March 4, 1952

E. L. GOODE

2,587,834

MINNOW BUCKET

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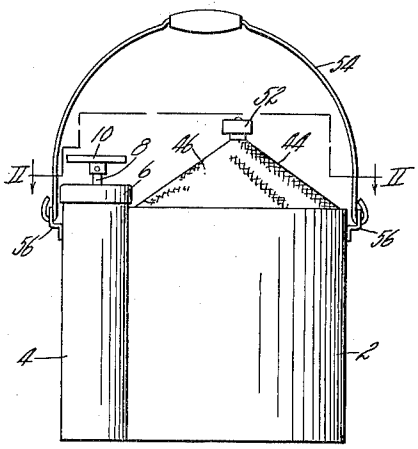


Fig. 1

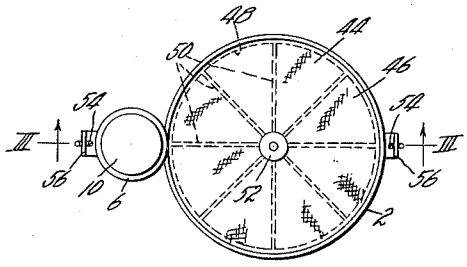


Fig. 2

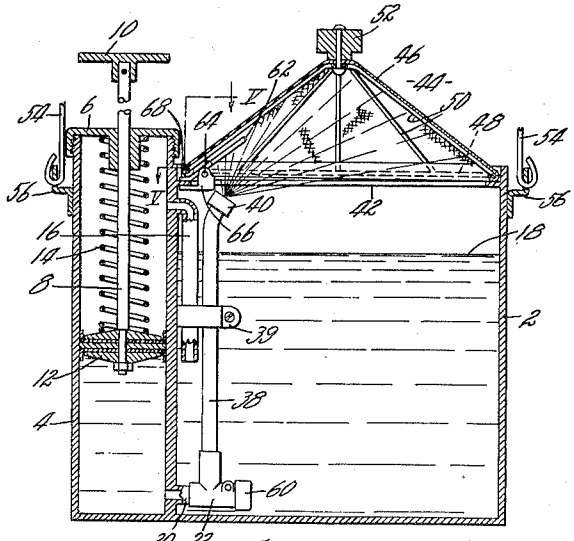


Fig. 3

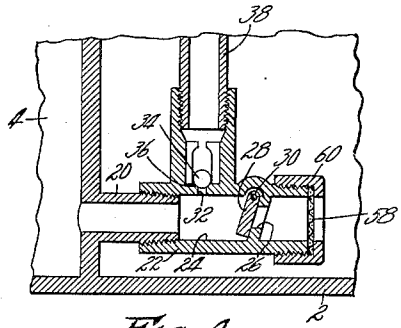


Fig. 4

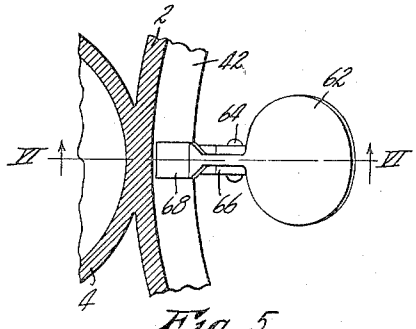


Fig. 5

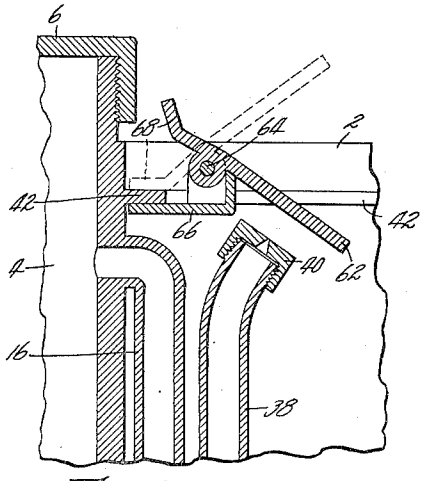


Fig. 6

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MINNOW BUCKET

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4 Claims. (Cl. 43—57)

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This invention relates to new and useful improvements in minnow buckets, and has particular reference to means for conditioning the water in a minnow bucket to sustain life in the minnows or other aquatic bait animals carried in said water.

The principal object of the present invention is the provision of a minnow bucket having means whereby the water is sprayed through the air and returned to the bucket, said water thereby being thoroughly aerated.

Another object is the provision of a minnow bucket having means whereby the water therein is directed in a finely divided spray against a fabric member exposed to the atmosphere, said fabric member thereby being cooled by evaporation, and said water thereby being thoroughly aerated and cooled.

