Sept. 16, 1969 H. CYPHERT 3,467,280

FEEDING DISPENSER

Filed Oct. 30, 1967 2 Sheets-Sheet 1

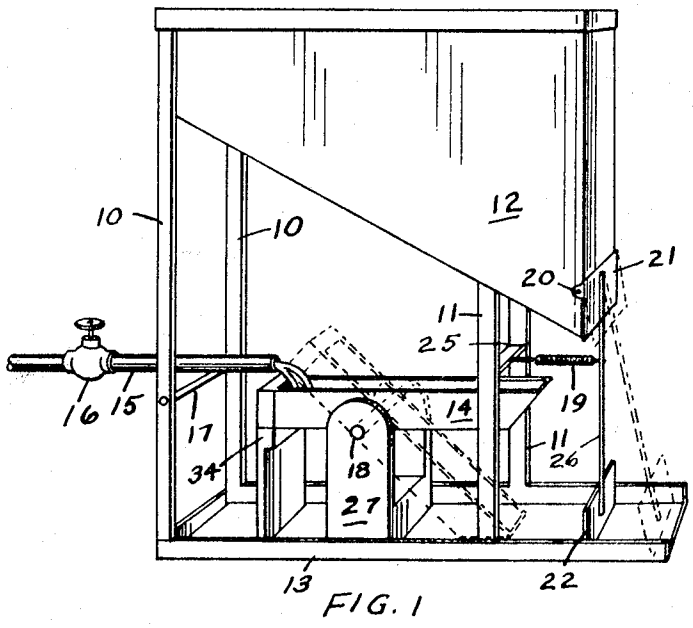


FIG. 1

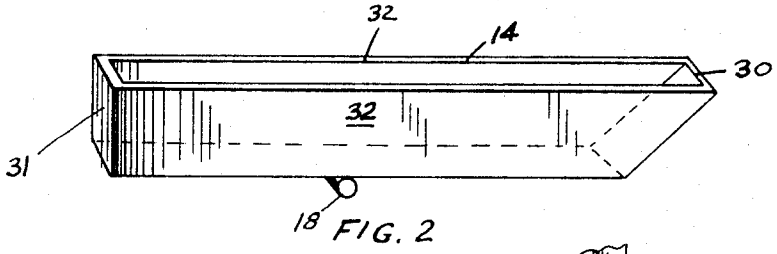


FIG. 2

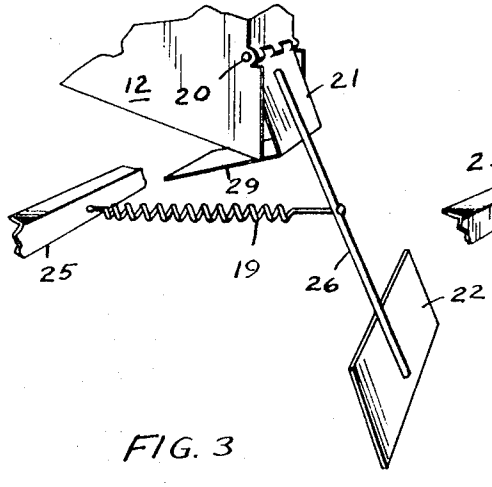


FIG. 3

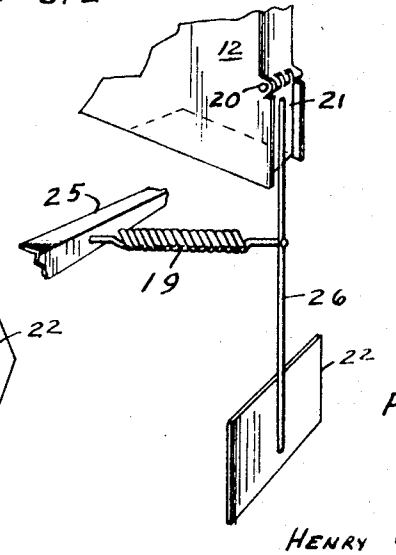


FIG 4

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FEEDING DISPENSER

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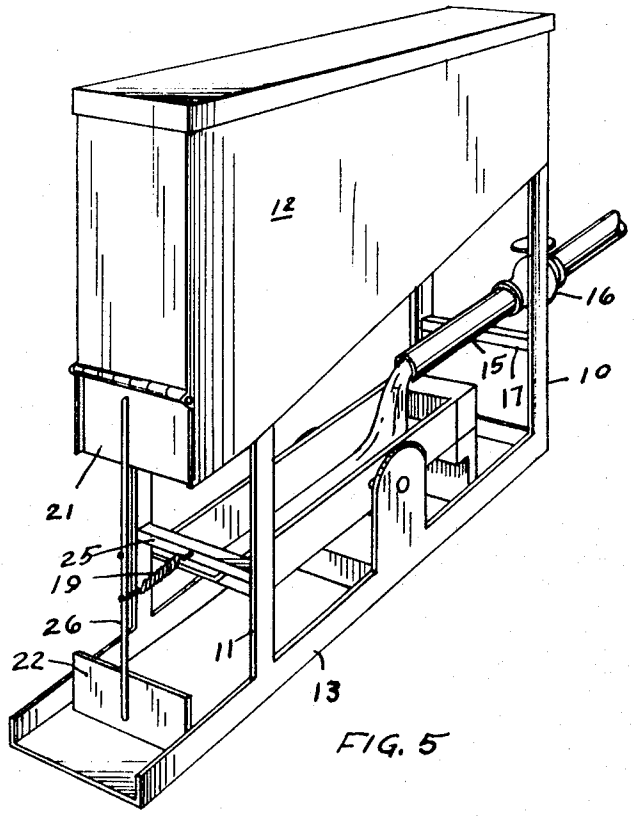


FIG. 5

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FEEDING DISPENSER

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Int. Cl. B67d 5/08
U.S. Cl. 222—57 5 Claims

ABSTRACT OF THE DISCLOSURE

The feeder disclosed herein is intended to feed chemicals such as lime, into water or other liquid to be treated. The feeder operates on the principle that the end of the pan remote from the discharge end is weighted heaviest. Thus, when the pan is empty, it will be held by gravity in horizontal position. There is more pan volume capacity on the side of the rocker shaft adjacent the discharge end. Thus, when the pan fills with water, it will overbalance the weighted end and dump the water from the pan. The water from the pan will rush into engagement with the paddle which will open the feed valve momentarily and feed a small amount of chemical into the water. When the pan is empty, the counterweight will swing it back to horizontal position.

This invention relates to feeders and, more particularly, to feeding mechanisms for feeding dry materials into liquid.

It is, accordingly, an object of the invention to provide an improved feeding device.

Another object of the invention is to provide a feeder that is simple in construction, economical to manufacture, and simple and efficient to use.

Another object of the invention is to provide a feeder that will intermittently feed small quantities of dry materials into liquid.

Another object of the invention is to provide a feeding mechanism including a trough that is counterweighted so that it will be in a generally horizontal position when it is empty or partly full of liquid and so that it will be overbalanced when it is full of liquid and when overbalanced, it will discharge the liquid into engagement with an actuating member for a valve thereby opening the valve and feeding dry material into a liquid.

With the above and other objects in view, the present invention consists of the combination and arrangement of parts hereinafter more fully described, illustrated in the accompanying drawing and more particularly pointed out in the appended claims, it being understood that changes may be made in the form, size, proportions, and minor details of construction without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawings:

FIG. 1 is an isometric view of the feeder according to the invention;

FIG. 2 is an enlarged view of the trough for feeding;

FIG. 3 is a partial view of the feeding mechanism showing the valve in open position;

FIG. 4 is a view similar to FIG. 3 showing the valve in closed position;

FIG. 5 is an isometric view taken from a different angle then FIG. 1.

