Feb. 6, 1951 L. H. GAREY 2,540,663

SPRAY DEVICE

Filed Nov. 25, 1946

FIG. 1.

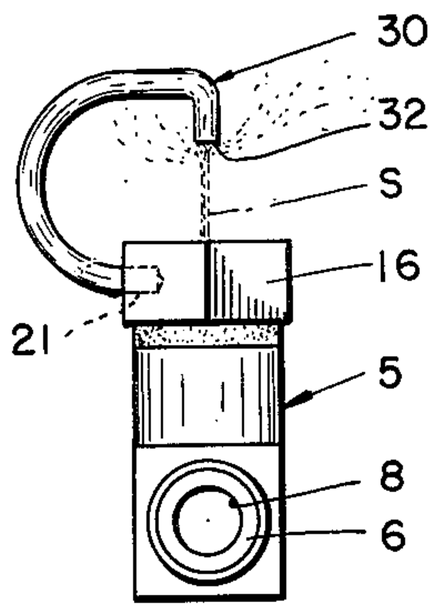


FIG. 2.

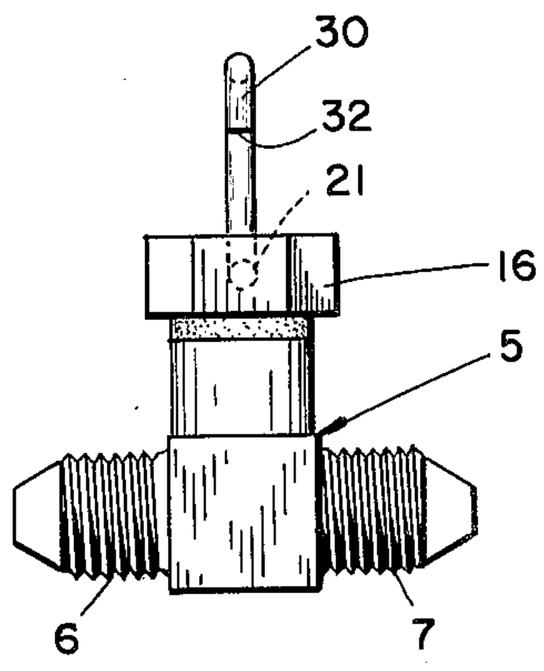


FIG. 5.

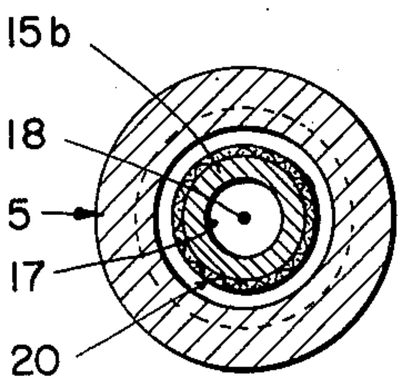


FIG. 3.

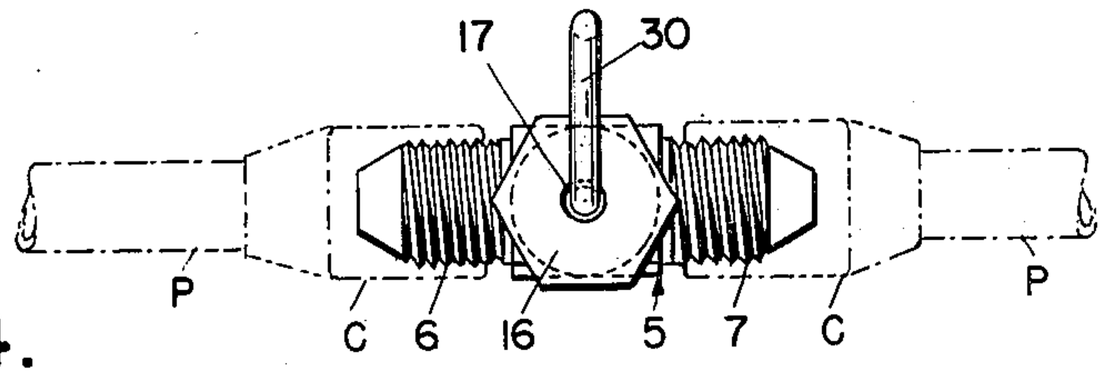


FIG. 4.

