No. 650,527. Patented May 29, 1900.

M. EGGEMAN.

CENTRIFUGAL TESTING MACHINE.

(Application filed Oct. 23, 1899.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1.

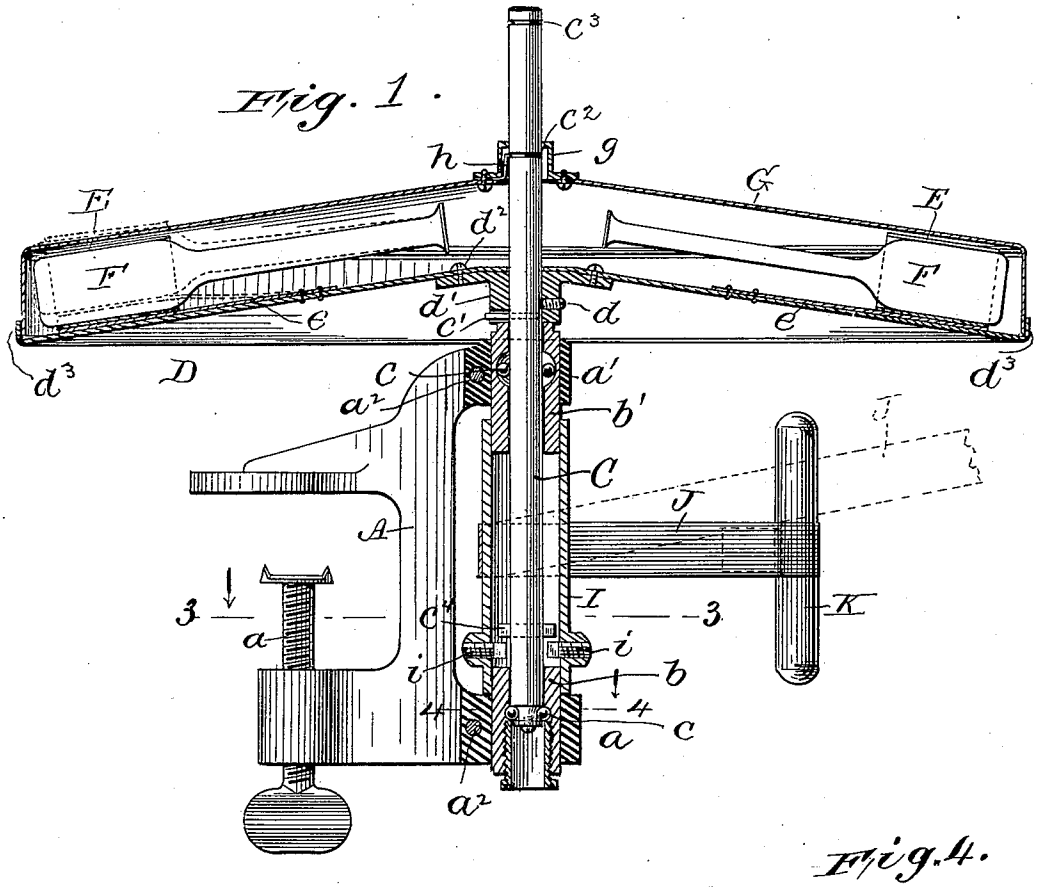


Fig. 4.

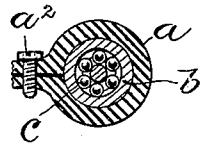
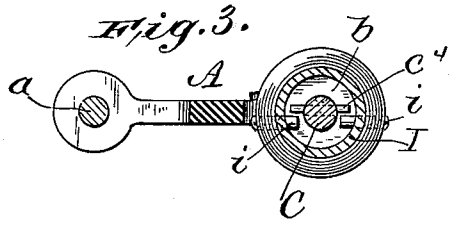


Fig. 3.



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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C

