

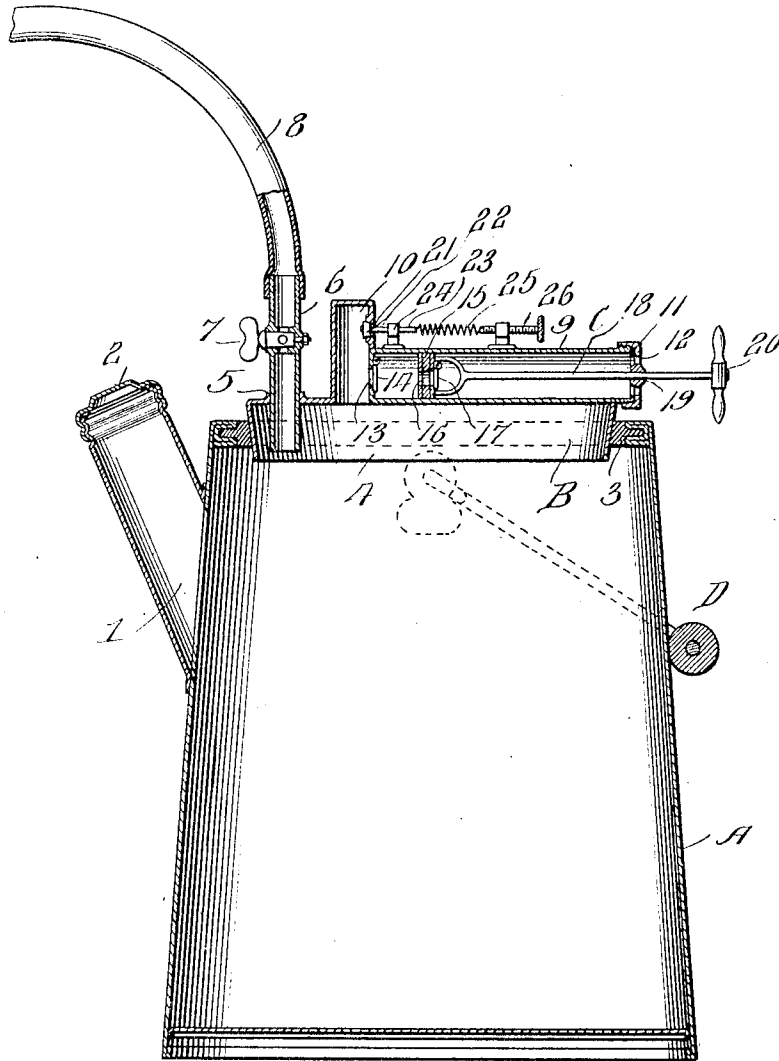
No. 892,254.

PATENTED JUNE 30, 1908.

E. HANSON.

MILKING MACHINE.

APPLICATION FILED NOV. 14, 1907.



Witnesses  
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# UNITED STATES PATENT OFFICE.

EDWARD HANSON, OF KANE, PENNSYLVANIA.

## MILKING-MACHINE.

No. 892,254.

Specification of Letters Patent.

Patented June 30, 1908.

Application filed November 14, 1907. Serial No. 402,138.

*To all whom it may concern:*

Be it known that I, EDWARD HANSON, a citizen of the United States, residing at Kane, in the county of McKean and State of Pennsylvania, have invented new and useful Improvements in Milking-Machines, of which the following is a specification.

This invention relates to a milking apparatus of that type including a pail or receptacle equipped with a pump or suitable suction-producing means.

The invention has for one of its objects to improve and simplify the construction and operation of apparatus of this character so as to be comparatively easy and inexpensive to manufacture, thoroughly reliable and effective in use, and convenient to operate.

A further object of the invention is the provision of a receptacle including a removable cover on which the pump is mounted, this being an essential feature, for the reason that the pump will thereby be oscillated from the milk and danger of flooding the pump and rendering the same unsanitary will be prevented.

A further object of the invention is the provision of an automatically actuated valve for preventing the suction from becoming so great as to render the operation painful to the cow and also for preventing the drawing of blood.

With these objects in view and others, as will appear as the description proceeds, the invention comprises the various novel features of construction and arrangement of parts which will be more fully described hereinafter and set forth with particularity in the claims appended hereto.

