No. 892,771. PATENTED JULY 7, 1908.

B. E. TAYLOR.

STRIKING CUP ATTACHMENT.

APPLICATION FILED DEC. 4, 1907.

Fig. 1.

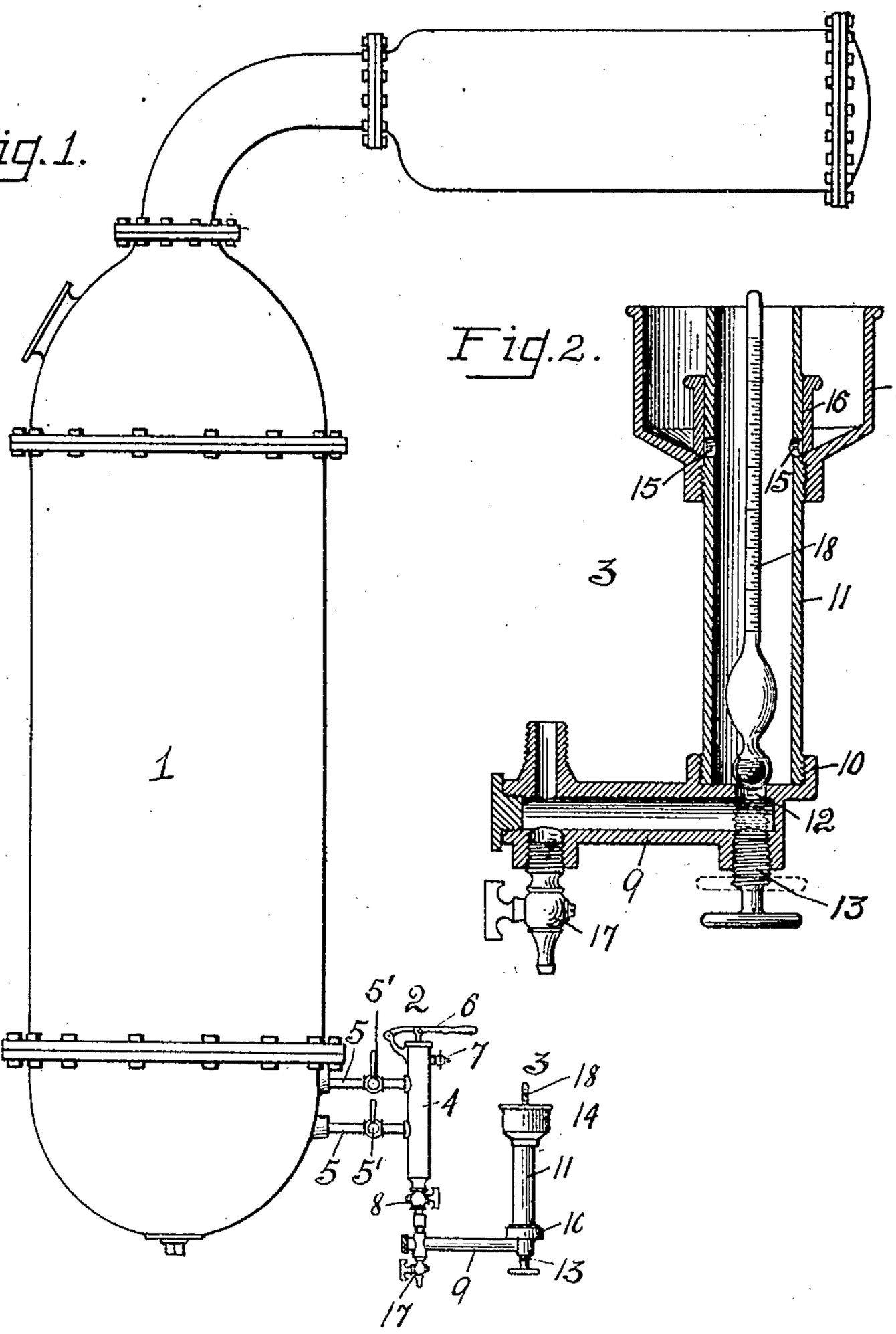

Fig. 2.

WITNESSES:

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UNITED STATES PATENT OFFICE.

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STRIKING-CUP ATTACHMENT.

No. 892,771. Specification of Letters Patent. Patented July 7, 1908.

Application filed December 4, 1907. Serial No. 405,049.

To all whom it may concern:

Be it known that I, BURT E. TAYLOR, a citizen of the United States, and a resident of Randolph, in the county of Cattaraugus and State of New York, have invented a certain new and useful Striking-Cup Attachment; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

My invention relates to an attachment for the striking-cups used in connection with vacuum pans which are employed for the condensing or evaporating of milk, cream, or the like.

In the use of what is termed the "striking-cup," which it has heretofore been customary to employ alone for taking samples from the condensing or evaporating pan, a sample is first drawn into the cup and then from it into a testing vessel adapted for the receiving of a hydrometer. After the reading has been taken, the drawn liquid is thrown away and a fresh sample taken, this being repeated until the proper reading is had.

The object of my invention is the provision of a simple attachment for the striking-cup into which the sample may be drawn to receive a reading, after which it may be quickly returned to the evaporating pan by atmospheric pressure, due to the vacuum therein, and the operation instantly repeated to receive another reading, thus obviating the spilling and wasting of the liquid, and enabling samples to be taken much more rapidly than in the old way and making it possible to obtain much better results.

