(No Model.)

R. STODDARD.

CENTRIFUGAL MILK TESTER.

No. 484,685. Patented Oct. 18, 1892.

Fig. 1.

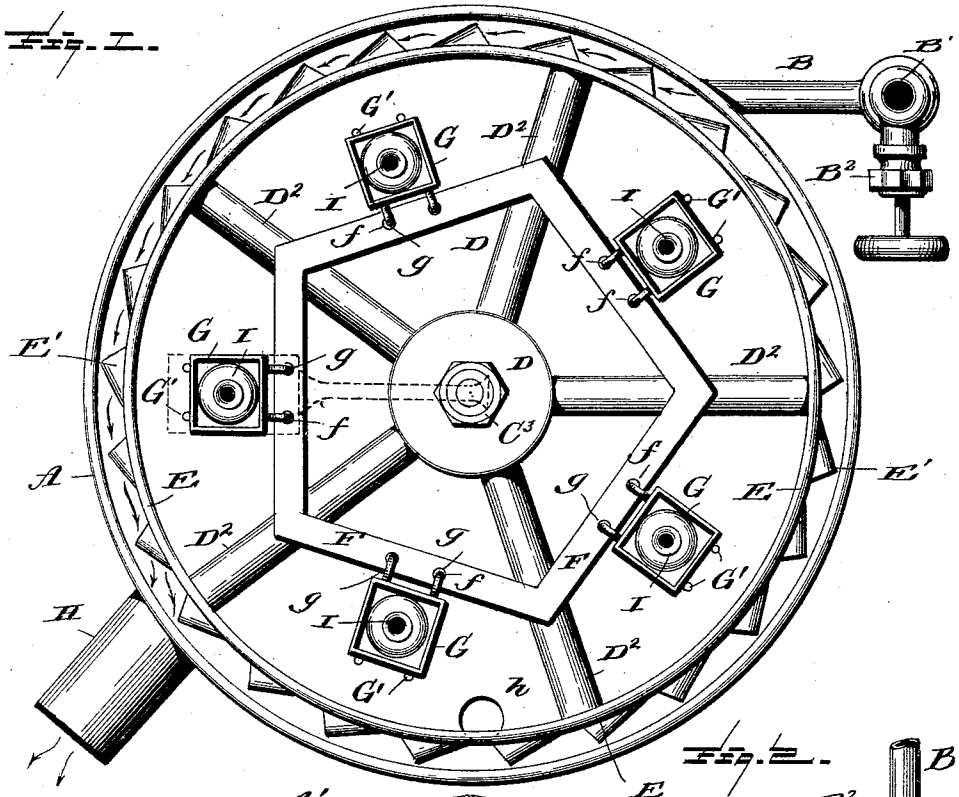
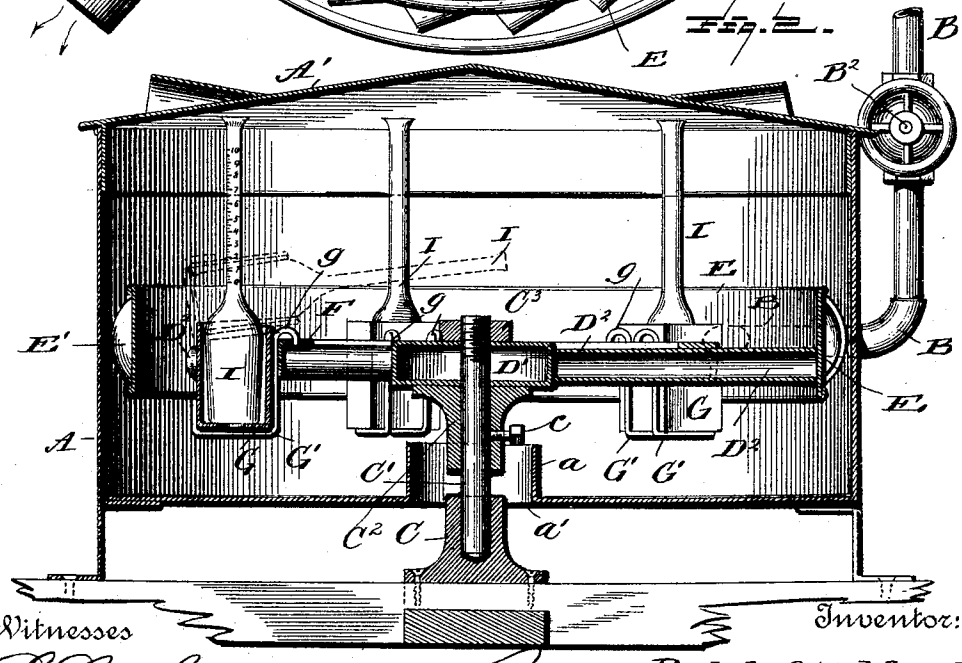


Fig. 2.



Witnesses

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UNITED STATES PATENT OFFICE.

RALPH STODDARD, OF RUTLAND, VERMONT.

CENTRIFUGAL MILK-TESTER.

SPECIFICATION forming part of Letters Patent No. 484,685, dated October 18, 1892.

