

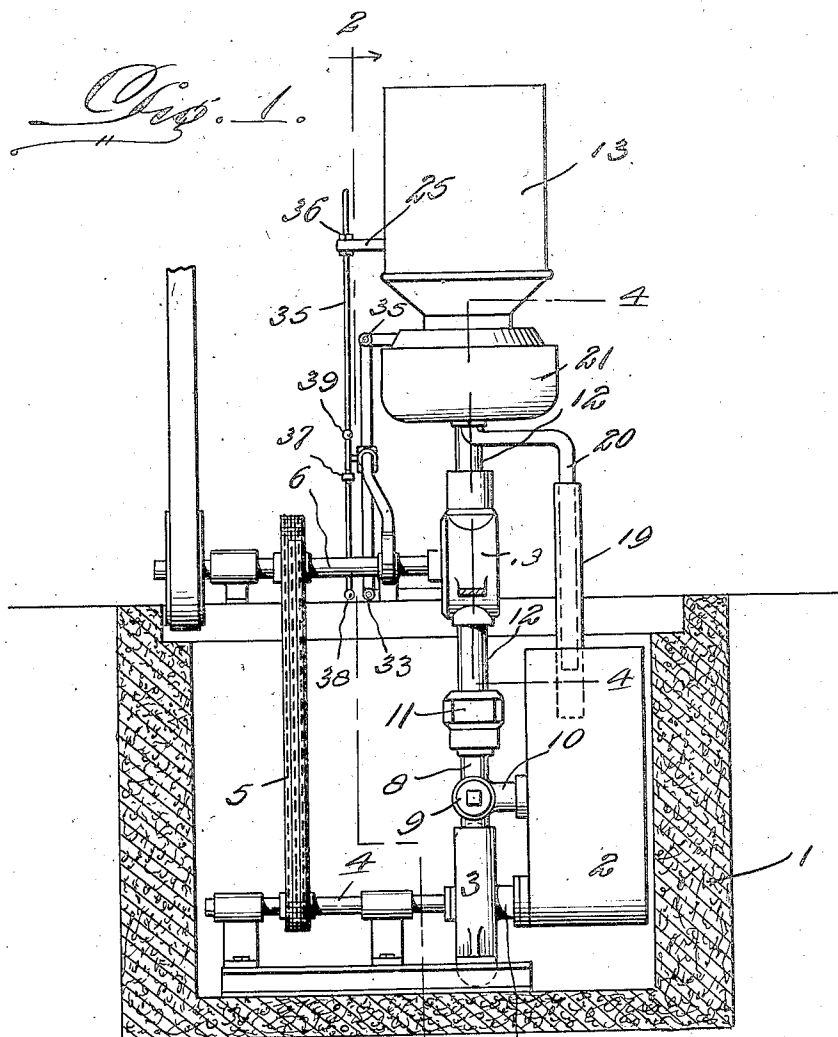
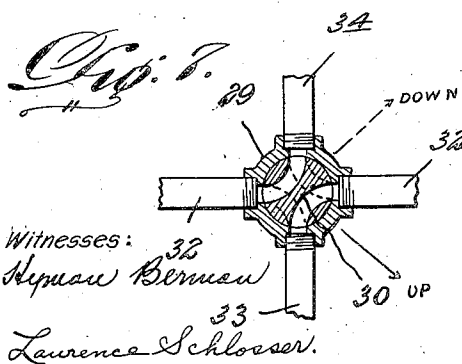
Sept. 2, 1924.

