No. 681,804.

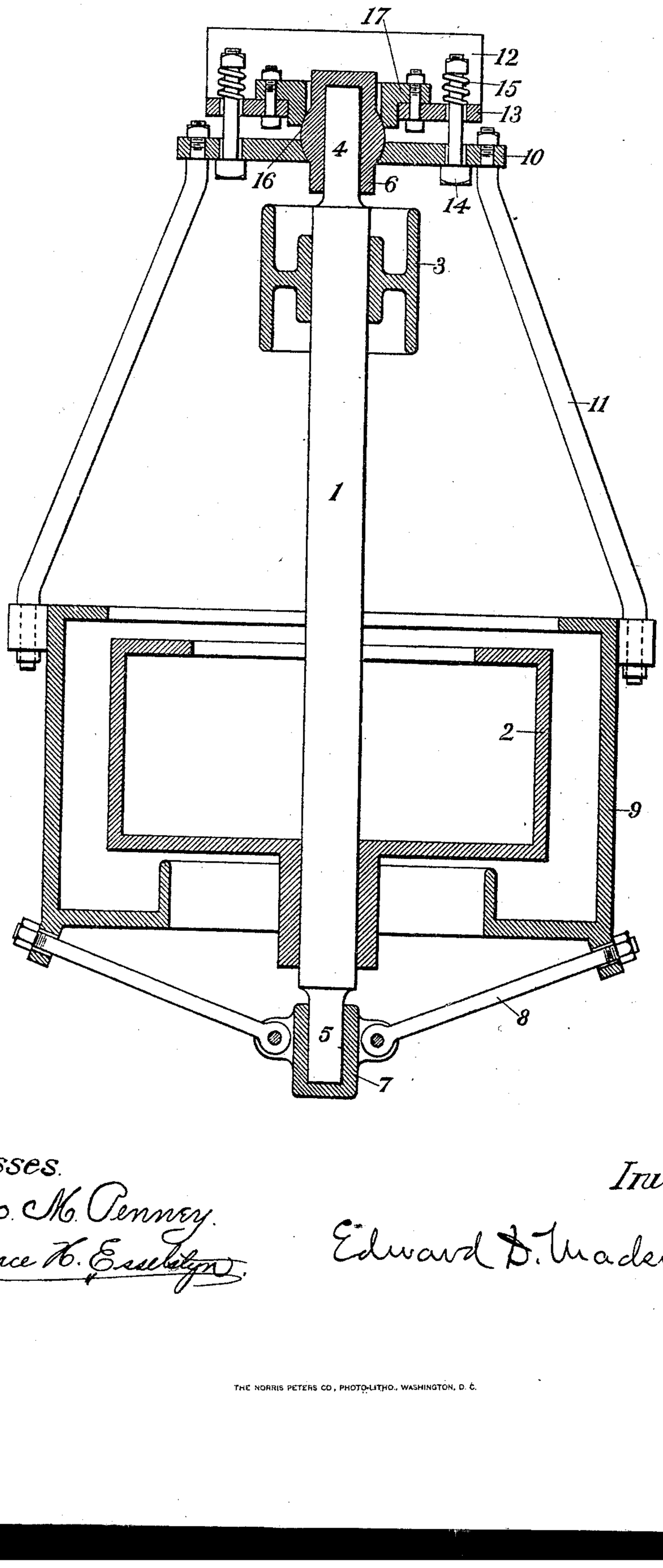
Patented Sept. 3, 1901.

E. D. MACKINTOSH.

CENTRIFUGAL MACHINE.

(Application filed Oct. 18, 1900.

(No Model.)



Witnesses.
Geo. H. Penney.
Horace H. Esselstyn.

Inventor.
Edward D. Mackintosh

UNITED STATES PATENT OFFICE.

EDWARD D. MACKINTOSH, OF NEW YORK, N. Y.

CENTRIFUGAL MACHINE.

SPECIFICATION forming part of Letters Patent No. 681,804, dated September 3, 1901.

Application filed October 18, 1900. Serial No. 33,433. (No model.)

To all whom it may concern:

Be it known that I, EDWARD D. MACKINTOSH, of the borough of Brooklyn, in the city of New York, county of Kings, and State of New York, have invented a new and useful Centrifugal Machine, of which the following is a specification.

