Nov. 9, 1965 A. M. PICKARD 3,216,397

SUCKLING APPARATUS FOR FEEDING ANIMALS

Filed Dec. 9, 1963 2 Sheets-Sheet 1

FIG. 1

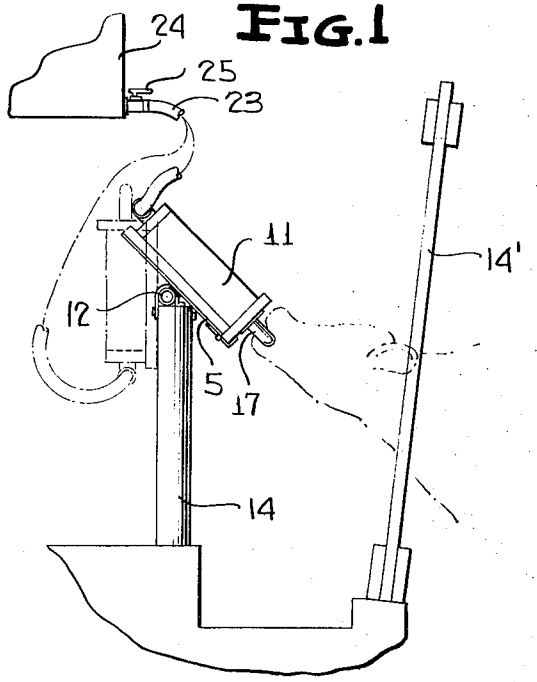
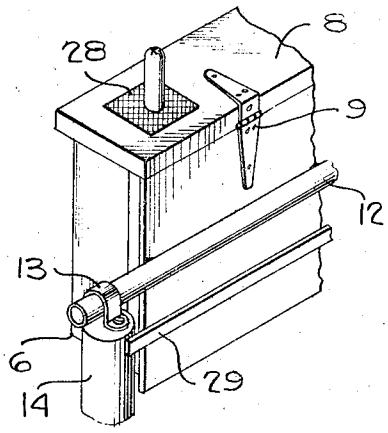


FIG. 4



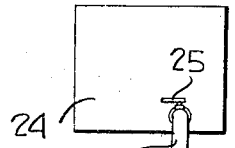
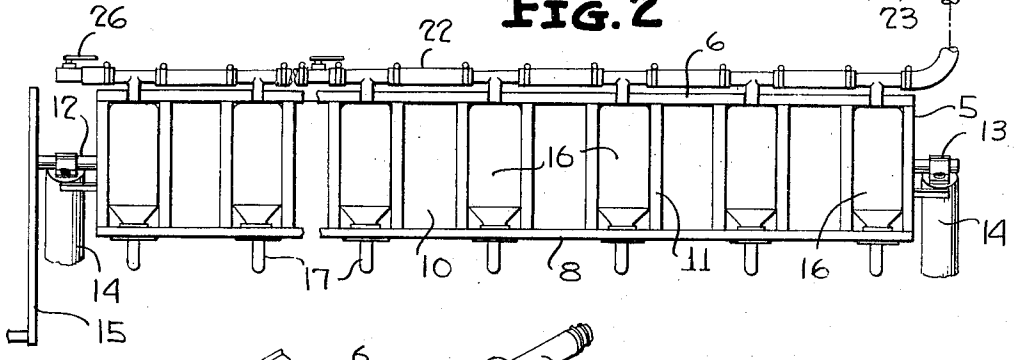