1,507,151

G. S. BENNETT ET AL
AUTOMATIC MILK CAN WASHER

Filed Jan. 10, 1922

3 Sheets-Sheet 1



Inventors
George S. Bennett,
Louis L. Bennett,

By *Laurence W. P. P. P.*
Attorney

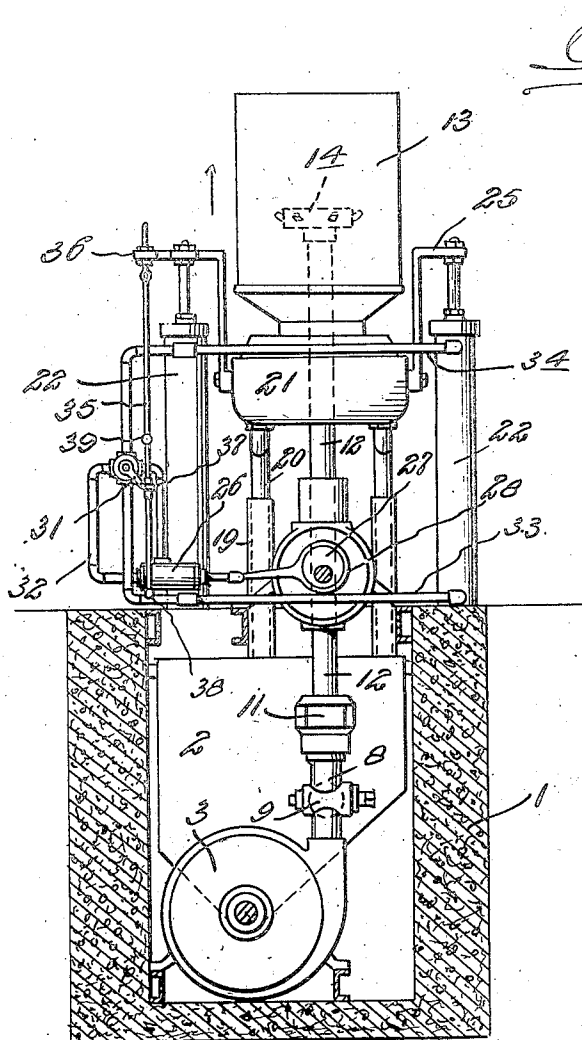
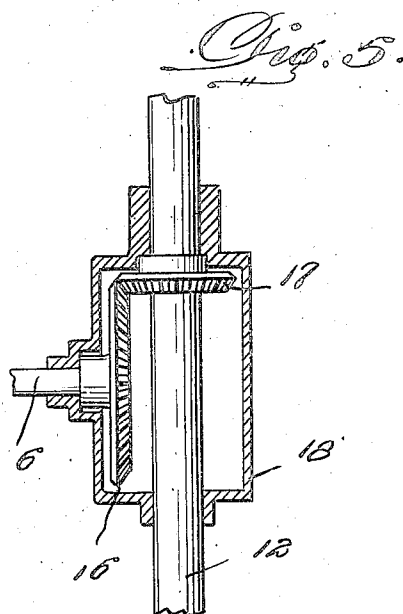
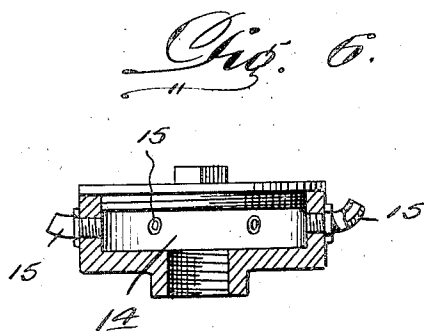
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3 Sheets-Sheet 2



Witnesses:

Hyman Berman
Lawrence Schlosser.

Inventors
George S. Bennett,
Louis L. Bennett.

By *Clarence W. Miller*
Attorney

Sept. 2, 1924.

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Fig. 3.

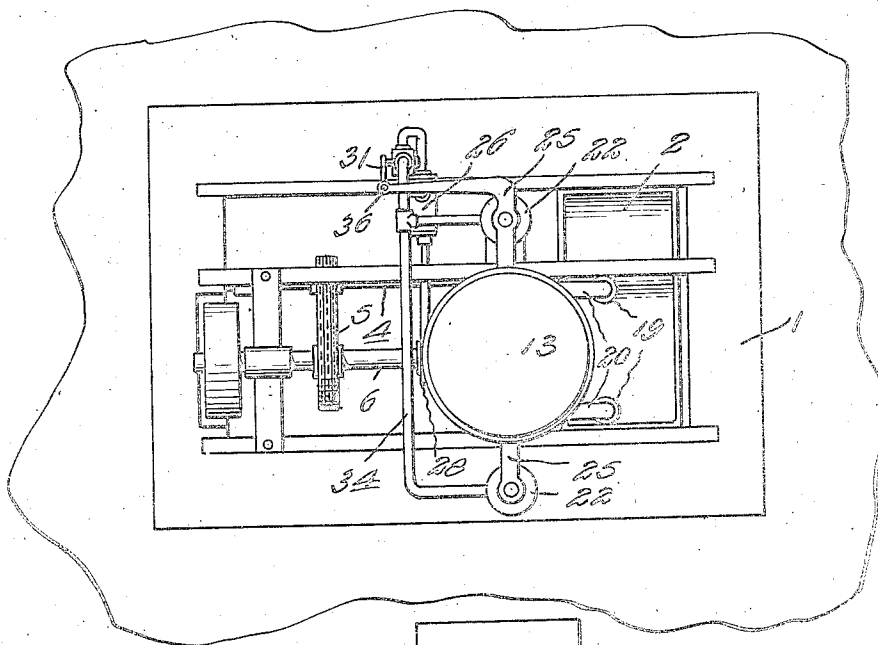
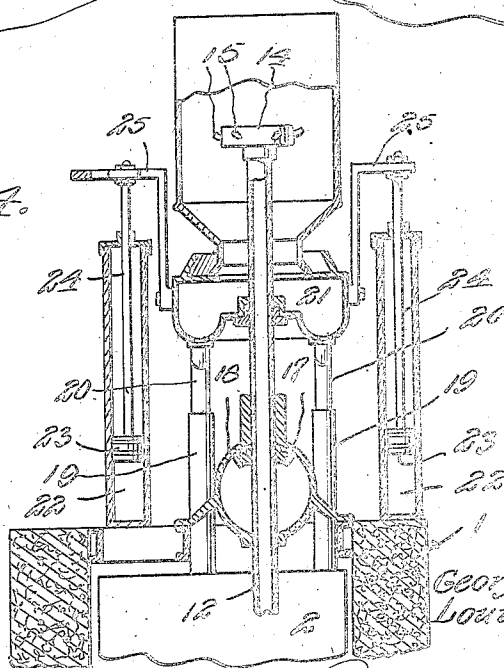