A further object is the provision of a minnow bucket wherein water contained in said bucket is sprayed through a nozzle by the action of a piston operating in a cylinder, and a resilient member adapted to urge said piston through its stroke, said cylinder being of relatively large capacity and said nozzle being of relatively small capacity, whereby a continuous spray may be obtained by only occasionally retracting said piston to compress said resilient member.

A still further object is the provision of a minnow bucket having a removable fabric cover, means for spraying the water in said bucket against said fabric cover for aerating and cooling, and automatic means for deflecting said spray downwardly into the bucket whenever said cover is removed.

Other objects are simplicity and economy of construction, and ease and convenience of operation.

With these objects in view, as well as other objects which will appear in the course of the specification, reference will be had to the drawing, wherein:

Figure 1 is a side elevation of a minnow bucket embodying the present invention.

Fig. 2 is a sectional view taken on line II—II of Fig. 1.

Fig. 3 is an enlarged sectional view taken on line III—III of Fig. 2, with parts left in elevation.

Fig. 4 is an enlarged vertical mid-section of the check valve structure.

Fig. 5 is an enlarged fragmentary section taken on line V—V of Fig. 3, with the bucket cover removed.

Fig. 6 is a fragmentary section taken on line VI—VI of Fig. 5, showing the spray deflector in its operative position in solid lines and in its inoperative position in dotted lines.

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Like reference numerals apply to similar parts throughout the several views, and the numeral 2 applies to a cylindrical bucket or other container of ordinary form. A hollow cylindrical member 4 is rigidly fixed to the outer surface of bucket 2, being disposed parallel to the axis of said bucket. Said cylinder is closed at its lower end and projects upwardly above the top of the bucket, being provided at its upper end with a screw cap 6. A piston rod 8 disposed axially in cylinder 4 and provided at its upwardly extended end with a manual operating handle 10, projects slidably downwardly through cap 6 into cylinder 4, and carries at its lower end a piston 12 which fits snugly for sliding movement in said cylinder. A helical compression spring 14 is disposed about piston rod 8, bearing at its upper end against cap 6 and at its lower end against piston 12. Said spring is adapted to urge said piston downwardly at all times. A tube 16 disposed within bucket 2 is connected at its upper end with cylinder 4 adjacent the upper end thereof, and extends to a point well below the normal water level 18 in said bucket.

As best shown in Figs. 3 and 4, tube 20 is interconnected at one end with cylinder 4 adjacent the lower end thereof, and at its other end with a check valve body 22 disposed in and adjacent the bottom of bucket 2. Said valve body presents horizontal passageway 24 interconnected at one end with tube 20 and provided adjacent its opposite end with an orifice 26 adapted to be closed by a swinging gate 28 pivotally supported in valve body 22 at 30. Said gate is not only adapted to permit the flow of water from the bucket to the cylinder 4, but to swing closed to prevent a reverse flow. The open end of passageway 24 is provided with a screen 58 secured thereover by cap 60, said screen being adapted to prevent the passage of minnows or other foreign matter into the valve body.

Valve passageway 24 is interconnected at a point intermediate cylinder 4 and gate 28 with an upwardly extending transverse passageway 32, said passageway being adapted to be closed at its upper end by a spherical ball 34 which normally rests by gravity in a seat 6 formed in said body member. Said ball is adapted to be raised from its seat by the upward flow of water through passageway 32, but to seat by gravity to prevent any downward flow. Water flowing past ball 34 passes upwardly through a tube 38 which extends vertically upwardly to a point adjacent the top

of the bucket, and is provided at its upper end with a nozzle 40 adapted to produce a fine spray. Tubes 16 and 38 are supported intermediate their ends by a bracket 39 fixed to the inner wall of bucket 2.

Bucket 2 is provided with an inwardly extending annular flange 42 adjacent the top thereof, said flange being adapted to support a cover 44. Said cover comprises a sheet of canvas 46 or other suitable fabric fitted over a wire framework comprising a wire ring 48 adapted to rest on flange 42 and a plurality of wires 50 fixed at circumferentially spaced points to said ring and converging inwardly and upwardly. Said framework is provided at its top with a handle 52 by means of which the cover may be lifted from or placed over the bucket. The cover is thus substantially conical, but any other suitable shape could be used. This shape provides a greater surface area for the evaporative cooling hereinafter described than could be obtained with a flat cover. The minnow bucket is provided with the usual carrying bail 54 pivotally carried by brackets 56 fixed to bucket 2 and cylinder 4.

