March 12, 1935. J. A. MARTOCELLO 1,994,226

DROP TUBE AND BRACKET

Filed Oct. 29, 1929

Fig. 1.

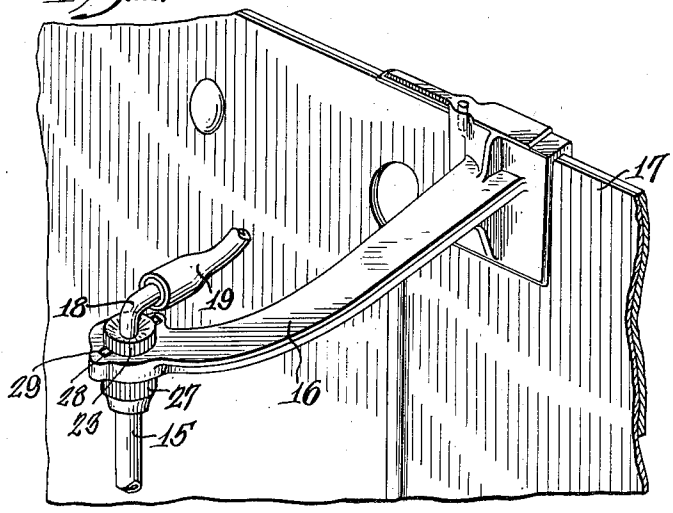


Fig. 8.

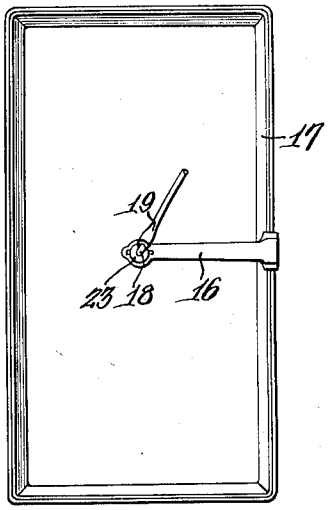


Fig. 2.

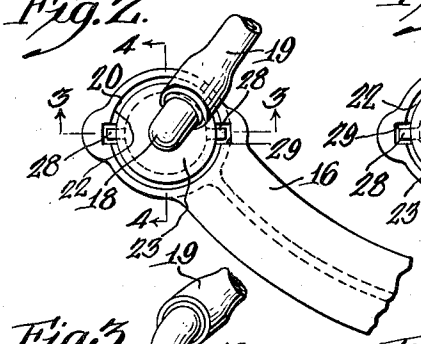


Fig. 7.

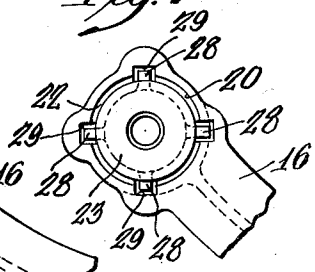


Fig. 9.

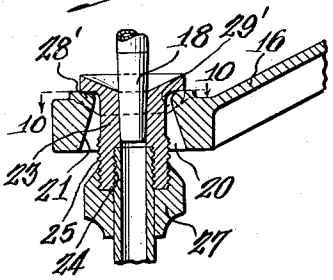


Fig. 3.

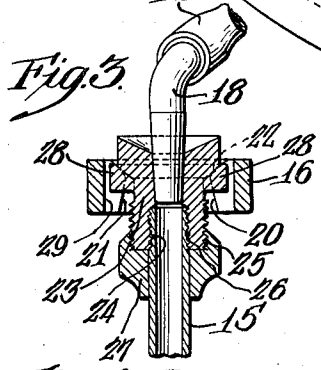


Fig. 5.

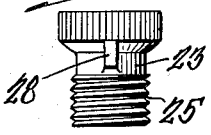


Fig. 10.

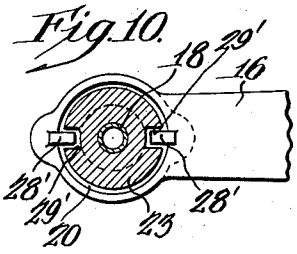


Fig. 4.

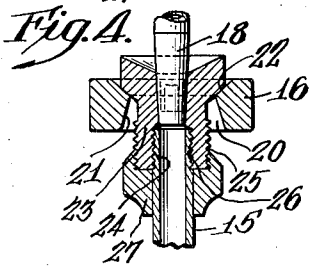
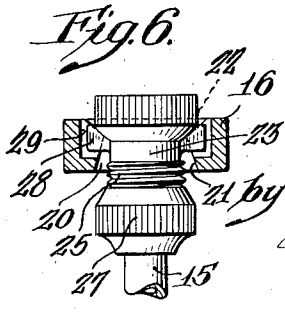


Fig. 6.



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by
Attorney.

Patented Mar. 12, 1935 1,994,226

UNITED STATES PATENT OFFICE

1,994,226

DROP TUBE AND BRACKET

Joseph A. Martocello, Philadelphia, Pa.

Application October 29, 1929, Serial No. 403,180

3 Claims. (Cl. 62—159)

My invention relates to the aerating equipment of an ice can with particular reference to cooperating connections between the air nozzle, the drop tube and the bracket that supports the tube in the can.

A purpose of my invention is to use a drop tube bracket for holding the drop tube from turning during the insertion of an air nozzle into the head or ferrule of the tube.

A further purpose is to hold a drop tube from turning in its bracket without affecting the adaptation of the tube to swing laterally in any direction.

