

A NEW TYPE OF GOW-MILKING MACHINE.

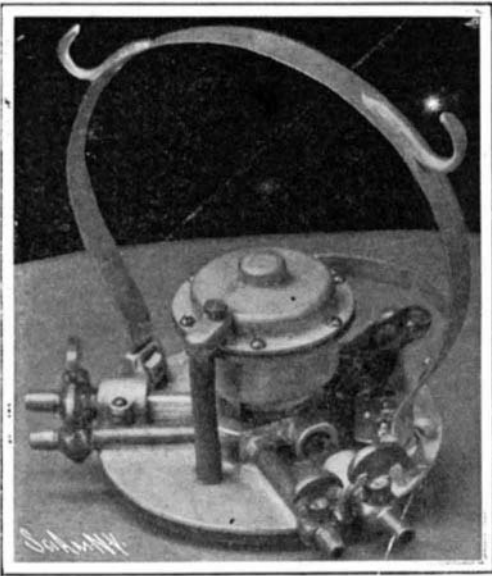
To construct the perfect milking machine has been the ambition of many inventors. In the records of the Patent Office at Washington may be found hundreds of the attempts to solve the problem. These are the results of patient thought and labor by men in nearly all the walks of life, but principally by farmers, dairymen, engineers, and scientists. Many of these inventions show great ingenuity and some are fairly practical notwithstanding the more or less slight defects that they exhibit.

One of the great advantages of the milking machine is that it supplies an exceedingly important but missing link in the chain of the sanitary transmission of milk from the cow to the consumer. Unless the most rigorous conditions of cleanliness prevail, hand-milking is a danger point in even the best of modern dairying processes. In using the mechanical milker, the milk passes directly from the cow into a closed receptacle, and the danger of the entrance of bacteria into it from the hands or clothing of the operator is, of course, entirely obviated. It is self-evident that in hand-

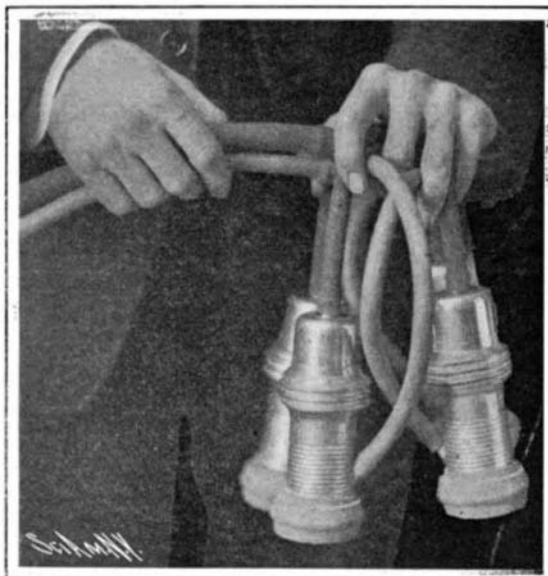


The New Milking-Machine in Use.

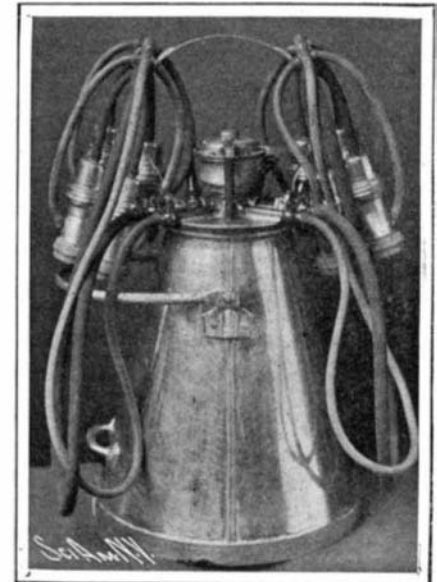
suction to the teats within the linings and at the same time applying external air-pressure to the outer sides of the linings. In this manner the teats are squeezed at the same time that the suction is applied to them. When the suction is cut off from the milk-pipes and the internal space of the cup-linings, the suction is applied to the air-pipes and the outer sides of the cup-linings, and thus the linings are drawn away from the teats against the shells of the cups, and the teats are allowed to hang nearly free in them. The vacuum in the linings is relieved quickly when the suction is cut off by the air entering the milk-pipes through the connector. In this manner pulsations are produced simultaneously inside and outside of the cup-linings, the operation alternating in such a manner that when the suction is applied to the interior of the lining to draw the milk from the teats, the external air is admitted to the exterior of the lining to squeeze the teats; and when the suction is applied to the exterior of the linings to draw the latter away from the teats, the external air is admitted to the interior of the linings to break the vacuum therein and quickly relieve the



The Pulsator and Its Connections.



The Cups, and Milk and Air Pipes.



The Entire Machine.

A NEW MILKING MACHINE.

milking the danger that the milk may become infected by disease germs from the person of the milker, is ever present. And, should the person in question be a sufferer from tuberculosis or some other infectious disease, the danger is enormously aggravated. Besides adding this sanitary safeguard, the successful milking machine must fulfill two further conditions—it must decrease the time necessary entirely to extract the milk, and it must make the operation less troublesome to the animal.

One of the latest of these machines has been invented by Loomis Burrell, of Little Falls, N. Y. It is claimed that in his invention, Mr. Burrell has succeeded in designing a machine that fulfills the conditions described above, and one that has overcome the

defects that are found in nearly all of the machines hitherto constructed. Reputable investigators fully substantiate this statement. The following is a brief description of the operation of the machine. The illustrations show the method of applying it.

When suction is applied to the milk pail or vessel, a piston-valve moves slowly up and down in its cylinder and produces pulsations in the milk and air tubes connected therewith. These pulsations take place in such a manner that when the suction is applied to the milk-pipes and through the same to the internal compartments or spaces of the flexible linings of the teat-cups, the external air is admitted to the air-pipes and through the same to the external compartments of the teat-cups outside of the linings, thereby applying the

teats from the suction. The linings are in this manner positively moved both inwardly and outwardly, and sharp and effective pulsations are produced. When the suction has been relieved on the milk-pipes and the lining has been drawn away from the teat, the cup nevertheless stays on the teat, partly because a slight vacuum remains in the interior space of the lining and partly because the flexible mouthpiece of the cup holds the latter on the teat after the cup has once been drawn up to place thereon.

The reciprocating movement of the piston valve is effected by a reversing-valve and an exhaust chamber and diaphragm. The milk-pipes are partly of glass, to show whether the flow of milk is constant, and enable the operator to control the working of the machine.



View of the New Croton Reservoir at Jerome Park, Looking from Gatehouse No. 5 Toward Westerly Wall.

COMPLETING JEROME PARK RESERVOIR.