

(No Model.)

2 Sheets—Sheet 1.

F. B. FARGO.
MILK TESTER.

No. 478,099.

Patented July 5, 1892.

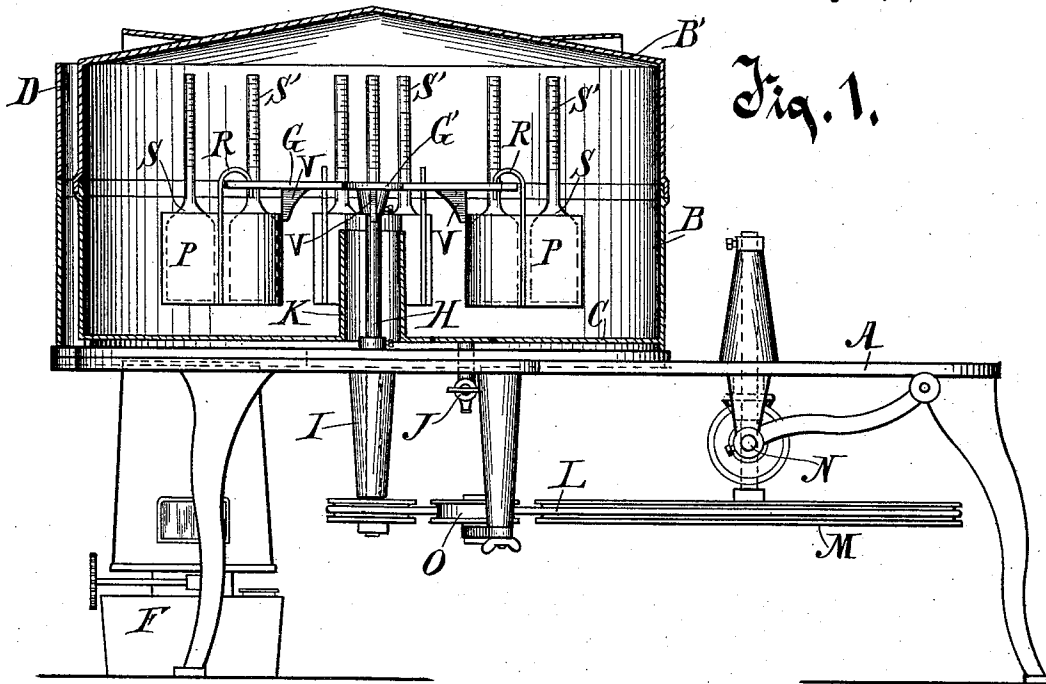


Fig. 1.

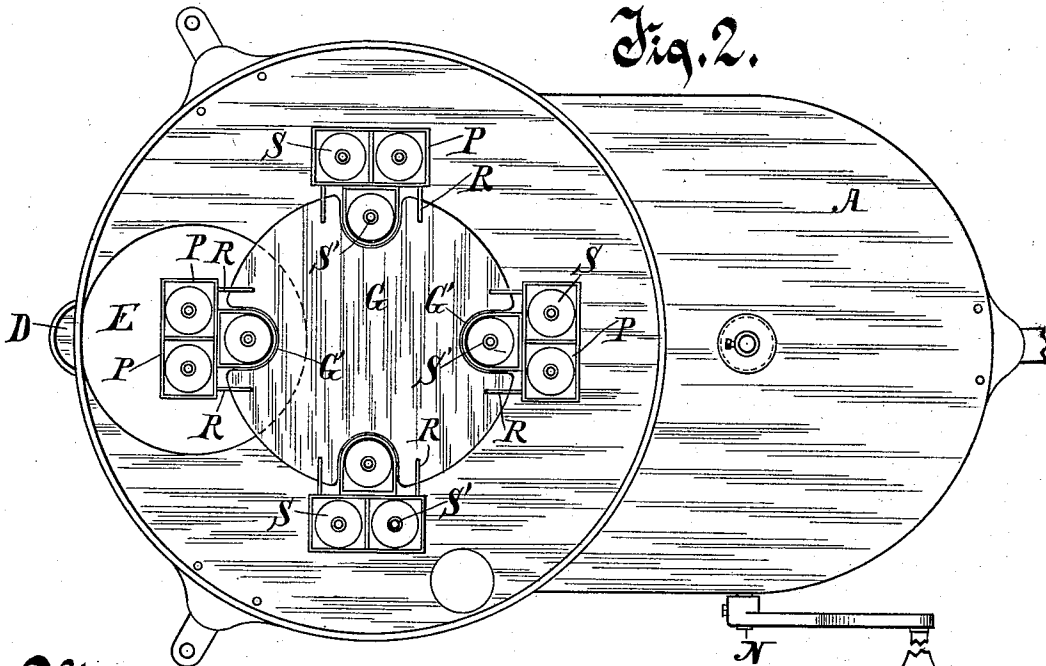


Fig. 2.

