opening 11 in its top and a spout 12 at its lower side. At the base of the body portion 10, there is a flange 13 which is adapted to engage a mounting gasket 14, and beyond the flange 13 the tap has a threaded extension 15, by means of which it can be attached to a metallic container.

Projecting outwardly from the threaded extension 15, there is a perforating and cutting tool 16 which is constructed in accordance with my present invention. This tool 16 has a semi-cylindrical base portion 17 that can be snapped into the threaded extension 15 upon the body portion 10. It also has a sharpened bayonet portion 18 which is adapted to perforate the wall of a metallic container and cut a round hole therein when turned. The bayonet portion 18 is shown as displaced outwardly from the semi-cylindrical base portion 17, so that its outer surface will lie substantially in axial alignment with the root of the first thread on the threaded extension 15.

When the cutting tool 16 is mounted upon the body portion 10, the ends of the semi-cylindrical base portion 17 engage a raised vent-forming portion 19 which extends through the inside of the threaded extension 15. This prevents a turning of the tool 16 when the body portion 10 is rotated to complete a cutting of the round hole in the container wall after the bayonet portion 18 has been projected therethrough. As the cutting of the hole is completed the first thread upon the threaded extension 15 will engage the round hole formed in the container. A further turning of the body portion 10 will cause the threaded extension 15 to progress into the hole in the container and because of the tapered disposition of the threads they will expand the hole and form an annular thread-engaging surface there-

around by rolling back the edges of the container.

Upon referring to Figures 3 and 4 of the drawing, it will be seen that the body portion 10 has an inwardly tapering bore 20, into which a tapered valve-carrying and operating member 21 projects. The member 21 has a handle 22, by means of which it can be rotated and it is held in the body portion 10 by a snap ring 23. A packing gasket 24 is interposed between the end of the body portion 10 and a flange 25 upon the member 21, for the purpose of sealing the outer end of the tap.

The valve-carrying and operating member 21 has a port 26 that is adapted to align with the spout 12 when the member 21 is in its open position, and directly opposite the port 26 it has a pocket 27, into which a vent-controlling ball valve 28 may repose when the member 21 is in its "open" position. Disposed within the member 21 and extending transversely thereof is a helical spring 29 which engages a ball valve 30 that is adapted to seal the spout opening of the tap when the member 21 is in its "closed" position. The ball valve 30 is located in an opening 31 in the side of the member 21 and is adapted to roll into and out of engagement with a valve seat 32, of rubber or the like, mounted at the inner end of the spout 12. As shown in the drawing, the valve seat 32 is recessed in the end of a lining tube 33 which is pressed into the spout 12. The member 21 has an eccentric groove which extends in one direction from the pocket 27 and part way around its outer surface. This groove, because of its eccentricity, moves the ball valve 28 into and out of sealing engagement with the vent opening 11, as the member 21 is turned to close and/or open the tap.

When assembling the tap, the body portion 10 is held with the spout 12 extending upward and the ball valve 28 is then placed in the body portion 10 adjacent the vent opening 11. The helical spring 29 can now be placed in the valve-carrying and operating member 21, with the ball valve 30 in the opening 31 at its end. After the parts of the tap have been assembled together, as above, the member 21 can be inserted into the body portion 10 by holding the ball valve 30 with the thumb so as to compress the helical spring 29. When the member 21 has been moved into its final position, the snap ring 23 can be inserted in its seat and the tap will be ready for use. The threaded extension 15 has an opening 34 to permit a complete draining of the container and cooperating therewith the tool 16 has a similar opening 35.

It is contemplated that my present invention will be extensively used in connection with containers such as are used in shipping olive oil and the like. Therefore, the spout 12 is shown as having a small hinged cap 36 disposed over the end thereof. This cap 36 will close the end of the spout 12 when the tap is not in use and will prevent the accumulation of foreign matter therein. As shown, the cap 36 is hinged upon a snap ring 37 which is disposed in a groove 38 formed about the end of the spout 12. The snap ring 37 is formed of resilient wire so that it will yield slightly and hold the cap 36 out of the way when the tap is in use. To insure a retention of the cap 36 in this or an inverted position, as shown in Figure 4 by dot and dash lines, the hinge portion thereof may be provided with a small protuberance 39 which will engage the groove 38 on the spout 12.

In Figures 5 and 6 of the drawing, I have shown my improved perforating and cutting tool 16 as applied to a screw plug which can be used to seal an opening in a metallic container and removed to permit a pouring of its contents. As here disclosed, the screw plug has a body portion 40, upon which is a thumb piece or grip 41. Opposite the grip 41 the body portion 40 has a hollow tapering and screw threaded extension 42, into which the semi-cylindrical base portion 17 of the tool 16 is disposed. This threaded extension 42 is provided with a raised boss 43 upon its inner surface, against which the ends of the semi-cylindrical base portion 17 abut. At the base of the threaded extension 42 there is a flange 44 and disposed against this flange 44 is a packing washer 45 of cork, rubber or other material.

