J. B. SMYTHE.

GOVERNOR.

APPLICATION FILED APR. 5, 1919.

1,315,875.

Patented Sept. 9, 1919.

Fig. 1.

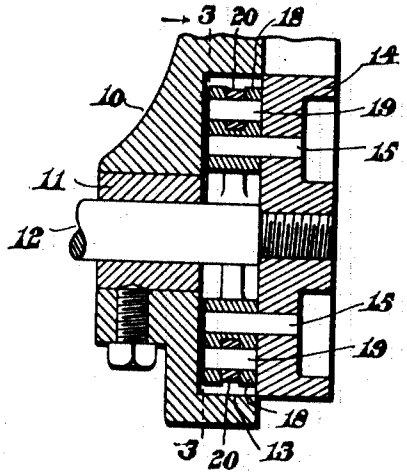


Fig. 2.

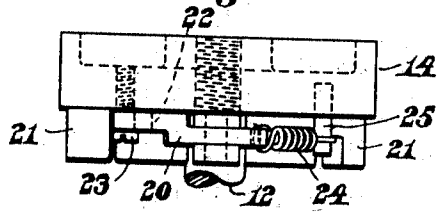
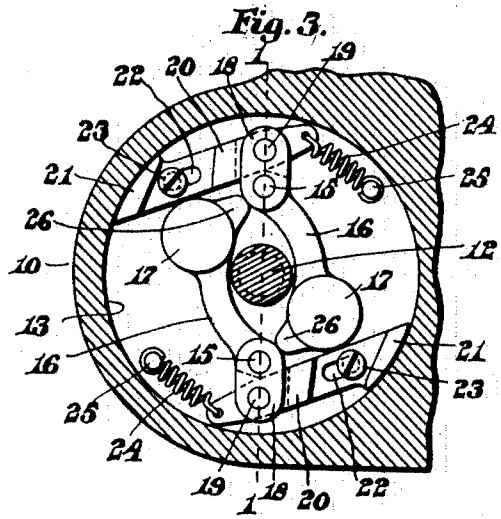


Fig. 3.



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UNITED STATES PATENT OFFICE.

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GOVERNOR.

1,315,875. Specification of Letters Patent. Patented Sept. 9, 1919.

Original application filed February 15, 1919, Serial No. 278,299. Divided and this application filed April 5, 1919. Serial No. 288,412.

To all whom it may concern:

Be it known that I, JOSEPH B. SMYTHE, a subject of King of England, and a resident of Coaticook, Province of Quebec, Dominion of Canada, have invented certain new and useful Improvements in Governors, of which the following is a specification.

This invention relates to governors and particularly devices of this character which are adapted to operate by centrifugal action to retard the speed of a revoluble shaft when it exceeds a predetermined limit.

The invention consists primarily of a member revoluble with a rotating shaft, having pivoted thereto weighted arms, to the outer ends of which are pivotally connected friction members which are adapted to be moved in a straight path into contact with the wall of a housing for said revoluble member whenever said arms are moved outwardly about their pivots by centrifugal action due to the excessive speed of said rotating shaft.

The invention further consists of certain novel features of construction and arrangement of parts which will be fully understood by reference to the description of the drawings and to the claims to be hereinafter given.

For the purpose of illustrating the invention, one preferred form thereof is illustrated in the drawings, this form having been found to give satisfactory and reliable results, although it is to be understood that the various instrumentalities of which the invention consists can be variously arranged and organized, and that the invention is not limited to the precise arrangement and organization of the instrumentalities as herein shown and described except as required by the scope of the appended claims.

Of the drawings:

Figure 1 represents a vertical section of a governor embodying the features of the present invention shown in connection with the housing therefor.

Fig. 2 represents a plan of the governor, and

Fig. 3 represents an elevation of the same.

Similar characters indicate like parts throughout the several figures of the drawings.

In the drawings, 10 is a fixed support having a bearing 11 for a revoluble shaft 12 and provided also with a cylindrical chamber 13 concentric to the axis of said shaft 12.