The operation, construction, and arrangement of the parts of the invention are fully described in the following specification, and illustrated in the accompanying drawings, in which,—

Figure 1 is a side elevation of an evaporating-pan and attached striking-cup having the attachment comprising my invention associated therewith, and Fig. 2 is a central vertical section of my attachment with a hydrometer positioned therein.

Referring to the drawings, 1 designates the condensing or evaporating pan of usual construction, 2 the striking-cup, and 3 the striking-cup attachment comprising my invention.

The usual construction of striking-cup comprises the vertical chamber 4, which connects with the interior of the pan 1 through the two tubes or pipes 5, 5 having the valves 5′, 5′ therein and has its top closed by a cap which is carried by the hinged handle 6. A cock 7 is located at the upper end of the chamber 4 and when opened provides an air-vent thereto. Communicating with the lower end of the chamber 4 through a valve 8 at its lower end is a laterally extending channeled arm 9, which is shown as having its outer or free end formed on its top with a socket 10 into which the lower end of the tube 11 is threaded or otherwise suitably secured. The chamber formed by the tube communicates at its bottom with the channel in the arm 9 through an opening 12, which if desired may be closed by a valve-member 13, being turned up to seat against its lower rim. Threaded or otherwise closely secured to the tube 11 adjacent to its top and flaring outwardly and upwardly therefrom is the member 14, which forms an annular cup or receptacle around the tube for catching the overflow therefrom. This overflow is returned to the interior of the tube through openings 15 provided in its casing at the bottom of the overflow cup, said openings being normally closed by the ring-valve or sleeve 16, which encircles the tube for free longitudinal movement thereon. A cock 17 is tapped into the arm 9 to enable a sample to be taken in the old way if desired.

In taking a sample from the pan 1 when my attachment is used the valves 5′, 5′ are both opened to permit the sample to be drawn into the striking-cup. These valves are then closed and the cock 7 and valve 8 opened to allow the milk or other liquid to flow through the channeled-arm 9 into the tube 11 of the attachment, the cock 17, of course, being closed and the valve 13 opened for such purpose. As soon as the liquid rises to the top of the tube 11, or as soon as it overflows enough to run off the foam over the top of the tube into the overflow-cup, the valve 8 is closed and the hydrometer 18 then placed within the tube to take the reading. In practice the hydrometer is preferably allowed to remain in the tube during the taking of all the samples so that the reading can be taken the instant the liquid rises

to the top of the tube. As soon as the reading is taken the vent-cock 7 is closed and the lower valve 5′ leading to the pan and the valve 8 in the bottom of the striking-cup opened simultaneously and the liquid in the attachment is drawn back into the pan due to the vacuum therein and the atmospheric pressure within, thus completing the operation. Should the first sample not be right subsequent samples may be rapidly taken in the same manner until the proper specific gravity is obtained. When the last sample has been taken the ring-valve 16 is raised to permit the overflow in the cup 14 to run into the tube 11 through the openings 15 and be drawn back into the pan with the last sample. If it is desired to draw a sample that is not to be returned to the pan the cock 17 is opened to allow the liquid to flow through the latter into a cup or other receptacle instead of into the tube 11. The rapidity with which samples can be taken by the use of my attachment over the old way makes it possible to get much better results without the spilling or wasting of any liquid.

While I have shown and described a particular construction of my attachment, I wish it understood that I do not limit myself to such construction or arrangement of the parts, as obvious modifications will occur to persons skilled in the art; and also that I do not restrict its use in connection with any particular construction of striking-cup or connection between it and the pan 1, so long as such striking-cup or connection is operative to draw samples from and return them to the pan.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent, is,—

1. The combination with a striking-cup, of a hydrometer-receiving receptacle having valve-controlled communication with the striking-cup, and an overflow-cup associated with the receptacle and having valve-controlled communication at its bottom portion with the receptacle.

2. The combination with a striking-cup, of an attachment therefor comprising a hydrometer-receiving receptacle having valve-controlled communication with the striking-cup, and a member associated with the receptacle and forming an annular overflow chamber around the same, said chamber having communication at its bottom with the receptacle through the wall thereof, and a ring-valve encircling the receptacle to normally close such communication.

3. The combination with a vacuum-pan and a striking-cup in valve controlled communication therewith, of a channeled arm in valve-controlled communication with the lower end of the striking-cup and extending laterally therefrom, and a hydrometer-receiving receptacle carried by said arm in communication with its channel whereby fluid may flow by gravity from the striking-cup into the receptacle and be returned to the vacuum-pan by atmospheric pressure.

4. The combination with a vacuum-pan and a closed chamber in double valve-controlled communication with the pan, said chamber having a valved air-vent at its upper portion, of a hydrometer-receiving receptacle, a valve-controlled tube connecting the lower end of the receptacle with the lower end of said chamber whereby liquid may flow by gravity from the latter to the former, and a cock for enabling liquid to be drawn from the chamber without entering said receptacle.

In testimony whereof I have hereunto signed my name to this specification in the presence of two subscribing witnesses.

BURT E. TAYLOR.

Witnesses:
W. R. Clarke,
J. L. Hunt.