No. 891,282. PATENTED JUNE 23, 1908.

A. L. McHUGH.

SPEED LIMITING DEVICE.

APPLICATION FILED AUG. 9, 1905.

Fig. 1.

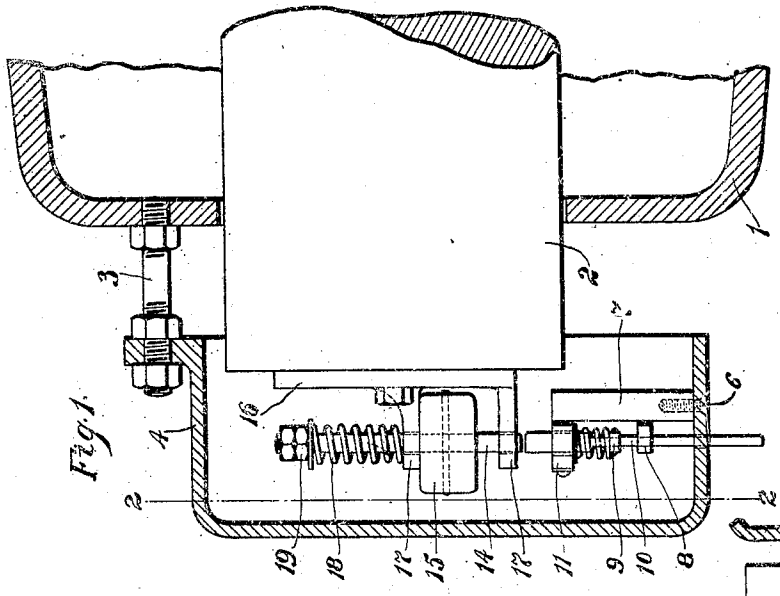


Fig. 3.

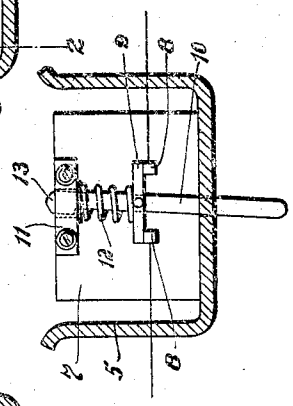
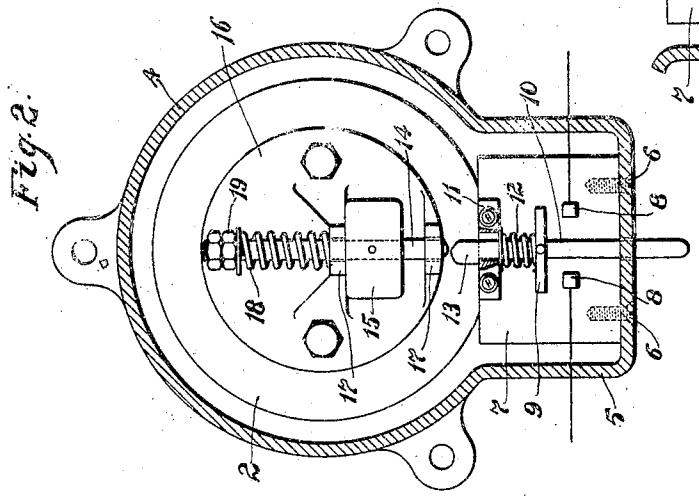


Fig. 2.



Witnesses:

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UNITED STATES PATENT OFFICE.

ANTHONY L. McHUGH, OF CINCINNATI, OHIO, ASSIGNOR TO THE BULLOCK ELECTRIC MANUFACTURING COMPANY, A CORPORATION OF OHIO.

SPEED-LIMITING DEVICE.

No. 891,282. Specification of Letters Patent. Patented June 23, 1908.

Application filed August 9, 1905. Serial No. 273,380.

To all whom it may concern:

Be it known that I, ANTHONY L. McHUGH, citizen of the United States, residing at Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Speed-Limiting Devices, of which the following is a full, clear, and exact specification.