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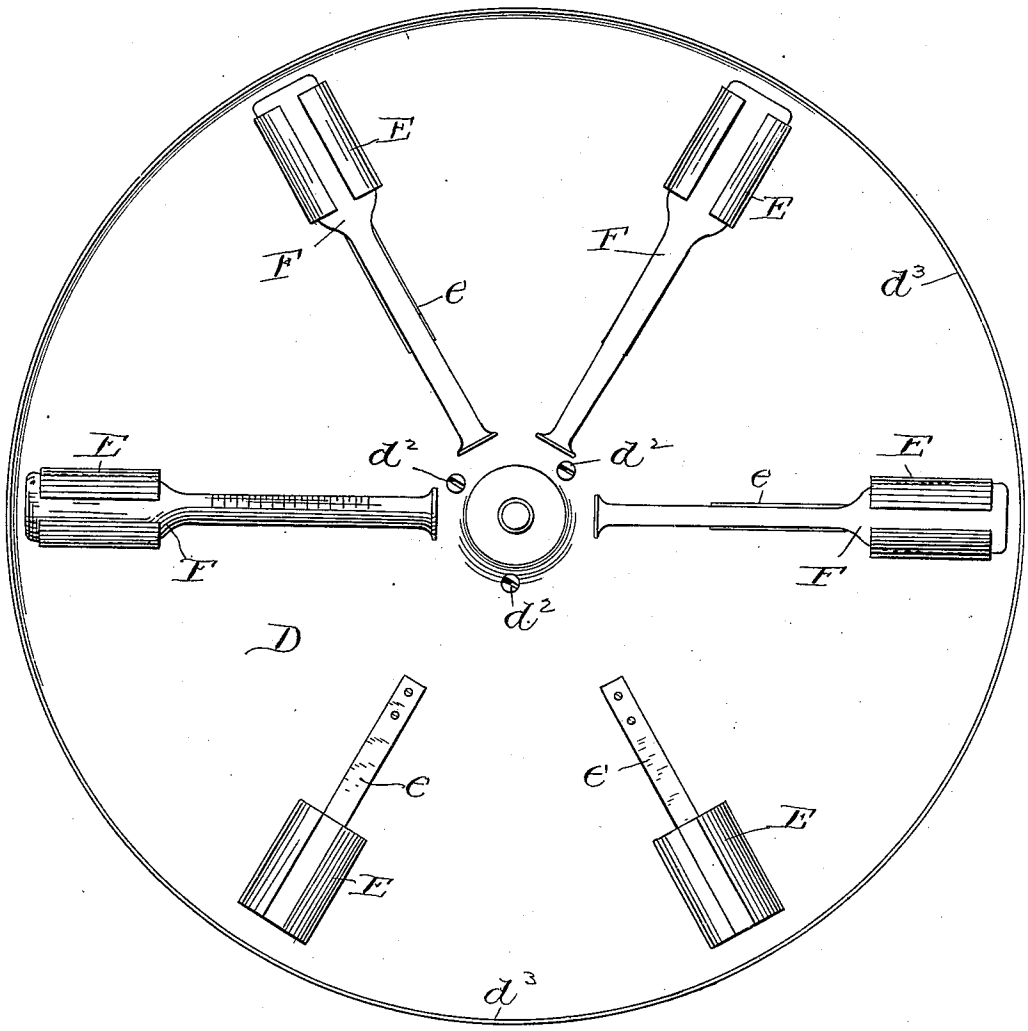


Fig. 2.

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UNITED STATES PATENT OFFICE.

MORIZ EGGEMAN, OF NEW YORK, N. Y.

CENTRIFUGAL TESTING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 650,527, dated May 29, 1900.

Application filed October 23, 1899. Serial No. 734,548. (No model.)

To all whom it may concern:

Be it known that I, MORIZ EGGEMAN, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Centrifugal Testing-Machines, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to that class of centrifugal testing-machines which are adapted to be operated by hand-power and which are employed for testing milk or other liquids for scientific purposes; and my invention has for its object to provide a machine of the class referred to which may be constructed at a minimum cost, but which will be strong and durable and efficient in use.

In the accompanying drawings, Figure 1 is a sectional elevation of my improved machine, and Fig. 2 a top or plan view of the rotating disk or drum which carries the liquid-receiving vials. Fig. 3 is a horizontal section on line 3 3 of Fig. 1, and Fig. 4 a section on line 4 4 of Fig. 1.

Referring to the drawings, A denotes a bracket adapted, by means of a clamping-screw a^2, for attachment to a table, shelf, or other support. Secured within ears $a\,a'$ of the bracket A in any suitable manner, as by clamping-screws a^2, are sleeves b and b', affording ball-bearings c for the rotary shaft or spindle C, to which latter is attached, as by a set-screw d, a flanged sleeve d', to which the rotating disk or drum D is in turn secured, as by screws d^2. Said disk or drum D is provided with a low peripheral flange d^3. A pin c', attached to the shaft C, is preferably employed for convenience in causing the set-screw d to register with its seat in the shaft C, the said pin c' being received in a small groove in the lower end of the sleeve d'.

The rotating disk or drum D is provided with a series of elastically-mounted vial-holders, each of which consists, preferably, of an open metallic sleeve E, adapted to frictionally clasp the body or enlarged portion of a testing-vial F, and a spring-plate e, by which the said sleeve is carried and which is preferably integral with said sleeve. The spring-plates e of the vial-holders are attached near their inner ends to the disk or drum D, leaving their outer ends free. The necks of the vials F are in practice preferably provided with graduated scales.