FIG. 2



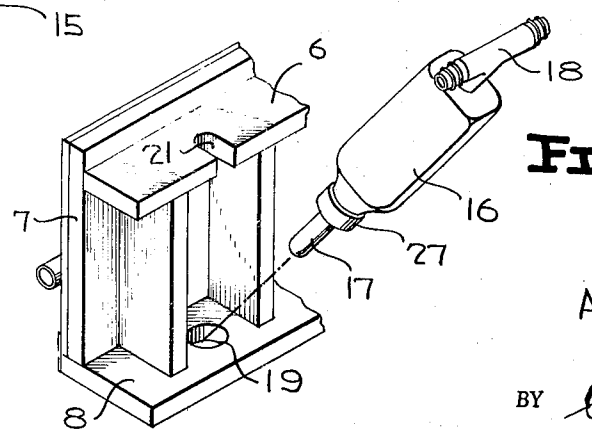


FIG. 3

INVENTOR
ALBERT M. PICKARD

BY Ralph G. Burch

ATTORNEY

Nov. 9, 1965 A. M. PICKARD 3,216,397

SUCKLING APPARATUS FOR FEEDING ANIMALS

Filed Dec. 9, 1963 2 Sheets-Sheet 2

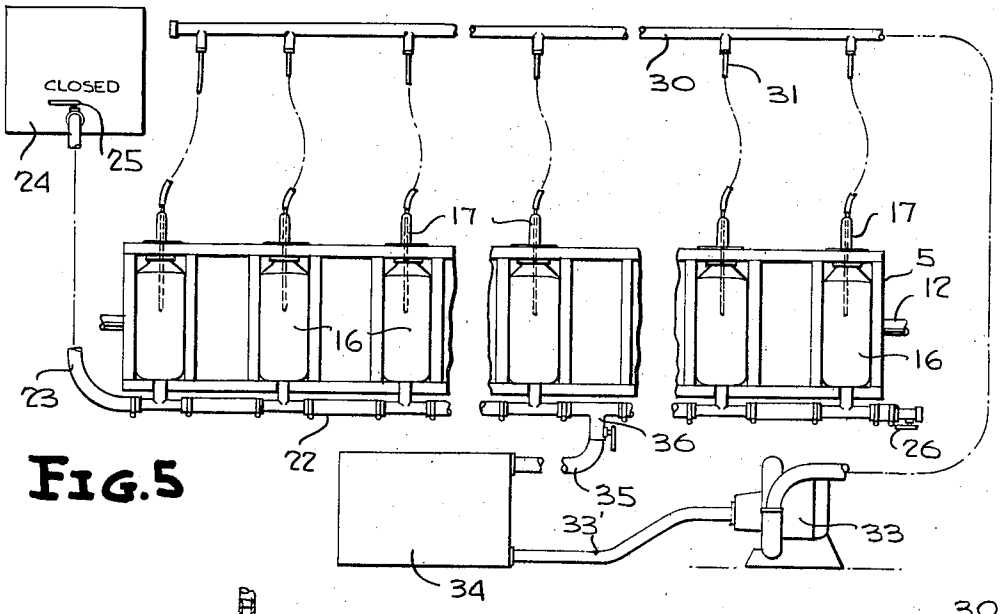


FIG. 5

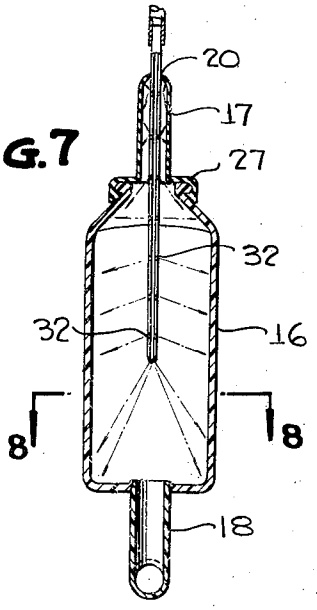


FIG. 7

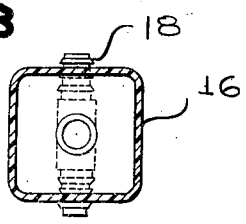


FIG. 8

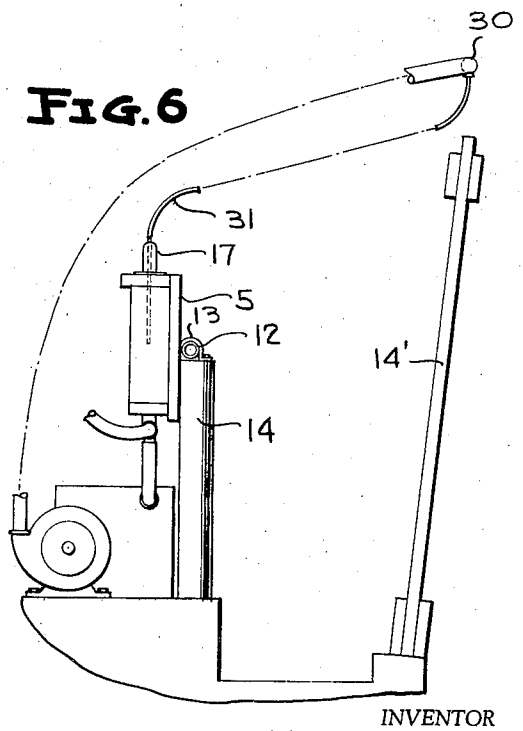


FIG. 6

INVENTOR
ALBERT M. PICKARD

BY Ralph B. Burch

ATTORNEY

United States Patent Office

3,216,397

Patented Nov. 9, 1965

3,216,397

SUCKLING APPARATUS FOR FEEDING ANIMALS

Albert Marshall Pickard, P.O. Box 657, Raymondville, Tex.

Filed Dec. 9, 1963, Ser. No. 329,112

7 Claims. (Cl. 119—71)

This invention relates to apparatus for feeding a large number of animals such as calves and the like.

It is an object of the invention to provide a rack for supporting a plurality of nursing bottles in an upright position while filling the bottles with a liquid food from the bottom and which is adjustable to invert and support the bottles in an inclined plane for feeding the calves.

A further object of the invention resides in providing means for washing the bottles with a cleaning solution without removing the bottles from the rack.

A still further object of the invention is to provide a rack for supporting a plurality of nursing bottles having a shaft extending longitudinally of the rack and rotatably mounted so that the rack can be rotated to assume various positions.

Another object of the invention is to provide a feeding apparatus which is simple and durable in construction, reliable and efficient in use and inexpensive to manufacture.

Other objects and advantages of the invention will be apparent during the course of the following specification.