A further purpose is to provide a drop tube bracket and the head or ferrule of a drop tube supported by the bracket with one or more radially interlocking connections, preferably providing one or more radial extensions from the head or ferrule of the tube and one or more cooperating recesses in the bracket, the recesses receiving the extensions.

Further purposes will appear in the specification and in the claims.

I have elected to show a few forms only of my invention, selecting forms that are practical and efficient in operation and which well illustrate the principles involved.

Figure 1 is a fragmentary perspective view illustrating an assembly of structure embodying my invention upon an offset bracket.

Figure 2 is an enlarged fragmentary top plan view of the assembly structure of Figure 1.

Figure 3 is a vertical section taken upon the line 3—3 of Figure 2.

Figure 4 is a vertical section taken upon the line 4—4 of Figure 2.

Figure 5 is a side elevation of a detail shown in section in Figures 3 and 4.

Figure 6 is a fragmentary side elevation of the tube head assembly in place in a bracket, the bracket being shown in section.

Figure 7 is a top plan view of structure embodying a slightly modified form.

Figure 8 is a top plan view to reduced scale illustrating my invention applied to a straight bracket instead of the offset bracket of Figure 1.

Figure 9 is a fragmentary vertical section illustrating a different form.

Figure 10 is a horizontal section taken upon the line 10—10 of Figure 9.

Like numerals refer to like parts in all figures.

Describing in illustration and not in limitation and referring to the drawing:—

In the manufacture of raw ice in cans, the water during freezing is aerated through drop tubes that remain in the cans until the freezing process is completed.

These air drop tubes depend from individual brackets that are removably mounted upon the individual cans, each tube 15 having a loose connection with its bracket 16 that adapts it to hang down vertically in the can 17 when the bracket is put in place but does not permit the tube to separate from the bracket during the handling of the tube and bracket as a unit.

After the freezing operation has been completed an air supply nozzle 18 is removed from the head end of the air tube and the can is lifted out and transferred to a thawing tank with the bracket and air tube still in place but the nozzle usually remaining at the freezing floor, at the outer end of flexible connection 19 to a suitable air lateral not shown.

The nozzle 18 is thus connected and disconnected on the freezing floor respectively before and after each freezing operation, and my invention is directed to a form of connection between the bracket and air tube that will permit more easy and tighter connection of the nozzle into the air tube, in that it will permit an operator to twist the nozzle with respect to the air tube during its insertion without taking hold of the air tube, the turning movement of the nozzle with respect to the air tube effecting more easy and tight fit between the tube and nozzle.

The end of the bracket is perforated at 20 and the tube is provided with a composite head having enlargements above and below the perforation or hole in the bracket, the tube being adapted to self-center irrespective of small angular variation in the slope of the bracket, the tube usually hanging straight down in the inner axis of the can.

The perforation or hole 20 through the bracket is desirably beveled downwardly at 21 and upwardly at 22, the downward and upward bevels respectively affording a supporting surface for centering the tube and clearance for permitting angular movement of the depending tube.

The composite head includes a ferrule 23 having a downwardly extending shank threaded internally and externally at 24 and 25 respectively, the internal threading receiving the threaded end of the tube 26 and the external threading receiving a lock collar 27 which surrounds the drop tube and provides an enlargement that prevents inadvertent removal of the drop tube from its bracket.

I provide one or more radial projections 28 at the ferrule and recesses 29 in the bracket adapted

to register and loosely fit the projections, preferably without affecting the adaptation of the drop tube to self-center, the walls of the recess normally not engaging the projections.

In Figure 2 I show two of these projections upon opposite sides of the ferrule, and in Figure 7 show four, one pair being alined at right angles to the other.

Obviously the purpose of the extension is the radial interlocking between the bracket and ferrule and I may attain this (Figures 9 and 10) by making the projection or projections 28' from the bracket extending radially inward of the perforation, providing the recesses 29' upon the ferrule.

I usually prefer to make the recesses 29 large enough to avoid engagement with the projections 28 but optionally may make the recesses definitely fit the projections as illustrated in Figure 6, also in Figures 9 and 10, and either structure may be preferable, according to circumstance, principally according to local conditions that determine the positioning of the ice cans in the freezing floor.

In view of my invention and disclosure variations and modifications to meet individual whim or particular need will doubtless become evident to others skilled in the art, to obtain all or part of the benefits of my invention without copying the structure shown, and I, therefore, claim all such in so far as they fall within the reasonable spirit and scope of my invention.

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

1. In ice can equipment, a bracket adapted to be removably mounted upon the can and having a vertical hole near its outer end, an air tube, a ferrule having an upper portion too large to pass through the hole and a lower portion surrounded by the walls of the hole, spaced from them and rigidly connected to the tube in combination with a radially interlocking connection between the ferrule and bracket in which the interlocking members are normally out of engagement but engage laterally to prevent any angular movement of the ferrule upon its own axis as during the twisting insertion of an air nozzle into the ferrule.

2. An ice can tube-supporting bracket having a hole in the end, a tube located within the hole, a support for the tube resting upon the upper surface of the bracket and having a lower part, the support extending down into the hole and spaced from the walls of the hole to allow swinging movement and a lug for the support fitting loosely into a wall connected with the hole and preventing turning movement of the support.

3. A bracket for tube support in an ice can, having a circular hole in the end of the bracket, an air tube located within the hole, a downwardly and inwardly sloping bearing support secured to the tube engaging circular walls of the hole and lugs carried by the bearing support fitting within grooves adjoining the walls of the hole whereby circular line support for the tube is secured along with prevention of rotation of the tube.

JOSEPH A. MARTOCELLO.