G is a cover, the peripheral flange of which fits snugly within the flange d^3 of the disk or drum D, so that when the said cover is in place, as represented in Fig. 1, the testing-vials are safely inclosed within the said cover and disk or drum. The cover G is provided with a central boss g, suitably attached thereto, and within the said boss is housed a small spring-catch h, adapted to engage annular grooves or recesses $c^2\,c^3$, formed in the shaft C and suitably located, so that the cover may be retained either in the operative position shown in Fig. 1, with the said spring-catch in frictional engagement with the groove c^2, or the said cover may be lifted when it is desired to obtain access to the vials either in charging the machine or in moving the vials therefrom, and when the said cover is lifted the said spring-catch will hold the said cover in raised position by reason of its frictional engagement with the groove c^3. It will be understood that the frictional engagement between the spring-catch h and the grooves $c^2\,c^3$ is only sufficiently strong to hold the cover in either of the positions referred to, and the frictional engagement of the said spring-catch with the said grooves can be readily overcome either by lifting or pressing downward with a gentle force exerted on the cover.

When the cover is lifted so as to be out of the way, the testing-vials F may be readily inserted or removed without entirely removing the cover from the machine, as has been required with similar machines heretofore in use. When the cover has been lifted, as referred to, the vials may be inserted or removed simply by raising the elastically-supported vial-holders, as denoted by the dotted lines at the left side of Fig. 1, a sufficient distance to enable the vials to clear the low flange d^3 of the rotating disk or drum D as the said vials are inserted or taken out.

I is a rotating sleeve fitted for easy movement about the sleeves $b\,b'$, said sleeve I being provided with inwardly-projecting pins i, adapted, when the said sleeve is lifted slightly, to engage the projecting ends of a transverse pin c^4, fixed in the shaft C, the said pins i and c^4 forming a clutch connection between the

said sleeve and shaft, so that the latter may be rotated by the former. The sleeve I is rotated by hand-power by means of a strap J, provided at its ends with suitable handles K.

When it is desired to rotate the disk or drum D, the operative takes hold of the handles with which the ends of the strap J are provided, and by pulling upward slightly on the strap, as denoted by the dotted line in Fig. 1, the sleeve I is lifted so that its pins *i* will register with and will engage the ends of the pin c^4, extending through the shaft C, and thus the rotary movement imparted to said sleeve will be communicated to the said shaft. The upward movement of the sleeve I is limited by the ear *a'* of the bracket A. The sleeve being rotated in one direction with the clutch-pins in engagement, the operative can, by slackening the strap or by reversing the inclination thereof, permit the sleeve to descend to free its clutch-pins from the pin c^4, when the movement of the strap, and consequently of the sleeve, is reversed for a new rotating impulse, and thus any desired speed may by repeated back-and-forth movements of the strap be imparted to the rotating disk or drum D from the sleeve I through the shaft C, as will be readily understood.

The construction above described is convenient in use and efficient in operation, owing to the fact that it is not necessary to entirely remove the cover from the machine in charging the machine or in changing the vials, so that much time is thus saved. Also the simple clutch connection between the sleeve I and shaft C afforded by the pins *i* and c^4 may be cheaply manufactured and is very durable in use, and even should these parts at any time become worn or broken they may be readily replaced at little cost.

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

1. In a centrifugal testing-machine, the combination with a rotating drum or disk provided with a series of vial-holders, of a cover for the said drum or disk, and means for retaining the said cover in an inoperative position without entirely removing it from the machine.

2. In a centrifugal machine, the combination with a rotating drum or disk provided with a low peripheral flange, of a series of vial-holders having elastic connections at their inner parts with said drum or disk so as to permit their outer ends to be lifted to the top of said flange when the vials are to be inserted or removed.

3. In a centrifugal testing-machine, the combination with a rotating drum or disk D, of a series of vial-holders each of which consists of a sleeve E having an elastic connection with the said disk or drum so that the outer end of each of the said sleeves may be lifted in inserting or removing the vials.

4. In a centrifugal testing-machine, the combination with the rotating shaft C provided with two annular grooves or recesses, of the vial-holding disk or drum D attached thereto, and the cover G provided with a spring-catch adapted to engage either of the said grooves or recesses to hold the said cover either in an operative or a raised position.

5. In a centrifugal testing-machine, the combination with the rotating drum or disk provided with a low peripheral flange, of a series of vial-holders having elastic connections at their inner parts with said drum or disk so as to permit their outer ends to be lifted to the top of said flange when the vials are to be inserted or removed, a cover for said drum or disk and means for retaining the said cover in an inoperative or raised position without entirely removing it from the machine.

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

MORIZ EGGEMAN.

Witnesses:
AUGUSTUS F. PRAATZ,
MAURICE HEYWARD.