In the accompanying drawings forming a part of this specification and in which like numerals are employed to designate like parts throughout the same,

FIG. 1 is an end view of the feeder with the rack disposed in feeding position,

FIG. 2 is a front elevation view of the rack,

FIG. 3 is a fragmentary perspective view of the rack viewed from the front with a bottle in position for insertion in a compartment of the rack,

FIG. 4 is a fragmentary perspective view of the rack viewed from the back,

FIG. 5 is a rear elevation view of the rack showing the bottle washing apparatus connected thereto,

FIG. 6 is an end view of the rack with the bottle washing apparatus connected therewith,

FIG. 7 is a vertical sectional view of a bottle showing the spray nozzle connected thereto for washing the bottle, and,

FIG. 8 is a cross sectional view of the bottle taken on line 8—8 of FIG. 7.

In the drawings wherein for the purpose of illustration a preferred embodiment of the invention is shown the numeral 5 denotes a rack having a top board 6, back board 7 and a base board 8 hingedly connected by hinges 9 to the lower edge of the back board. The rack is divided into a series of compartments 10 by spaced vertical partitions 11 disposed between the top board 6 and base board 8 which are affixed to the back board. A shaft 12 extends longitudinally of the rack being affixed to the outer side of the back board and the ends of the shaft are journaled in bearings 13 mounted on the top of upright posts 14 mounted on the floor of a cow barn in front of the cow stanchions 14'. Attached to one end of shaft 12 is a crank 15 for rotating the shaft to revolve the rack to various positions.

