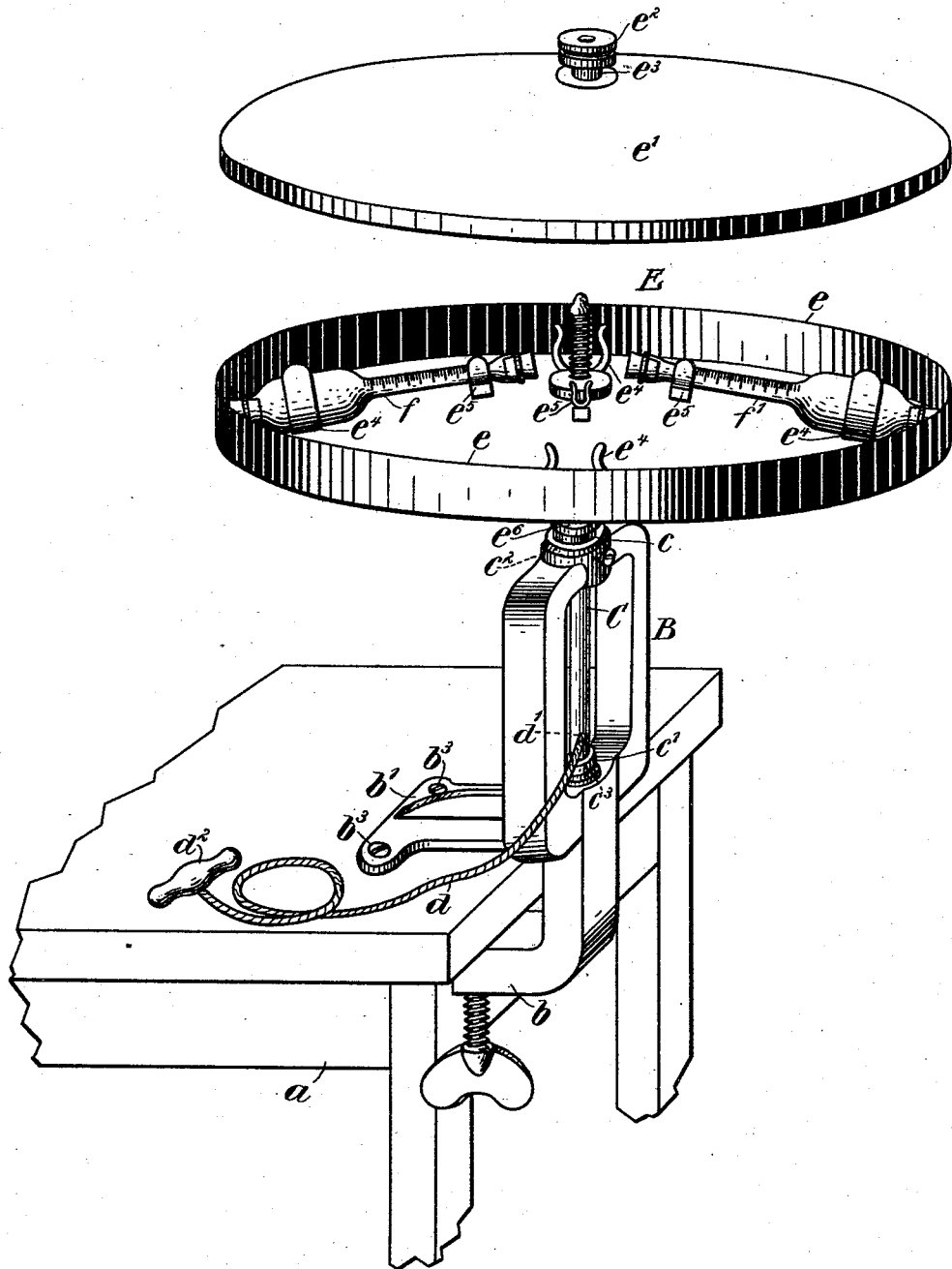


(No Model.)

F. HUGERSHOFF.
CENTRIFUGAL TESTING MACHINE.

No. 523,351.

Patented July 24, 1894.



Witnesses:
Thomas M. Smith.
Richard C. Maxwell.

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UNITED STATES PATENT OFFICE.

FRANZ HUGERSHOFF, OF LEIPSIC, GERMANY.

CENTRIFUGAL TESTING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 523,351, dated July 24, 1894.