Application filed May 12, 1892. Serial No. 432,747. (No model.)

To all whom it may concern:

Be it known that I, RALPH STODDARD, a citizen of the United States, residing at Rutland, in the county of Rutland, State of Vermont, have invented certain new and useful Improvements in Centrifugal Milk-Testers, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to certain new and useful improvements in milk-testers of that class in which is employed a revolving part provided with pivotally-supported receptacles for the test-bottles; and it has for its objects, among others, to improve upon this class of devices, to render the operation less laborious and more rapid, and construct a machine for use in butter and cheese factories where steam is available at a much less expense and more readily applied than shafting and belting. I construct the revolving wheel and so mount it as to be revolved by a steam-jet impinging thereagainst or against buckets on its periphery. The hot steam comes in contact with the bottles when filled with the milk and acid for the test and keeps them hot and dispenses with the necessity of adding hot water, as has been required heretofore, or the placing under the case of a lamp or other heater to keep the bottles and their contents hot, and, furthermore, it has been found that a better test is secured than when the hot water is employed.

Other objects and advantages of the invention will hereinafter appear, and the novel features thereof will be specifically defined by the appended claims.

The invention is clearly illustrated in the accompanying drawings, which, with the letters of reference marked thereon, form a part of this specification, and in which—

Figure 1 is a top plan of my improved machine with the cover removed. Fig. 2 is a central vertical section through the same with the cover in position.

Like letters of reference indicate like parts in both of the views.

Referring now to the details of the drawings by letter, A designates a suitable receptacle, which is fixedly mounted in the desired position in any suitable manner. It may be of any desired material and of any required capacity. It is provided with a cover A′, having a depending flange, as seen in Fig. 2, to fit snugly within the upper end of the receptacle, so as to close the same as tightly as possible and prevent escape of steam at this point.

B is a pipe arranged to deliver steam into the said receptacle at the desired point, and it is connected with a pipe B′, designed to be connected with any suitable source of steam, being provided with a valve B^2, by which the supply may be regulated and by which it may be cut off entirely.

The bottom of the receptacle A is provided centrally with an upwardly-extending flange *a*, surrounding a central opening *a′*, and extending within this opening is a step C, suitably secured to any desirable fixed part, and in the socket of this step is mounted to revolve the vertical spindle C′. This spindle passes through a sleeve C^2, which is secured thereto adjustably, as by a set-screw *c*, and the spindle passes also through the central hollow portion D′ of the spider D. From this central portion extend the radial arms D^2, which are preferably hollow and to the outer ends of which is secured the rim E, the outer periphery of which is provided with the closely-arranged buckets E′, which are in close proximity to the vertical wall of the receptacle A, as seen in Fig. 1. The upper end of the spindle is screw-threaded, as seen in Fig. 2, and C^3 is a nut upon this end, above the central portion of the spider, to hold the parts together.

On the arms D^2 is supported a light polygonal frame F, to the center of each arm of which is pivotally and detachably secured a cup or receptacle G. This receptacle is formed, preferably, of thin material and is strengthened by the wires G′, which pass under the bottom of the cup and along the front side and also along the back side, with the rear ends turned over to form hooks *g*, which are designed to be detachably held or engaged in openings *f* in the arms of the frame F, permitting ready removal of the cups when desired and allowing of their turning on the said hooks as pivots as the frame is revolved.

Substantially diametrically opposite the steam-inlet is the exhaust-pipe H, which may be arranged to lead to any suitable place for

carrying off the exhaust-steam. The bottom of the case or receptacle A should be provided with a suitable outlet for the removal of the water of condensation. Such is shown at *h* in Fig. 1.

In operation the milk is placed in the test-bottles I, of known construction, and the acid added in the usual way, the bottles being set in the cups, as shown. Steam is then admitted through the steam-supply pipe or pipes, and as the steam strikes the buckets on the outer periphery of the rim of the wheel it causes the same to revolve in the direction indicated by the arrows in Fig. 1, and any desired speed may be attained, according to the amount of steam admitted through the valve. The cover being in position, the steam will enter the cups and surround the bottles and keep the same hot, thus dispensing with the necessity of supplying hot water during the operation. The steam thus serves not only as a propelling power, but also by being confined within the casing it serves to keep the bottles and their contents sufficiently warm to insure satisfactory results.

The operation of separating and testing the milk is too well known to require a description herein.

What I claim as new is—

1. A bottle-holder having strengthening-wires secured thereto and extended along one side across the bottom and upon the opposite side and terminating in hooks, by means of which the holder is designed to be pivotally supported, substantially as specified.

2. A rotatably-mounted skeleton wheel provided with a rim having buckets and adapted for rotation by a steam-jet impinging thereagainst, combined with test-holding bottles provided with hooks, by which they are pivoted and detachably mounted upon said wheel between the periphery and hub thereof, substantially as specified.

3. The combination, with the case having a central flanged opening, of the step located beneath said opening, the spindle supported in said step, the spider through the hub of which the spindle passes, a nut on the spindle above the hub and a collar on the spindle below the hub, and a rim provided with buckets carried by said spider, as set forth.

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

RALPH STODDARD.

Witnesses:
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