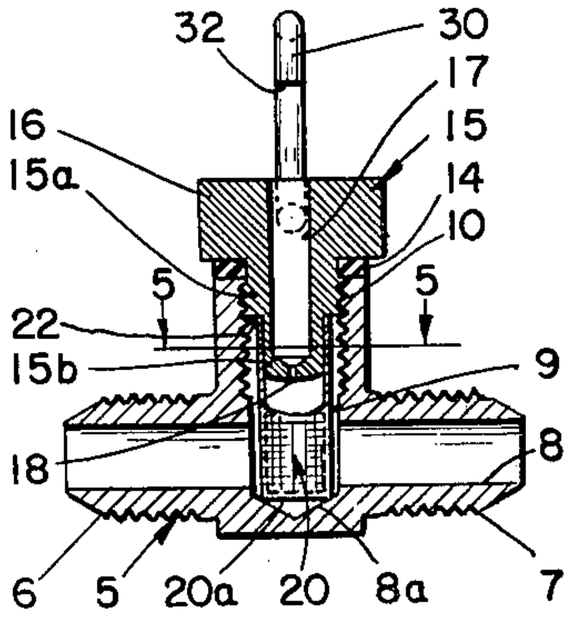
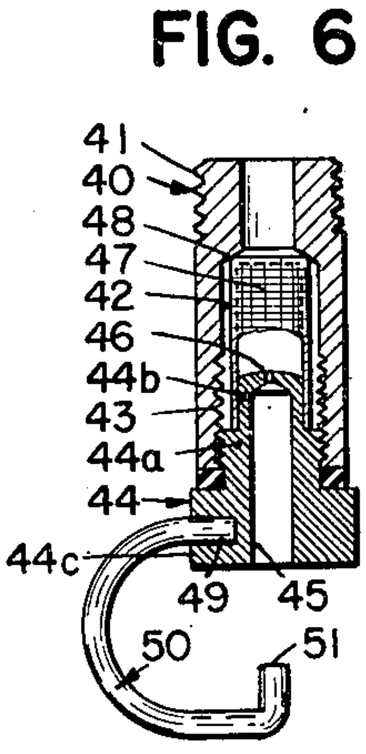


FIG. 6.



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SPRAY DEVICE

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1 Claim. (Cl. 299—121)

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My present invention has to do with spray devices and, while not necessarily limited to such use, it is particularly designed and has unusual advantages as a spray for use on wet produce display stands.

Spray devices heretofore known in the art have presented many difficulties not only in use but in their manufacture. Such devices must be sufficiently durable to withstand abuse, must be capable of delivering against an impact surface an extremely minute stream of liquid under pressure to be broken up into a fine spray, they should be capable of being adjusted to direct the spray in any desired direction or pattern, and they should be capable of spraying water which carries corrosive chemicals and abrasives. One of the chief difficulties with prior art sprays of this character has been that attending the provision of a spray orifice of sufficiently small diameter. Such orifices have to be drilled through relatively hard, thick material and frequent drill breakage has been experienced in so doing. Another difficulty has been that such small orifices become clogged with corrosion or, in some cases, where the water carries in suspension substantial quantities of abrasives, the spray orifice becomes enlarged to the point where the spray head must be replaced.

It also becomes desirable in using such sprays on wet produce stands to be able to maintain part of the display area dry while depositing controlled moisture on other parts of the area. Prior art devices have not been capable of fulfilling this need in any dependable or efficient manner.

It is an object of the present invention to provide a spray device which has peculiar advantages when used as a spray element in situations where a relatively small, controlled amount of moisture is desired to be deposited in the from of a fog-like spray.

Another object is to provide a spray device so designed and constructed as to simplify the drilling in the spray head of an extremely small spray orifice without frequent drill breakage.

Another object is the provision of a spray device so designed as to be capable of being manufactured with unusual economy.

Another object is the provision of a spray device presenting a simple, effective and easily adjustable impact member.

A still further object of the invention is to provide in a spray device novel and easily adjustable shield means for preventing spray from being deposited on any desired area which would

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otherwise normally be sprayed by the spray device.

Still further objects and corresponding advantages will become obvious from the following description of a presently preferred embodiment of the invention, for which purpose reference will be made to the accompanying drawings, wherein:

Fig. 1 is a side elevation;

Fig. 2 is a front elevation;

Fig. 3 is a top plan view;

Fig. 4 is a medial section;

Fig. 5 is an enlarged cross-sectional view on lines 5—5 of Fig. 4; and

Fig. 6 is a medial section of another variational form of my invention.