Thus when piston 12 is raised in cylinder 4 against the pressure of spring 14 by means of handle 10, a partial vacuum is formed beneath said piston, check valve ball 34 being seated thereby to prevent the downward flow of air and water through tube 38 and gate 28 being pivoted open to permit the flow of water through screen 58, orifice 26, passageway 24, and tube 20 into cylinder 4. At the same time, air disposed in cyinder 4 above piston 12 is forced through tube 16 and bubbles through the water in the bucket to aerate it. Furthermore, any water which may have leaked past piston 12 is returned to bucket 2 through tube 16. When handle 10 is released, piston 12 is urged downwardly by spring 14. The pressure thus caused in the water contained in the cylinder closes check valve gate 28 and forces ball 34 upwardly from its seat. Water thus flows upwardly through tube 38 to nozzle 40, whereby it is directed in a finely divided spray against the inner surface of cover 44. Breaking the water up into a fine spray thoroughly aerates it and cools it by evaporation. Also, the canvas covering 46 is maintained moist by the spray thereagainst, and is cooled by evaporation, thereby further cooling the water. Water draining from cover 44 of course returns by gravity into bucket 2 for recirculation.

Since cylinder 2 has a relatively large diameter and since nozzle 40 has a low capacity, the downward travel of piston 12 is quite slow, and a continuous spray may be maintained by only occasionally raising handle 10. Normally there will be sufficient leakage of air around piston rod 8 into the upper portion of cylinder 4 to prevent water from being drawn into the cylinder through tube 16, but even though it should be drawn into the cylinder, it will be returned to the bucket by the next upward stroke of the piston.

Referring to Figs. 3, 5 and 6, it will be seen that a spray deflector plate 62 is carried by bucket 2 adjacent nozzle 40, being pivotally connected by means of pin 64 to a bracket 66 welded or otherwise rigidly secured to the lower surface of flange 42. Said deflector plate is adapted to be moved by gravity from an elevated position substantially out of the path of the spray from said nozzle, as shown in Fig. 3 and in dotted lines in Fig. 6, to an operative position directly before the spray nozzle as shown in solid lines in Fig. 6, wherein it deflects the spray from said nozzle

downwardly into bucket 2. Said deflector plate is provided with an arm 68 extending oppositely from pivot 64 and adapted to lie against the upper surface of flange 42 when deflector plate 62 is in its elevated position, and to be retained in said position by the weight of cover 44 resting thereon as shown in Fig. 3. Whenever the operator removes cover 44 to obtain bait, deflector plate 62 moves automatically to its operative position, deflecting the spray downwardly, thereby preventing the loss of water and wetting of the operator.

Although a specific embodiment of my invention has been disclosed, it is readily apparent that many minor variations of construction and operation could be made without departing from the spirit of the invention.

What I claim is:

1. A minnow bucket comprising an open-topped container for water, a removable cover for said container comprising a sheet of fabric mounted over a suitable framework, means for spraying water from said container upwardly against the inner surface of said fabric cover, whereby said water is aerated and cooled, and automatic means for deflecting said spray downwardly whenever said cover is removed.

2. A minnow bucket comprising an open-topped container for water, a removable fabric cover for said container, a spray nozzle adapted to direct a fine spray of water against the inner surface of said cover, whereby said water is aerated and cooled, pumping means for delivering water from said container to said nozzle, and a spray deflector member carried by said container and adapted to be moved by gravity from an inoperative position to an operative position wherein it deflects said spray downwardly into said container, said deflector normally being retained in its inoperative position by the weight of said cover.

3. A minnow bucket comprising an open-topped container for water, a removable fabric cover for said container, a hollow cylindrical member carried by said container, a piston carried in said cylinder, manual means for retracting said piston to draw water from said container into said cylinder ahead of said piston, a spray nozzle disposed in said container and adapted to direct a spray against the inner surface of said fabric cover, said nozzle being interconnected with said cylinder ahead of said piston, and spring means for advancing said piston to supply water under pressure to said nozzle.

4. A minnow bucket comprising an open-topped container for water, a removable fabric cover for said container, a hollow cylindrical member carried outside of said container, a piston carried for sliding movement in said cylinder, manual means for retracting said piston, a spring adapted to advance said piston, tubular means interconecting the lower portion of said container with said cylinder at a point ahead of said piston through which water flows into said cylinder as said piston is retracted, a check valve in said tubular means for preventing reverse flow, a spray nozzle disposed in said container above the water level therein and adapted to direct a spray against the inner surface of said fabric cover, tubular means interconnecting said nozzle with said cylinder ahead of said piston through which water under pressure is supplied to said nozzle as said piston advances, a check valve in said last named tubular means to prevent reverse flow, an open tube interconnected at one end with said cylinder at a point behind said piston and ex-

tending at its opposite end beneath the water level in said container, and automatic means for deflecting the spray from said nozzle downwardly into said container whenever said fabric cover is removed.

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