Fig. 4.



Witnesses:

Norman Bernan

Lawrence Schlosser

Inventors
George S. Bennett.
Louis L. Bennett.

Clarence W. P.
Attorney

UNITED STATES PATENT OFFICE.

GEORGE S. BENNETT AND LOUIS L. BENNETT, OF MASSENA, NEW YORK.

AUTOMATIC MILK-CAN WASHER.

Application filed January 18, 1922. Serial No. 523,172.

To all whom it may concern:

Be it known that we, GEORGE S. BENNETT and LOUIS L. BENNETT, citizens of the United States, residing at Massena, in the county of St. Lawrence and State of New York, respectively, have invented new and useful Improvements in Automatic Milk-Can Washers, of which the following is a specification.

Our said joint invention has for its object the provision of an automatic milk can washer possessed of high capacity, and one that is simple and inexpensive in construction and is well adapted to withstand the usage to which can washing apparatus is ordinarily subjected.

To the attainment of the foregoing, the invention consists in the improvement as hereinafter described and definitely claimed. In the accompanying drawings, forming part of this specification:—

Figure 1 is an elevation of our improved apparatus.

Figure 2 is a vertical section taken in the plane indicated by the line 2—2 of Figure 1.

Figure 3 is a plan view of the apparatus.

Figure 4 is a detail vertical section on the line 4—4 of Figure 1.

Figure 5 is a detail section of the driving gear and casing.

Figure 6 is an enlarged detail view of the rotary discharge head.

Figure 7 is a detail section of the control valve.

Similar numerals of reference designate corresponding parts in all of the views of the drawings.

Arranged by preference in an appropriate casing 1 is a tank 2, alongside of which is located a centrifugal pump 3 the rotor of which is fixed on a shaft 4, connected through a silent chain belt 5 with a primary drive shaft 6, designed to be connected with a motor (not shown). The induction orifice of the pump 3 is connected by a conduit 7 with the lower portion of the tank 2, and the eduction orifice of the pump is connected to a conduit 8 in which is a three-way valve 9 and from which leads a conduit 10 in communication with the interior of the tank 2. In practice the tank 2 is charged with water and comminuted abrasive material such as sand, iron turnings and pulverized brick, and when it is desired to agitate the said mass to thoroughly mix the constituents the

valve 9 is set to establish communication between the pipes 8 and 10, and the rotor of the pump 3 is actuated when, as will be readily indicated, the mixture will be rapidly circulated through the pump, pipes 8 and 10 and the tank 2 and will be thoroughly mixed. When the apparatus is to be used to wash cans, the valve 9 is set to close communication between the pipe 8 and the pipe 10 when the discharge from the pump 3 will be past the pipe 10 and upwardly through the upper portion of the pipe or conduit 8. Connected by a swivel coupling 11 to the pipe 8 is a pipe 12 that is rotatable about its axis but has no vertical movement. On the upper end of said pipe 12 and designed to rest in a can 13 positioned for cleansing is a hollow head 14, with discharge nozzles 15, directed upwardly and outwardly as best shown in Figure 6.

