March 4, 1924. 1,485,579

H. J. WYATT

CAN TAP

Filed Feb. 2, 1922

Fig. 1.

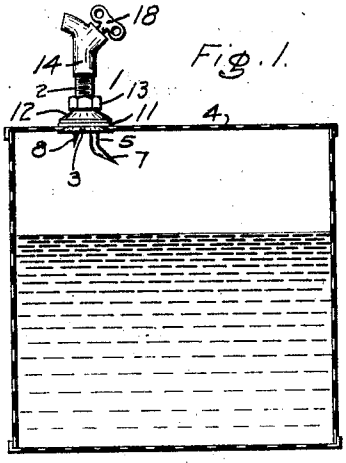


Fig. 2.

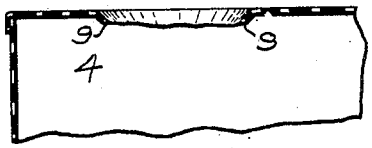


Fig. 3

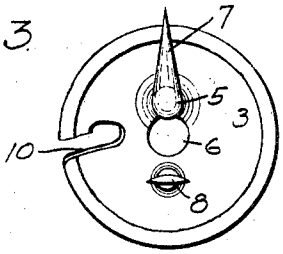


Fig. 4.

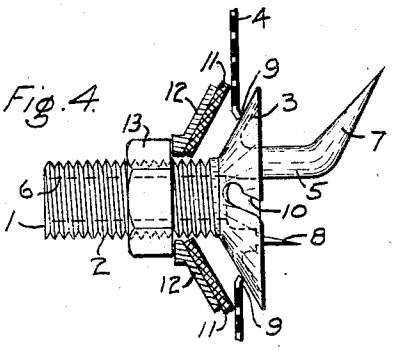


Fig. 5.

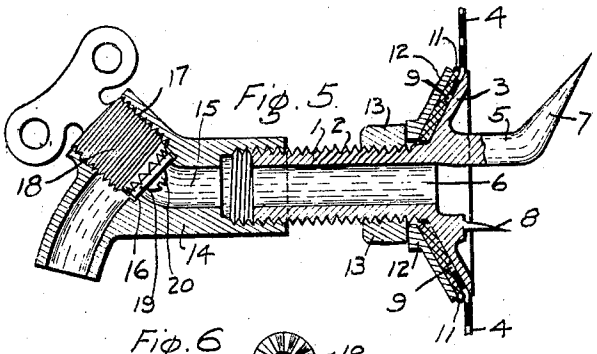


Fig. 6



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UNITED STATES PATENT OFFICE.

HERBERT J. WYATT, OF LONGBRANCH, WASHINGTON.

CAN TAP.

Application filed February 2, 1922. Serial No. 533,505.

To all whom it may concern:

Be it known that I, HERBERT J. WYATT, a British subject, residing at Longbranch, in the county of Pierce, State of Washington, have invented certain new and useful Improvements in Can Taps, of which the following is a specification.

This invention relates to devices adapted to make an opening in a can and to then be secured to the can at said opening to form a spout and tap therefor. The objects of this invention are, first, to provide means whereby the connection between the can and the spout is made tight so that a considerable pressure may be applied in the can without leakage around the spout; second, to form said connection so that no obstruction to the complete drainage of the contents from the can is made by the parts of the spout connection; third, to provide means for renewing the packing washer; and fourth, to provide means for preventing the tap washer from becoming accidentally loosened from the tap. My invention is, further, an improvement over that shown and described in my former patent numbered 1,309,167 and dated July 8, 1919.

I attain the above and other objects by the devices and arrangements illustrated in the accompanying drawings, in which:—

Fig. 1 is a section of a can with my improved tap in place thereon;

Fig. 2 is a section of a part of the can showing the hole with inward bent edges as made by the cutter;

Fig. 3 is a plan of the inner end of my device;

Fig. 4 is a view showing my device inserted in the hole in the can and about to be tightened to bend the inturned edges of the hole outward;

Fig. 5 is a section of my device mounted in place; and

Fig. 6 is a plan of the end of the tap plug showing the serrated surface thereof.

Similar numerals of reference refer to similar parts throughout the several views.

One of the great difficulties found in the use of the can tap patented by me was that it was practically impossible to make the joint between the can and the tap tight enough so that no leakage would occur, much less would the can hold pressure. This was found to be due to the fact that when the hole is cut in the metal of the can, its edge is stretched by the action of the knife and therefore, when it is forced into the same plane as the can surface, by the flat surfaces of my device, it crinkles and leakage occurs at each such irregularity in the surface.