In the accompanying drawing, which illustrates one of the embodiments of the invention, the figure represents a central vertical section of the apparatus.

Referring to the drawing, A designates a tin or other pail or receptacle which may be conveniently provided with a discharge spout 1 that is normally closed by a dust and odor excluding cover 2. The receptacle A is open at the top and normally closed by a cover B, there being a rubber or other packing ring or gasket 3 into which the circular flange 4 of the cover snugly fits so as to prevent the admission of air. Extending through an aperture 5 of the cover is a piece of metal tube 6 removably or otherwise secured in position and containing a valve 7 for controlling communication to the receptacle through the tube.

Attached to the outer extremity of the tube 6 is a flexible conduit 8 which may be provided with the usual cups for application to the udder of a cow.

Mounted on the cover B is a pump designated generally by C, the same consisting of a cylinder 9 disposed horizontally on the top side of a cover and having its inner end communicating with a suction chamber 10, the outer end of the cylinder being provided with a cap 11 that has air discharging ports 12. Between the cylinder and chamber 10 is a suction port 13 that is controlled by a flap valve 14. Arranged within the cylinder 9 is a piston 15 provided with a central port 16 that is controlled by a valve 17, the piston being connected with the rod 18 that is guided in a central opening 19 in the cap 11 and is provided at its outer end with a handle 20 whereby the piston can be operated. In order to prevent the suction from becoming excessive, the chamber 10 has an air inlet port 21 which is normally closed by a valve 22 that opens inwardly. The valve is provided with a stem 23 movable in a guide 24 and connected with a spring 25 which holds the valve on its seat, the spring being connected with an adjusting screw 26 mounted on the pump for the purpose of permitting the tension of the spring to be varied. For conveniently transporting the apparatus, the pail is equipped with a bail or handle D.

In practice, the cups on the conduit are applied to the cow in the usual manner and with the spout closed by the cap 2, valve 22 seated, and valve 7 open, the pump is set into operation by the attendant. The suction created by the pump draws the milk through the tube 8 and discharges into the pail. When the milk is entirely pumped out, the suction will, of course, increase and thereby open the air inlet valve 21. The attendant, seeing the valve open, will be apprised of the fact that the milking operation is completed so that he can cease operating the pump. The cups are then detached from the cow and the milk removed from the port of the pail through the spout 1 after the cap is first removed therefrom.

When it is desired to clean the pail, the cover with the pump attached thereto is taken out so that access to the interior of the pail can be had through the open top.

From the foregoing description, taken in connection with the accompanying drawing, the advantages of the construction and of

the method of operation will be readily apparent to those skilled in the art to which the invention appertains, and while I have described the principle of operation of the invention, together with the apparatus which I now consider to be the best embodiment thereof, I desire to have it understood that the apparatus shown is merely illustrative, and that such changes may be made when desired as are within the scope of the claims.

Having thus described the invention, what I claim is:—

1. The combination of a receptacle capable of being rendered air-tight, a pump cylinder mounted on the vessel, a chamber communicating with the vessel, a port between the chamber and cylinder, a valve within the cylinder for closing the said port, a piston in the cylinder, a valved port in the piston, an air inlet port in the wall of the chamber, a valve opening into the chamber and arranged to normally close the inlet port, a stem on the last-mentioned valve, a guide for the stem mounted on the cylinder, an adjusting device mounted on the cylinder, and a spring disposed between the device and valve stem.

2. The combination of a receptacle, with a

removable cover therefor, a horizontally disposed pump fixedly mounted on the cover, a chamber between the pump and cover, a valve controlling communication between the pump and chamber, an air inlet valve in the chamber, a spring connected with the valve and located outside the chamber, means for adjusting the spring, and a flexible conduit connected with the cover.

3. The combination of a receptacle, with a removable cover therefor, a horizontally disposed pump fixedly mounted on the cover, a chamber between the pump and cover, a valve controlling communication between the pump and chamber, an air inlet valve in the chamber, a spring connected with the valve, means outside the chamber for adjusting the spring, a piece of tube supported in upright position on the cover, a valve in the tube, and a flexible conduit connected with the tube.

In testimony whereof I affix my signature in presence of two witnesses.

EDWARD HANSON.

Witnesses:

CHAS. A. STAFF,  
H. MELLQUIST.