Application filed November 11, 1893. Serial No. 490,616. (No model.) Patented in France June 29, 1893, No. 3,842, and in Austria-Hungary July 17, 1893, No. 40,589.

To all whom it may concern:

Be it known that I, FRANZ HUGERSHOFF, a subject of the Emperor of Germany, residing at Leipsic, Germany, have invented certain new and useful Improvements in Centrifugal Testing-Machines, (for which I have obtained Austrian Patent No. 40,589, dated July 17, 1893, and French Patent No. 3,842, dated June 29, 1893,) of which the following is a specification.

My invention has relation to centrifugal machines adapted to be actuated by hand-power; and it relates more particularly to the construction and arrangement of such a machine.

The principal objects of my invention are first, to provide a simple, durable and efficient hand power centrifugal machine; second, to provide such a machine for use in medical or bacteriological examinations for the purpose of separating the bacilli from fluids or semi-fluid matter; third, to provide such a machine with a drum having a detachable cap or cover and means connected with the drum adapted to clamp and hold to position glass vials or similar receptacles in a radial position with respect to the axis of the drum; and fourth, to provide a two part drum with means for detachably clamping vials or fragile receptacles thereto and said drum provided with a vertically disposed shaft journaled to a support provided with ball bearings and with means for rapidly rotating said drum for the segregation or separation of the particles contained in the vials or fragile receptacles radially disposed with respect to the axis of the drum, for effecting bacteriological and other examinations.

My invention consists of a centrifugal machine constructed and arranged for operation in substantially the manner hereinafter described and claimed.

The nature and general features of my invention will be more fully understood from the following description taken in connection with the accompanying drawing forming part hereof, which illustrates in perspective a machine embodying the characteristic features of my invention detachably connected with the end of a table and with the cap or

cover of the drum removed in order to expose to view the location of the vials or fragile receptacles in respect to the axis of the drum and the said vials or receptacles detachably engaging clamps connected with the internal bottom of the drum.

Referring to the drawing *a*, is a table.

B, is a support of rectangular form provided with a clamp *b*, and with a seat *b'*, secured to the surface of the table by means of screws *b³*. *c* and *c'*, are sockets forming bearings for the shaft *C*, resting upon or against ball bearings *c²* and *c³*, which permit of an easy frictionless rotation of the same, thereby requiring less power to drive said shaft and at the same time permitting the shaft to run for a greater length of time when actuated by means of the string or cord *d*, by inserting the same through the opening *d'*, in the shaft *C*, and drawing on the cord or string *d*, in backward and forward directions by means of the handles *d²*, connected therewith.

E, is a two part drum provided with flanged sides *e*, and with a removable cap or cover *e'*, provided with a tightening nut *e²*, secured to a collar or sleeve *e³*, formed integral with the cap or cover *e'*, of the drum *E*. In the bottom of the drum are provided spring clamps *e⁴* and *e⁵*, for detachably engaging vials or glass receptacles *f* and *f'*, in such manner as to respectively embrace the body of each vial, as well as the neck thereof, for example, as illustrated in the drawing.

The upper end of the shaft *C*, is threaded so that in the application of the cap or cover of the drum to the flanged portion or part thereof, by turning the tightening screw or nut *e²* thereon, the same may be rigidly secured to the shaft and the lower part of the drum is secured at the hub portion *e⁶* thereof rigidly to said shaft *C*, so as to permit of the rapid rotation of the two members constituting the drum *E*, when caused to assume a closed position, by means of the string or cord *d*, in order to rapidly rotate the drum. The radial disposition of the vials or receptacles with respect to the axis of the drum is such, as that the matter deposited in said vials or receptacles for bacteriological examinations or for the separation of the sediment

of urinary substances or particles in saliva for the purposes of bacteriological examinations may be readily effected in order to discover any of the germs of disease in one
5 form or another therein and for laboratory and other purposes.

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

10 A hand-power centrifugal machine provided with a standard having a clamping device connected therewith, and a seat, a ball

bearing shaft journaled to said support and carrying a drum with flanged sides, radially disposed clamping devices, and a detachable
15 cover with a tightening device, substantially as and for the purposes set forth.

In witness whereof I have hereunto set my signature in the presence of two subscribing witnesses.

FRANZ HUGERSHOFF.

Witnesses:

AUG. GIEBEL,

RUD. E. FRICKE.