The shaft 12 has a disk 14 secured thereto, and revoluble therewith, said disk closing the open end of said chamber 13.

This disk 14 is provided with two diametrically disposed projecting pins or studs 15 on which are mounted swinging levers 16, the longer arm of each of which is provided with a weight 17 preferably formed thereon.

The shorter arm 18 of each lever 16 is bifurcated and provided with a pivot pin 19.

Positioned in each bifurcated arm 18 is a slidable member 20 having a friction pad 21 at one end thereof adapted to coact with the cylindrical wall of the chamber 13.

The pins 19 extend through the members 20 so that said members 20 may have slight movement about the axes of said pins when the levers 16 are moved about the pivots 15.

Each slidable member 20 is provided with a slot 22 through each of which extends a headed stud 23.

To the inner end of the slidable member 20 is secured one end of a helical spring 24, the opposite end of which is secured to the disk 14 at 25.

The weight 17 of each lever 16 is provided with a projecting lug 26 extending toward the pivot 15 of the other lever 16 and is normally retained in contact with the other lever 16 by means of the spring 24.

At this time there will be a slight clearance between the friction pad 21 and the cylindrical wall of the chamber 13.

When the shaft 12 begins to rotate at an excessive speed, the centrifugal action will throw the weights 17 outwardly and cause the pads 21 to be forced into frictional contact with the cylindrical wall of the chamber 13 and this friction will tend to retard the rotation of said shaft.

It is obvious that the faster the shaft 12 rotates, the greater will be the frictional contact between the pads 21 and the chamber wall.

In order to increase the force imparted to the slidable member when it is being moved into engagement with the chamber wall, the distance between the axes of the pivots 15 and 19 is very short compared with the distance between the pivot 15 and the weight 17.

By providing the slidable member 20 with the slot 22 through which the stud 23 extends, the movement of said slidable member is always substantially in a straight path.

By moving the member 16 in a straight path, the surface of the pad 21 coacting with the chamber wall will always wear evenly and therefore its entire surface will impinge upon said wall under all conditions and a better frictional contact is thereby assured.

By constructing the governor in the manner shown and described, all of the operating parts may be confined in very small chambers and great leverage may be attained.

The governor is particularly adapted for use in connection with self-run-down screw jacks such as shown in another application of mine filed Feb. 15, 1919 and numbered 278,299 of which this application is a division.

It is believed that the operation and many advantages of the invention will be readily understood without further description.

Having thus described my invention, I claim:

1. In a device of the class described, a cylindrical housing; a revoluble shaft; a disk thereon; friction members slidably mounted on said disk and adapted to coact with the cylindrical wall of said housing; and pivoted weighted members pivotally connected to the inner ends of said slidable members.

2. In a device of the class described, a cylindrical housing; a revoluble shaft; a disk thereon; friction members slidably mounted on said disk and adapted to coact with the cylindrical wall of said housing; springs for normally retaining said members free from contact with the chamber wall; and pivoted weighted members pivotally connected to the inner ends of said slidable members.

3. In a device of the class described, a cylindrical housing; a revoluble shaft; a disk thereon; friction members slidably mounted on said disk and adapted to coact with the cylindrical wall of said housing; pivoted members having long and short arms; pivot members between said slidable members and the shorter arms; and weights on the ends of the longer arms.

4. In a device of the class described, a cylindrical housing; a revoluble shaft; a disk thereon; friction members slidably mounted on said disk and adapted to coact with the cylindrical wall of said housing; pivoted members having long and short arms; pivot members between said slidable members and the shorter arms; weights on the ends of the longer arms; and a lug on the weight of each lever normally contacting with the other lever.

5. In a device of the class described, a cylindrical housing; a revoluble shaft; a disk thereon; diametrically disposed studs fixedly secured thereon; slotted friction members positioned on said studs; weighted members pivoted to said disk and having the unweighted arms pivotally connected to the ends of said friction members.

Signed by me at Sherbrooke, Que., this 1st day of April, 1919.

JOSEPH B. SMYTHE.

Witnesses:
J. S. TYNE,
E. A. PATENAUDE.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."