Any desired number of plastic bottles 16 for holding milk are disposed in the compartments 10 in spaced apart relation, each bottle having an elongated nipple 17 attached to one end and a T-shape pipe fitting 18 attached to the other end in communication with the bottle. An opening 19 is provided in the bottom of each compartment to receive the nipple and the end of the nipple has an orifice 20 formed by crossed slits for dispensing the milk

from the bottle. The T-pipe fitting 18 is disposed in a slot 21 formed in the front edge of the top board 6 and is connected with the T-pipe fittings of adjacent bottles by sections of pipe forming a continuous pipe line 22 connected at one end by a flexible pipe 23 to a milk supply tank 24 which is provided with a valve 25 to control the flow of milk to the pipe line. The free end of the pipe line is provided with a control valve 26 and if desired other control valves may be provided throughout the length of the pipe line. When inserting the bottles into the compartments the base board 8 is swung downwardly at a slight angle so the nipple 17 may be easily inserted in the opening 19 and the collar 27 of the nipple rests on a piece of wire mesh 28 applied over the opening on the underside of the base board so the nipple cannot be pulled off the bottle by the calf when feeding.

The shaft 12 is rotated to revolve the rack to tilt the bottles in a feeding position, as shown in FIG. 1, the rack being held in tilted position by stop arms 29 projecting from the ends of the back board which abut against the posts 14. After the milk in the bottles has been consumed by the calves, the rack is revolved by turning shaft 12 to invert the bottles after detaching the flexible pipe 23 from the pipe line. Above the rack is a fixed pipe line 30 and leading from the pipe line are a series of flexible branch pipes 31, one for each of the bottles. The end of each branch pipe is equipped with a nozzle 32 formed of a perforated copper tube which is inserted through the orifice 20 of the nipple into the bottle. One end of the pipe line 30 is connected to a centrifugal pump 33 which in turn is connected by a pipe 33' to a cleaning solution reservoir 34. The reservoir 34 is also connected by pipe 35 to a T-fitting 36 interposed in the pipe line 22 carried by the rack to provide for the continuous circulation of the cleaning solution.

In use, the rack 5 is positioned with the bottles 16 in upright position, as shown in FIG. 5, and valve 25 is opened to allow milk to flow from the supply tank 24 through pipe line 22 to supply milk to each of the bottles. When the bottles are filled to the proper level the valve 25 is closed and pipe 23 is disconnected from the pipe line. The rack 5 is then rotated by turning crank 15 to invert and dispose the bottles in an inclined plane, the rack being held in position by stop arms 29. In tilted position the nipples 17 of the bottles may be easily reached by the month of the calf, as shown in FIG. 1. After the milk in the bottles has been consumed the rack 5 is revolved to position the bottles in an upright position with the nipples at the top, and the flexible pipe 23 is disconnected from the milk supply tank and connected to a source of supply of the cleaning solution. The T-fitting 36 in the pipe line attached to the rack is then connected by flexible pipe 35 to the reservoir 34. The nozzles 32 depending from pipe line 30 above the rack are inserted through the orifices 20 of the nipples into the bottles and upon operation of the centrifugal pump 33 the cleaning solution is circulated through the pipe line 30 and dispensed through the nozzles 32 into the bottles. The cleaning solution flows from the bottles into the pipe line attached to the rack and is returned through pipe 35 to the reservoir.

It is to be understood that the form of my invention herein shown and described is a preferred example of the same and changes in the shape, size and arrangement of the parts may be made without departing from the spirit of the invention or scope of the subjoined claims.

Having thus described my invention, I claim:

1. Apparatus for feeding suckling animals comprising a rack mounted for rotation about its longitudinal axis, a series of bottles mounted in said rack, nipples attached to one end of said bottles, T-pipe fittings attached to the opposite end of said bottles, pipe sections connecting

said T-pipe fittings together forming a continuous pipe line for supplying a liquid food to said bottles, means for rotating said rack to position the bottles in an upright position while supplying the liquid food, means for supporting the bottles in an inclined plane, when inverted, to dispose the nipples in a feeding position, and means for introducing a cleaning solution through the nipples after the supply of food is dispensed from the bottles.