For the rotation of the pipe 12 we provide the intermeshed miter gears 16 and 17, fixed on the shaft 6 and pipe 12, respectively, and disposed in a casing 18, Figures 1, 2 and 5.

Connected to and extending upwardly from the tank 2 are stationary return pipes 19, and telescopically arranged in said pipes 19 are vertically-movable pipes 20 which depend from a vertically-movable hollow can-support or receptacle 21. The can 13 is designed to rest and to be retained by gravity or otherwise on the said support or receptacle 21.

In order to reciprocate the receptacle 21 and the can 13 vertically incidental to the rotation of the pipe 12 and head 14 and the supply of a head of commingled water and abrasive material to the interior of the can 13 and the passage of the water and abrasive material back to the tank 2, we provide the means best shown in Figures 2, 3 and 4. The means alluded to comprises stationary upright cylinders 22, pistons 23 movable in said cylinders and having rods 24, arms 25 on the receptacle 21 and connected to the rods 24, a pump 26 operable by the shaft 6, an eccentric 27 thereon and an eccentric strap 28, a valve casing 29, Figures 2 and 7, a rolling control valve 30 in said casing and having a crank 31, Figure 2, pipes 32 connecting the said valve casing 29 with the induction and eduction orifices, respectively, of the pump 26, a pipe 33 leading from the valve casing 29 to the lower portions of the cylinders 22, a pipe 34 lead-

ing from the said valve casing 29 to the upper portions of the cylinders 22, a rod 35 connected at 36 to one arm 25 on the receptacle 21 and extending loosely through a sleeve 37 on the valve crank 31, and abutments 38 and 39 on the rod 35, and arranged below and above the crank 31 as best shown in Figure 2. The cylinders and pipes in the system described are charged with an appropriate fluid, preferably oil, and when it is remembered that the pump 26 is actuated synchronously with the operation of the remainder of the apparatus, it will be readily understood that with the control valve 30 in the full line position in Figure 7, oil under pressure will be supplied to the lower portions of the cylinders 22 and the pistons 23 and the receptacle 21 will be moved upwardly. Then when the lower abutment 38 on the rod 35 engages the valve crank 31 and the valve 30 is shifted to the dotted line position of Figure 7, oil will be exhausted from the lower portions of the cylinders 22 and will be forced under pressure into the upper portions of the cylinders 22 with the result that the pistons 23 and the receptacle 21 will be moved downwardly. This movement will continue until the upper abutment 39 on rod 35 by cooperation with the valve crank 31 shifts the valve back to the full line position of Figure 7 when the upward movement of pistons and receptacle 21 will be repeated. In this way during the rotation of the head 14 and the supply of a strong head of water and abrasive material to the interior of the can 13, the said can will be smoothly reciprocated in a vertical direction so that all parts of the interior of the can will be thoroughly cleansed.

Experience has demonstrated that the best results are obtained when the rotor of the centrifugal pump 3 is driven at a speed of approximately 1000 revolutions per minute.

We have entered into a detailed description of the construction and relative arrangement of the parts embraced in the present and preferred embodiment of our invention in order to impart a full, clear and exact understanding of the said embodiment. We do not desire, however, to be understood as confining ourselves to the said specific construction and relative arrangement of parts inasmuch as in the future practice of the invention various changes and modifications may be made such as fall within the scope of our invention as defined in our appended claims.

Having described our invention, what we claim and desire to secure by Letters-Patent, is:—

1. In a milk-can washer, the combination of a hollow, reciprocatory can-support, liquid-operable means to reciprocate the said support, a pipe on which the said support

is reciprocable, said pipe being rotatable about its axis, means to so rotate said pipe, means to supply cleansing agent under pressure to said pipe, and telescopic conduit means connected to the can-support for the discharge of cleansing agent and dirt received from the can; the said means to rotate the pipe including a shaft geared to said pipe, and the said means to reciprocate the can-support including a pump operable by said shaft.

2. In a milk can washer, the combination of a hollow, reciprocatory can-support, liquid operable means to reciprocate the said support, a pipe on which the said support is reciprocable, said pipe being rotatable about its axis, means to so rotate said pipe, means to supply cleansing agent under pressure to said pipe, and telescopic conduit means connected to the can-support for the discharge of cleansing agent and dirt received from the can; the said means to reciprocate the can-support including a pump operable by the pipe-rotating means and also including piston cylinders, pistons connected to the support, a control valve, and means movable with the support to shift said valve.