When a screw plug of this character is equipped with a perforating and cutting tool 16, it can be used to open a metallic container so that the contents can be poured therefrom and after the contents have been poured it can be inserted into the opening and turned therein so as to again seal the container. The tool 16 has a disposition and curvature which will lead the first thread of the threaded extension 42 into the hole cut by the bayonet portion 18. A further turning of the plug will cause the threads upon the extension 42 to turn back the edges of the hole and form an annular threaded lip upon the container wall. In Figure 5 of the drawing, 46 designates a container wall and 47 designates the threaded lip. The formation of this lip 47 results, as has been previously stated, from the fact that the bayonet portion 18 is dimensioned and disposed so as to cut a round hole of a diameter substantially the same as the diameter at the root of the first thread upon the threaded extension 42. With such an arrangement it will be seen that as the tapered and threaded extension 42 is turned into the container, the metal thereof surrounding the hole will be rolled back or curled up, so as to form a screw threaded connection between the plug and the container wall 46. As the plug is screwed into its final position the packing washer 45 will engage the container wall 46 and form a tightly sealed joint.

It is possible that the plug may be used with a container having a fluid therein from which gas may be evolved or which may be subject to expansion. Therefore, in order to permit an escape of gas or vapor, I may, if desired, provide the plug with a vent. Such a vent may be formed in a number of ways. In the drawing I have shown a simple threaded hole 48, in which there is disposed a round headed machine screw 49 having a small axially extending groove 50 cut in one side thereof. The groove 50 extends only part way up the screw 49. When it is desired to vent a container, to which the plug has been applied, this can be done by turning the screw 49 outwardly until the groove 50 communicates with the atmosphere.

As shown in Figure 7 of the drawing, the edge of the bayonet portion 18 is ground to provide a cutting edge 51, the cutting edge 51 stops short of the point of the bayonet portion 18 and leaves what might be termed a perforating point 52. This provides a perforating and cutting tool which is more durable than would be the case if the cutting edge were extended to the tip thereof.

While I have, for the sake of clearness and in order to disclose my invention so that the same can be readily understood, described, and illustrated specific devices and arrangements, I desire

to have it understood that this invention is not limited to the specific means disclosed, but may be embodied in other ways that will suggest themselves to persons skilled in the art. It is believed that this invention is new and it is desired to claim it as such so that all changes as come within the scope of the appended claims are to be considered as part of this invention.

Having thus described my invention, what I claim and desire to secure by Letters Patent is—

1. In a device of the character described, the combination of a body member having a tapered screw threaded extension formed thereupon, and a detachable metallic container-perforating and cutting tool mounted upon said screw threaded extension, said perforating and cutting tool having a semi-cylindrical extension-engaging portion and a curved bayonet extending outwardly from said extension-engaging portion and disposed in line with the root of the first thread upon said screw threaded extension, whereby the hole cut by a turning of the bayonet will be expanded to form a lip about the hole when the screw threaded extension is turned into the wall of a metallic container.

2. In a device of the character described, the combination of a body member having a hollow tapered and screw threaded extension formed thereupon, and a detachable metallic container-perforating and cutting tool having a semi-cylindrical portion and a curved outwardly extending bayonet, said semi-cylindrical portion being disposed within said hollow tapered and screw threaded extension and said bayonet being disposed in line with the root of the first thread upon said screw threaded extension, whereby the hole cut by a turning of the bayonet will be expanded to form a lip about the hole when the screw threaded extension is turned into the wall of a metallic container.

3. In a device of the character described, the combination of a body member having a hollow tapered and screw threaded extension formed thereupon, a detachable metallic container-perforating and cutting tool having a semi-cylindrical portion for engaging said screw threaded extension and a curved bayonet extending outwardly from the end of said screw threaded extension, said bayonet being disposed in line with the root of the first thread upon said screw threaded extension, whereby the hole cut by the bayonet will be expanded to form a lip about the hole when the screw threaded extension is turned into the wall of a metallic container, and means for securing said bayonet against rotation upon said body member.

4. In a dispensing tap for a sealed metallic container, the combination of a tap body having a tapered and screw threaded extension which is adapted to be turned into the wall of a container, a demountable curved bayonet having a semi-cylindrical resilient portion extending into and frictionally engaging the inside of the screw threaded extension upon the tap body, and means cooperating with said semi-cylindrical resilient portion for preventing a displacement thereof when the tap body is turned to cut a round hole with the bayonet.

5. In a screw threaded plug for a metallic container, the combination of a plug body having a tapered and screw threaded tubular extension which is adapted to be turned into the wall of a container, a demountable curved bayonet having a semi-cylindrical resilient portion extending into and frictionally engaging the inside of the tubular extension upon the plug body, and means cooperating with said semi-cylindrical resilient portion for preventing a displacement thereof when the plug body is turned to cut a round hole with the bayonet.

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