Now with more particular reference to the drawings, the feeder shown has rear legs **10** and front legs **11** which are attached to and support the hopper **12**. The base **13** is fixed to the legs. The water pan **14** is supported on a rocker axle **18** which is pivotally supported in the bearing members **27**. A cross brace **17** supports the water pipe **15** which is supplied water by a valve **16**. The valve **21** is hingedly connected to the hopper by means of a hinge

20 and the rod **26** is fixed to the valve **21** and a paddle **22** is fixed to the lower end thereof. The paddle **22** is received between the two spaced base members which define a trough at the bottom of the feeder. The spring **19** urges the valve to closed position and the spring is fixed to the rod **26** and to the cross bar **25**. The valve **21** is generally L-shaped as indicated and it has a horizontally disposed portion **29** which underlies the hopper.

It is indicated that the trough **14** has a front inclined discharge end **30** and the opposite end is closed by a counterweight **31** which forms a closure between the sides **32** of the trough. It will also be noted that the trough has a greater volume on the end remote from the counterweight **31** and between the counterweight and axle **18** than adjacent counterweight **31** and between it and axle **18**.

In operation the counterweight **31** will move the trough down against the pedestal **34** which will support it in horizontal position. Then as liquid flows out of pipe **15**, into the trough or pan **14**, it will provide an ever-increasing volume of water in the end of the trough next to the end **30** until the trough is overbalanced on axle **18**. The weight of water will then move the trough to the dotted line position shown in FIG. 1. The water in the trough will then rush down between the side member **13** into engagement with the paddle **22**. Water impinging on paddle **22** will move it and will swing the valve **21** to the position shown in FIG. 3. This will allow a small amount of chemical to be fed out of the hopper **12** through the opening post valve **21** and the chemical will fall down into the water. When the water is all run out of the trough **14**, the trough and valve will move back to their position shown in FIG. 1.

The foregoing specification sets forth the invention in its preferred practical forms but the structure shown is capable of modification within a range of equivalents without departing from the invention which is to be understood is broadly novel.

The embodiments of the invention in which an exclusive property or privilege is claimed are defined as follows:

1. A feeder comprising
a hopper,
said hopper having an opening adjacent its lower part,
a feed valve,
said feed valve being hingedly connected to said hopper,
a rod attached to said feed valve,
paddle means attached to said rod,
spring means connected to said rod urging said feed valve to closed position,
a pan,
rocker means supporting said pan below said hopper,
means to feed liquid to said pan,
said rocker means supporting said pan in such a manner that said pan will remain in upright position when it is empty, and will be overbalanced and will rock to dumping position when a predetermined amount of liquid is disposed in said pan,
and means to direct liquid from said pan into engagement with said paddle when said pan is dumped whereby said paddle is forced by said liquid to move said feed valve to open position.

2. The feeder recited in claim **1** wherein said pan is an elongated member having sides and an open top,
said rocker means is disposed nearer one end than the other,
a counterweight on said pan on the end nearest said rocker whereby said pan is urged to horizontal position when said trough is empty,
said pan having a greater volume capacity on the side of said rocker remote from said counterweight than

the volume of said pan on the side of said rocker adjacent said counterweight.

3. The feeder recited in claim 1 wherein said means to direct liquid into engagement with said paddle comprises a trough formed in a lower part of said feeder,

said trough having upwardly extending sides,

said paddle extending from one side of said trough to the other and said paddle being movable by said water in said trough when said pan is overbalanced whereby said valve is opened.

4. The feeder recited in claim 1 wherein said valve extends along said hopper along an opening having a portion thereof disposed vertically and another part disposed horizontally.

5. The feeder recited in claim 1 wherein a spring is attached to said valve urging said valve to closed position.

References Cited

UNITED STATES PATENTS

1,121,846	12/1914	Kirk	222—57 X
2,174,729	10/1939	Schlack	222—57
2,188,040	1/1940	Furby	222—57
3,059,566	10/1962	Grau	222—57 X
3,223,284	12/1965	Fann	222—57

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