2. Apparatus for feeding suckling animals comprising a longitudinal rack mounted for rotation about its longitudinal axis, a series of bottles mounted on said rack, a pipe line connected to the bottom of each of said bottles for supplying food to said bottles when in an upright position, nipples attached to the top of said bottles, a second pipe line disposed above said rack for supplying a cleaning solution, flexible branch pipes extending from said second pipe line, nozzles on the ends of said branch pipes for insertion in the nipples of said bottles, and means for rotating said rack to invert said bottles and dispose the bottles in an inclined plane.

3. Apparatus for feeding suckling animals comprising a rack divided by vertical partitions to form a series of compartments, bottles disposed in said compartments having nipples attached to their upper ends, a pipe line extending longitudinally of said rack having connection with the bottoms of said bottles for supplying a liquid food to the bottles, a second pipe line above said rack for supplying a cleaning solution, branch pipes extending from said second pipe line, nozzles on the ends of said branch pipes for insertion in the nipples of said bottles for dispensing the cleaning solution in the bottles, means mounting said rack for rotation about its longitudinal axis to invert said bottles and means for limiting the rotation of said rack to hold the bottles in an inclined plane.

4. Apparatus for feeding suckling animals comprising a rack divided into a series of compartments, a shaft longitudinally of the rack and attached to the back of said rack, posts rotatably supporting the ends of said shaft, bottles mounted in the compartments of said rack, nipples connected to one end of said bottles insertable through openings in one end of said compartments, T-pipe fittings connected to the opposite end of said bottles insertable in slots formed in the other end of said compartments, sections of pipe connecting said T-pipe fittings of adjacent bottles forming a continuous pipe line to supply a food to said bottles, means for rotating said shaft to invert and dispose said bottles on an inclined plane for feeding the animals, a second pipe line above said rack having a series of branch pipes, nozzles connected to the ends of the branch pipes for insertion through the nipples of said bottles when the bottles are empty, a centrifugal pump connected to said second pipe line, and a reservoir for supplying a cleaning fluid to said pump.

5. Apparatus for feeding suckling animals comprising a longitudinal rack, a series of bottles mounted on said rack in an upright filling position, nipples attached to the upper ends of said bottles, means for introducing food into the lower ends of said bottles, means at each end of said rack, midway the height of said bottles, rotatably supporting said rack and means for rotating said rack and bottles to an inverted suckling position in an inclined plane.

6. Apparatus for feeding suckling animals as described in claim 5 wherein the means for introducing food into the bottles includes T-pipe fittings attached to the lower ends of said bottles and pipe sections connecting the pipe fittings of adjacent bottles together to form a continuous pipe line.

7. Apparatus for feeding suckling animals as described in claim 5 including a pipe line above said rack for supplying a cleaning solution and means extending from said pipe line for introducing the cleaning solution into said bottles through said nipple.

References Cited by the Examiner

UNITED STATES PATENTS

274,379	3/83	Reed	119—71
1,020,136	3/12	Freely et al.	248—103
1,400,797	12/21	Burnham	134—167
2,227,734	1/41	Meyer	141—7
2,263,069	11/41	Coyner	119—71
2,380,771	6/45	McDonald	119—14.18 X
2,506,205	5/50	Fry	119—71
2,794,420	6/57	Recchia	119—14.18

FOREIGN PATENTS

20,855	11/00	Great Britain.
219,715	8/24	Great Britain.

OTHER REFERENCES

Popular Mechanics, April 1948, p. 217.

SAMUEL KOREN, *Primary Examiner.*

ALDRICH F. MEDBERY, *Examiner.*