Referring now to the drawings, the numeral 5 generally designates the body of the spray device, here shown as T-shaped, having externally threaded necks 6, 7 for the reception of coupling members C by which the device is connected to pipes P constituting a liquid line through which liquid is passed under pressure.

The body has a transverse bore 8 and a vertical bore 9, which latter bore intersects and communicates at its bottom with bore 8. Bore 9 is threaded at 10 for the reception of the externally threaded medial portion 15*a* of the spray head 15. This head has a relatively thick, headed outer end portion 16 whose periphery is hexagonal for the reception of a tool to remove and install the head. The headed portion 16 is relatively thick so as to provide a strong mounting for the impact member to be described.

Spray head 15 has a longitudinal bore 17 which terminates short of the bottom end of the head, and a relatively restricted orifice or drill hole 18 is then provided in the bottom end of the head which places bore 17 in communication with the water under pressure in bore 8. Typically the orifice 18 is of a size made by a drill of a size of the order of a No. 70 drill and bore 17 is of the order of at least $\frac{5}{32}$ inch, so that the water passing therethrough will maintain a small needle-like stream until it impinges against the impact surface to be described and without striking the side walls of the bore 17 while passing therethrough. By having the restricted orifice only through the relatively thin bottom portion of the spray head, not only is it much easier to drill the orifice but less friction results so that less water pressure is necessary. A sealing gasket 14 is interposed between the head 16 and the top end of the body.

The extreme lower end portion 15*b* of the spray

head is of a still further reduced diameter to frictionally receive a tubular screen 20 having a meshed bottom wall 20*a*, the screen being of smaller external diameter than that of bore 9 and being long enough to enable it to extend across bore 8 and into the path of liquid passing through bore 8 and to space the bottom wall 20*a* below the inlet end of the orifice 18. The open top end of the screen bears against the downwardly facing shoulder 22 provided at the intersection of the threaded and reduced diameter portions of the spray head. A relatively loose fit of the screen on portion 15*b* of the spray head will suffice since the bottom of the screen rests in the recess 8*a* in the side wall of bore 8. Thus the screen may be readily installed or removed for cleaning by unscrewing the spray head and slipping the screen on or off the reduced portion 15*b*. By depending into the path of a stream passing through bore 8 the stream is interrupted and preliminarily broken up and a substantial screening surface is provided.

The impact member 30 consists of a somewhat C-shaped length of pliant material, preferably of round cross-section, mounted at its lower end in a transverse hole 21 in the head 16 and terminating at its other end in a hooked portion presenting a flat impact surface 32 in line with and facing the orifice 18. Thus the impact member may be bent so as to dispose the impact surface at different angles to the axis of the stream S passing from the orifice to deflect the spray as may be desired. The impact surface breaks the stream into a fine, fog-like spray which leaves the impact surface in a somewhat flattened umbrella shape.

In Fig. 6 I have shown a further simplified form of my invention. Here the body 40 is cylindrical and externally threaded at its upper end 41 for connection to a water line. The body has a bore 42, the bottom portion of which is of relatively enlarged diameter and is threaded at 43 for the reception of the threaded medial portion 44*a* of the spray head 44. The spray head is here shown as inverted and has an axial bore 45 which terminates short of the inner end of the head and through the inner end there is provided a reduced bore or orifice 46. The further reduced lower end portion 44*b* of the spray head has frictionally engaged thereon a tubular screen 47 whose bottom end is closed and bears against a

seat 48. The headed portion 44*c* of the spray head has a radial hole 49 in which the inner end of a somewhat C-shaped impact member 50 is mounted, the impact member terminating at its other end in a flat impact surface 51 overhanging the orifice 46. This device operates in the manner of the device of Figs. 1 to 5, inclusive.

I claim:

A spray device comprising a pipe T whose cross leg provides a straight liquid passageway and whose medial leg provides a branch outlet, a spray head threaded into the outlet end of the medial leg and having an axial bore restricted at its inlet end and being larger in diameter from said restricted inlet end to its outlet end, the inner end of the spray head being of reduced extreme diameter, a tubular screen fitted on said inner end of the spray head, the screen being smaller in external diameter than the internal diameter of the medial leg whereby to provide an annular liquid passing space therearound and extending at its inner end portion across said liquid passageway, and an impact member adjustably mounted on the outer end portion of the spray head.

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