Witnesses.

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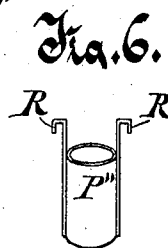
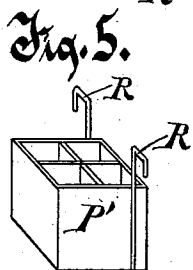
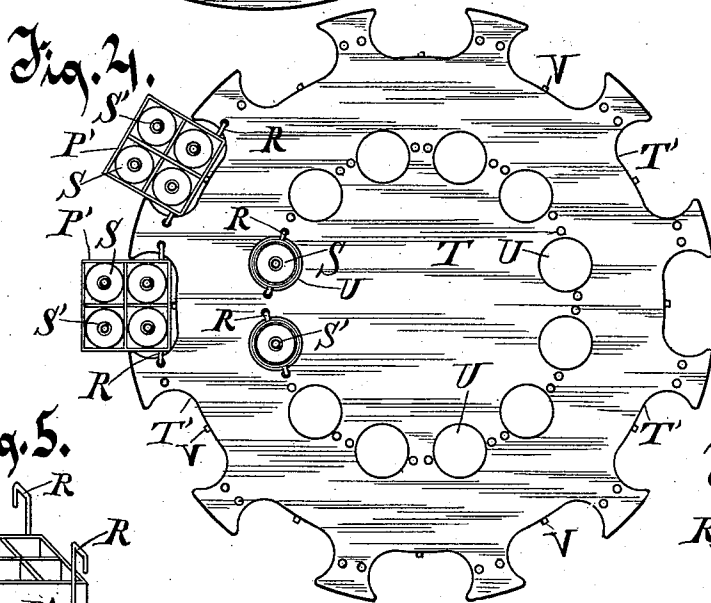
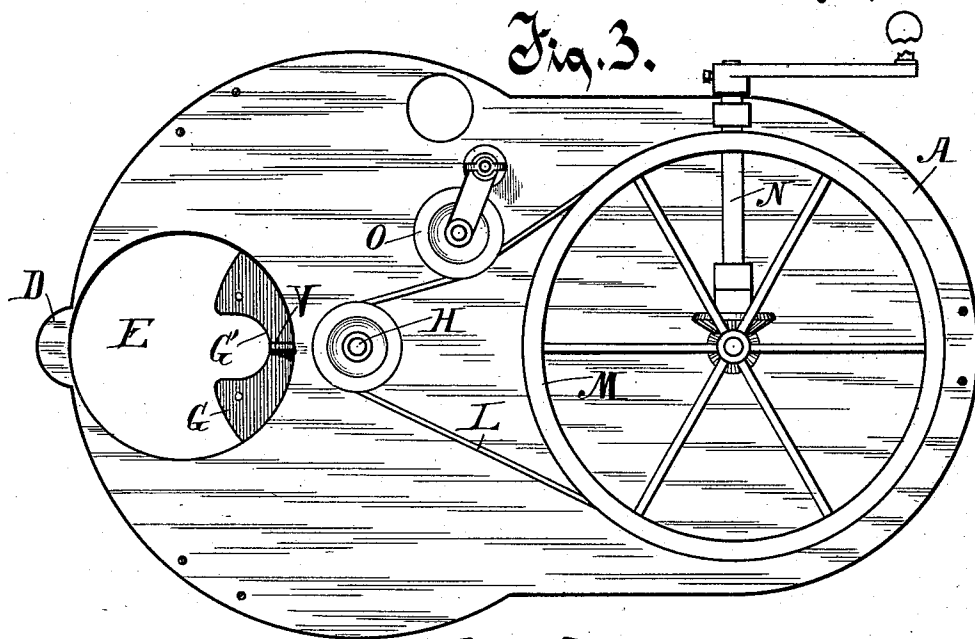
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2 Sheets—Sheet 2.

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MILK TESTER.

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Witnesses.

W. Keeney.
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UNITED STATES PATENT OFFICE.

FRANK B. FARGO, OF LAKE MILLS, WISCONSIN.

MILK-TESTER.

SPECIFICATION forming part of Letters Patent No. 478,099, dated July 5, 1892.

Application filed December 4, 1891. Serial No. 413,965. (No model.)

To all whom it may concern:

Be it known that I, FRANK B. FARGO, of Lake Mills, in the county of Jefferson and State of Wisconsin, have invented a new and useful Improvement in Milk-Testers, of which the following is a description, reference being had to the accompanying drawings, which are a part of this specification.

My invention relates to improvements in the class of milk-testers in which the milk is placed in tubes or bottles with small and preferably graduated necks, and frequently with a small supply of acid, and the tubes are then agitated by mechanism therefor, commonly warmed by hot water or other heat-supply, for the purpose of separating the butter or butter-oil from the caseine and whey to ascertain the amounts and proportions of each in the milk.