I have now overcome the above objection by bending the edge of the hole outward (instead of flat) so that its periphery will not be shortened but, if anything will be slightly greater and is therefore stretched tight and smooth. Then I clamp the tap to said bent surface and in this way am able to make a joint which has stood pressure without leakage. The conical portion of the tap base in my said former patent was intended only to insure the tap occupying the center of the hole so that a uniform amount of the edge of the hole would be clamped all around the base.

A further objection was found that a portion of the tap base extended so far into the can that all the liquid therein could not be drawn therefrom over the intervening edge of the base. In regard to this practical objection I have devised the fastening so that when the connection is completed the edge of the fastening comes substantially in line with the inner surface of the can.

Refering now to the drawings it will be seen that the device consists of two principal parts, namely, the part attached to the can and the removable tap. The part attached to the can comprises a tubular body 1, provided with screw-threads 2 on its outer surface and terminating in a collar 3 adapted to engage the inner surface of the cam 4. The collar 3 is conical in its outer surface and has no flat part bearing on the can. A pivot lug 5 extends inward from the under surface of the collar 3, at one side of the passage 6 of the tube 1, and terminates in a bent and pointed end 7. The point 7 is adapted to pierce the metal of the can and the bent part is adapted to keep the disk, cut out of the can 4, from falling into the can when the hole has been cut. A knife 8 whose outer surface is formed on the arc of a circle concentric with the pivot lug 5, extends from the under side of the collar 3, on the opposite side of the passage 6, and is adapted to cut the metal in a circle about the center of the lug 5, to form a hole. A hole is thus formed in the can 4 but its edge 9 is somewhat unevenly stretched and is bent inward as shown (Fig. 2). The collar 3 has a slot 10 extending

inward from its edge. A rubber, or other suitably resilient, packing washer 11 and a corresponding metal washer 12, with a flat shoulder on its truncated end, are slipped over the screw-threaded tube 1; then a nut 13 is screwed down thereon. These parts 11 and 12 are, at first, separated from the correspondingly shaped collar 3 in order to permit the collar alone to be inserted into the interior of the can. As soon as the hole is cut, and the disk thus cut out is removed from the inside of the can by the bent point 7 as above described, the edge 9 of the hole is slipped into the slot 10 and the tube and collar are turned and manipulated until the collar passes into the inside of the can. Then the nut 13 is screwed towards the collar 3 forcing the lower edges of the washers 11 and 12 on to the outer surface of the can around the edge 9 of the hole. This draws the collar 3 into the hole and centers the tube 1 therein. Further forcible screwing of the nut 13 draws the collar 3 outward and its conical form forces the formerly inward bent edge 9 of the hole to a corresponding outward bend, and thus the edge 9 is tightly clamped between the collar 3 and the resilient washer 11, and, since the said bent edge 9 is smoothed by the internal tension therein, the said joint becomes sufficiently tight to prevent leakage, even under pressure.

The tap part consists of a main body 14, having a passage 15 therethrough, communicating with the passage 6, and is adapted to screw on to the end of the tube 1. The pasage 15 has an outward facing valve seat 16 therein. A screw-threaded part 17 extends at right angles from said valve seat concentrically therewith. A plug 18 fits in threaded part 17 and its lower surface is serrated or roughened as shown in Figs. 5 and 6. A fiber or other suitable washer 19 is secured to the serrated surface of the plug 18, by means of a central screw 20, and is adapted to engage the valve seat 16 to close the passage 15. Since the valve seat 16 faces outward the plug 18 does not have to be tight in its threads when the valve is closed because it is positioned on the outside of the valve and the liquid only comes in contact with the exposed surface of the washer 19. The serrated surface against which the washer 19 presses prevents the washer from becoming loosened by the turning on and off of the valve.

Usually the part 14 is kept screwed on the tube 1 but it can be removed therefrom in order to renew the washer 11. The conical form of the collar 3 permits its outer edge to be drawn to the inner surface of the can so that there is no obstruction raised thereby to the withdrawal of the entire contents of the can.

Having described my invention, what I claim is:—

A device of the class described comprising a tubular member having a conical collar integrally formed on its inner end, said collar being on the inside of a can and said tubular member passing outward through a hole therein; a resilient washer encircling said tubular member outside of said can; a metal washer similarly disposed outside of said resilient washer and shaped to correspond with said conical collar; and a nut screwed on said tubular member and engaging said metal washer and adapted to draw said conical collar outward and thus to bend the edge of the hole in the container outward, whereby the edge of the hole is smoothed and is clamped between said collar and said resilient washer.

HERBERT J. WYATT.