My invention relates to centrifugal machines that are so hung from a fixed support as to be capable of a limited swinging movement.

The object of my invention is to provide a suitable support for such a machine and for its bearings.

Referring to the accompanying drawing, forming part of this specification, and which shows a vertical section of my improved centrifugal machine, 1 is the spindle carrying the basket 2 and revolved by a belt applied to the pulley 3 or by any other suitable means.

4 and 5 are journals at the ends of the spindle and turning in bearings 6 and 7. The lower bearing 7 supports the spindle, with its attached parts, and is in turn supported by a series of tension members 8, preferably three in number, which I have shown in the form of rods. These are attached to the bearing, extend outward and upward, and are supported at their outer ends by the casing 9, surrounding the basket 2. These tension members and their connections are non-elastic; but their attachment to the casing and the bearing, which may be effected in any suitable manner, is loose enough to permit the bearing to tip slightly in any direction and conform to the alinement of the spindle 1. The casing 9 is rigidly attached to the head 10 by means of a series of rods 11, and the head 10 is spring-supported from a fixed support 12. I have shown the fixed support 12 in the form of a bracket, with a horizontal shelf 13, and I prefer to make the spring-support in the form of two bolts 14, passing very loosely through the holes in the horizontal shelf and in the head and compressing springs 15 against either the one or the other. The springs are shown as pressing against the shelf, but would act equally well against the lower side of the head. The upper bearing 6 is provided with a ball-shaped enlargement 16, fitting into a hollow formed in the upper side of the head 10, in which the bearing can therefore tip to conform to the alinement of the spindle 1. The ball-shaped enlargement also fits into a socket 17, secured to the fixed support 12, thus forming, in combination with the spring-support hereinbefore described, a spring-maintained ball-and-socket joint, which permits the hanging parts to swing in any direction.

As forming an important feature of my invention I wish to call attention to the fact that by simply removing the socket 17 the bearing 6 can be withdrawn for examination or repairs from the rigidly-connected head 10 and casing 9. In order that this may be done, the hole shown in the head 10, through which the bearing 6 extends, must of course be large enough to permit the passage of any part of the bearing within or below the hole.

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

1. In a centrifugal machine, a spring-sustained casing swingable about a fixed point above the basket, substantially as described.

2. In a centrifugal machine, the combination of a spring-sustained head above the basket, and a swingable casing hanging from the head, substantially as described.

3. In a centrifugal machine, the combination of a bearing in which turns the spindle, and a spring-sustained head hanging from a fixed support above the basket and giving support to the bearing, substantially as described.

4. In a centrifugal machine, the combination of a head above the basket, a casing supported by the head, a bearing supported by the casing, and a spindle carrying the basket and rotating in the said bearing and also in another bearing, the last-named bearing taking support from the head and being removable upwardly from both the head and the spindle, substantially as described.

5. In a centrifugal machine, the combination of a head and a fixed support, both above the basket, a casing supported by the head, a spindle carrying the basket, a lower bearing supported by the casing, and a higher bearing removable upwardly from the spindle, the head, and the fixed support, substantially as described.

6. In a centrifugal machine, the combina-

tion of a bearing supporting the spindle, and tension members, loosely attached to the bearing, extending outward and upward, and loosely attached to the casing, substantially as described.

7. In a centrifugal machine, the combination of a hanging head, a swingable casing hanging from the head, a bearing supporting the spindle, and tension members, loosely attached to the bearing, extending outward and upward, and loosely attached to the casing, substantially as described.

8. In a hanging centrifugal machine, the combination of a spring-supported head, a casing attached to the head, a bearing supporting the spindle, and tension members, attached to the bearing, extending outward and upward, and supported by the casing, substantially as described.

9. In a centrifugal machine, the combination of a fixed support above the basket, a head hanging from the fixed support, a swingable casing hanging from the head, and a fixed socket above the basket and forming part of a spring-maintained ball-and-socket joint, substantially as described.

10. In a hanging centrifugal machine, the combination of a bearing above the basket, a spring-maintained ball-and-socket joint connecting the fixed support with a head supporting the casing, a bearing supporting the spindle, and tension members, supporting the last-named bearing, extending outward and upward, and supported by the casing, substantially as described.

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

EDWARD D. MACKINTOSH.

Witnesses:

E. S. INNET,

GEO. M. PENNEY.