The object of my present invention is to improve the apparatus for supporting and agitating the milk tubes or bottles.

In the drawings, Figure 1 is an elevation of a complete milk-tester in which my improved devices are embodied, the inclosing case being shown in central vertical section. Fig. 2 is a top plan view of the complete device, the case being removed, exposing the plan of its interior. Fig. 3 is a view of the under side of the supporting-table and of the mechanism attached thereto. Fig. 4 is a modified form of a disk for supporting the bottle-holding receptacles. Figs. 5 and 6 are perspective views of two forms of bottle-holding receptacles.

A is a table of suitable form and size to support the other parts of the apparatus. A cylindrical case B rests on the table. This case is provided with a water-tight bottom C at a little distance above the table, on which it rests on a suitable flange, forming an air-chamber between the table and the bottom from which a smoke and gas flue D leads at one side of the case upwardly and discharges into the air. An aperture E through the table permits the heat and heated air from the lamp F to rise directly against the bottom C of the case, the smoke escaping through the flue D.

A disk G is fixed on the upper extremity of a revoluble arbor H, having its bearing in the table and in a stud or hanger I, projecting

from the under surface thereof. The disk is located in the case at a distance above the bottom C, the bottom C being upturned, forming a water-tight tube K about the shaft H, so that the case may be supplied with water up nearly to the disk, if desired. The cover B' of the case is removable, and the case is provided with a faucet J for drawing off the water. The shaft H is provided with a pulley on which the belt L runs, which also runs on the larger pulley M, the arbor of which pulley is geared to a hand crank-shaft N, which shaft and the arbor of the pulley M are journaled in suitable bearings therefor arranged on the table A. An idle belt-tightening pulley O is secured adjustably to the table and bears against and is adapted for tightening the belt L.

The disk G is provided with peripheral recesses G', in which the receptacles P are fitted loosely, so as to be readily removable therefrom, but so as to be held by the walls of the recesses against lateral movement. These receptacles P are each provided with arms R, having hooks thereon adapted to enter apertures therefor in the disk G, whereby the receptacles are suspended from and supported on the disk. The lugs V, projecting downwardly from the disk at the inner edges of the recesses G', receive the bearing of the receptacles and prevent their tilting inwardly when hung on the disks. These receptacles, as shown in Fig. 2, are each provided with three vertical compartments, each adapted to receive and hold therein a bottle S. These bottles are of the form in common use, being usually provided with the long graduated neck S', desirable in such milk-holding tubes or bottles. These receptacles P are detachable from the disk G and the bottles S are removable from the receptacles.

This apparatus is utilized as follows: A supply of water is put in the case B, preferably already heated, and it is kept warm during the making of the test by the burning lamp F. The milk to be tested is put in the several bottles S, which bottles are placed in the receptacles P, and the receptacles are secured to the disk G in the case, in the manner described. The case is then covered and the milk is agitated by revolving the disk by

rotating the shaft N. When the process is completed, the milk-receptacles may be removed from the case and the water can be drawn off through the faucet J.

- 5 In the modified form of disk T (shown in Fig. 4) the peripheral recesses T' T' are sufficiently large to receive therein modified forms of receptacles P', which have four compartments, the recesses T' being each sufficiently
10 long circumferentially to receive therein a part of a receptacle, Fig. 5, having two bottles alongside each other. This disk also is provided with a circle of apertures U about but at a distance from its axis, which aper-
15 tures are each adapted to receive therein a single receptacle P'' of the form shown in Fig. 6. This disk T is also provided with suitable apertures adjacent to each of the recesses T' and U for receiving therein the
20 hooks on the suspending-arms R.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In a milk-tester, the combination, with a case arranged to contain heated water, of a disk
25 fixed on an arbor revoluble in the case, which disk is provided with peripheral recesses therein, and receptacles adapted to hold milk-test bottles, which receptacles are suspended

upright on the disk in the recesses in the periphery thereof, substantially as described. 30

2. In an apparatus of the class described for testing milk, a revoluble disk provided with peripheral recesses and with apertures at a distance from its axis other than the peripheral recesses, which apertures are adapted
35 to receive therein removable bottle-holding receptacles suspended on the disk, substantially as described.

3. In an apparatus of the class described for testing milk, a revoluble disk provided
40 with peripheral recesses and hook-receiving apertures, in combination with receptacles adapted to hold milk-test bottles formed to fit detachably in the peripheral recesses in the disks, arms projecting from the recepta-
45 cles, having hooks adapted to engage the disks, and downwardly-projecting lugs on the disk, arranged to receive the bearing of the receptacles and prevent their tilting, substan-
50 tially as described.

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

FRANK B. FARGO.

Witnesses:

C. F. GREENWOOD,
A. W. GREENWOOD.