3. In a milk can washer, the combination of a hollow, reciprocatory can-support, means including cylinders and pistons therein connected to said can support to reciprocate the said support, a pipe on which the said support is reciprocable, said pipe being rotatable about its axis, means to so rotate said pipe, means to supply cleansing agent under pressure to said pipe, and telescopic conduit means connected to the can-support for the discharge of cleansing agent and dirt received from the can; the said rotary pipe being equipped with a spray-head.

4. In a milk can washer, the combination of a hollow, reciprocatory can-support, means including cylinders and pistons therein connected to said can support to reciprocate the said support, a pipe on which the said support is reciprocable, said pipe being rotatable about its axis, means to so rotate said pipe, means to supply cleansing agent under pressure to said pipe, telescopic conduit means connected to the can-support for the discharge of cleansing agent and dirt received from the can and a spray-head at the top of said pipe having widely extending discharge nozzles arranged at various angles.

5. In a milk can washer, the combination of a hollow, open, can-supporting receptacle reciprocable vertically, a tank, a rotary pipe, a pump connected with said tank and said pipe, means to return cleansing agent from the supporting receptacle to the tank, means to reciprocate the can-supporting receptacle including a piston cylinder and a piston therein connected to the can-supporting re-

ceptacle, a second pump, a control valve, means movable with the can-supporting receptacle for shifting said control valve and pipes connecting the piston cylinder with the second pump and the control valve.

6. In a milk can washer, the combination of a hollow, open can-supporting receptacle reciprocable vertically, a tank, a rotary pipe, a pump connected with said tank and pipe, means to return cleansing agent from the supporting receptacle to the tank, means to reciprocate the can-supporting receptacle including a piston cylinder and a piston therein connected to the can-supporting receptacle, a second pump, a control valve, means movable with the can-supporting receptacle for shifting said control valve and pipes connecting the piston cylinder at opposite sides of the piston with the second pump and the control valve; the eduction orifice of the first-named pump being connected with the tank and the rotary pipe by a pipe containing a three-way valve whereby the cleansing fluid may be agitated without passing through the rotary pipe.

7. In a milk can washing machine, an upstanding pipe, a head at the top of said pipe with laterally extending nozzles adapted to enter the mouth of an inverted milk can, means to supply cleansing fluid under pressure to said pipe and head, a can-support reciprocable vertically and means to so reciprocate said support including cylinders and pistons movably mounted therein and connected to said support and means to supply fluid under pressure to said cylinders.

8. In a milk can washing machine, an upstanding pipe, a head at the top of said pipe with laterally extending nozzles adapted to enter the mouth of an inverted milk can, means to rotate said head, means to supply cleansing fluid under pressure to said pipe and head, a can-support reciprocable vertically and means to so reciprocate said support including cylinders and pistons movably mounted therein and connected to

said support and means to supply fluid under pressure to said cylinders.

9. In a milk can washing machine, an upstanding pipe, a head at the top of said pipe with laterally extending nozzles adapted to enter the mouth of an inverted milk can, means to supply cleansing fluid under pressure to said pipe and head, a can-support reciprocable vertically, means to so reciprocate said support including cylinders and pistons movably mounted therein and connected to said support, means to supply fluid under pressure to said cylinders, a control valve in said cylinder fluid supply means and means for shifting said control valve.

10. In a milk can washing machine, an upstanding pipe, a head at the top of said pipe with laterally extending nozzles adapted to enter the mouth of an inverted milk can, means to supply cleansing fluid under pressure to said pipe and head, a can-support reciprocable vertically, means to so reciprocate said support including cylinders and pistons movably mounted therein and connected to said support, means to supply fluid under pressure to said cylinders, a control valve in said cylinder fluid supply means and means automatically operated by the machine for shifting said control valve.

11. In a milk can washing machine, an upstanding pipe, a head at the top of said pipe with laterally extending nozzles adapted to enter the mouth of an inverted milk can, means to supply cleansing fluid under pressure to said pipe and head, a can-support reciprocable vertically, means to so reciprocate said support including cylinders and pistons movably mounted therein and connected to said support, means to supply fluid under pressure to said cylinders, a control valve in said cylinder fluid supply means and means moved by the can-support for shifting said control valve.

In testimony whereof, we affix our signatures.

GEORGE S. BENNETT.
LOUIS L. BENNETT.