The present invention relates to speed-limiting devices for rotary machines, and particularly to that class of speed-limiting devices which operate automatically to close an electric circuit through suitable translating mechanism upon a certain predetermined speed being exceeded.

The object of my invention is to provide a very simple, compact, and inexpensive device of this character which may be applied with facility to a shaft or other rotating part of the machine the speed of rotation of which is to be limited.

My invention comprises, in one of its aspects, the combination with a rotatable member, of a spring-pressed circuit-controlling device adapted to be mounted upon a normally stationary support, a latch for holding said device in retracted position, and a weighted, movable member mounted upon the said rotatable member and adapted to engage and trip the latch.

The invention will be more fully understood by referring to the accompanying drawings, in which

Figure 1 is a sectional elevation of a portion of the shaft and housing of a dynamo-electric machine having connected thereto a speed limiting device embodying my invention; Fig. 2 is a transverse section on the line 2—2 of Fig. 1; and Fig. 3 is a view similar to Fig. 2 with parts removed, showing the movable part of the switch in its released or closed position.

The housing 1, surrounding the shaft 2, is here shown provided with outwardly extending bolts 3, which support the casing 4. This casing is provided at its lower part with a pocket 5 in which is mounted the circuit closing switch. Secured in the pocket 5 of the casing by means of screws 6 is the block 7, which supports the stationary contacts 8, 8 of the circuit closing switch. The contacts 8, 8 are suitably insulated from the block 7.

The movable portion 9 of the switch is adjustably mounted on the spring pressed plunger 10 which is free to slide through the guide or casing 11 on the upper part of the block 7, and through a hole in the lower part of the casing 4. A spring 12 is here shown as surrounding the plunger between the guide, or casing 11, and the movable part 9 of the switch, and thus tends to move the plunger and movable part of the switch downward. The upper part of the plunger is provided with a hook or latch 13 which normally rests upon the stationary member 11 to retain the movable part of the switch in its retracted position. The lower part of the plunger extends through the casing and forms a push button for resetting the latch and opening the switch.

Mounted upon the end of the shaft or otherwise mounted on a rotating part of the machine is the centrifugal device. This centrifugal device comprises the spindle 14 and the weight 15. Secured to the end of the shaft 2 is the plate 16 provided with the outwardly extending lugs 17, 17 through which the spindle is free to slide. A spring 18 surrounds the spindle 14 and bears against one of the lugs 17 and the adjustable nut 19 to restrain the weight against centrifugal action, until after a certain predetermined speed has been reached. The spring 18 is so adjusted that normally at ordinary speeds of rotation the lower end of the spindle 14 does not contact with the latch 13 as the spindle 14 and weight 15 rotate with the shaft. If, now, the shaft speeds up above a predetermined amount, in a counter clock-wise direction, the weight, by centrifugal action, will move the spindle outward until its outer end strikes and trips the latch 13 and releases the plunger 10. When the latch releases the plunger the switch is closed by the action of spring 12. The adjustable nut 19 provides a ready means for adjusting the tension of the spring and therefore for adjusting the speed at which the latch will be released and the switch closed.

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

1. In combination with a rotating member, a switch normally held in a retracted or open position, a latch for holding the switch in the retracted position, a centrifugal device comprising a weighted spindle slidably mounted to move radially in a direction transverse to the axis of the rotating mem-

ber, a spring for restraining said weighted spindle against centrifugal action up to a predetermined value, said spindle and switch being so relatively mounted that the switch will be operated by the spindle after a certain radial movement thereof.

2. In combination with a rotating shaft, a speed limiting device comprising a support, two stationary switch contacts mounted thereon, a movable switch contact, a plunger on which said movable contact is carried, a latch normally engaging the said support and holding the plunger and movable switch contact in retracted position, a centrifugal device comprising a spindle slidable in a direction transverse to the axis of the shaft, and in a plane containing the said latch, a weight on said spindle, and a spring normally restraining said spindle against centrifugal action.

3. In combination with the rotating member of a machine, a casing inclosing the end thereof, a switch in the lower part of said casing, the movable part of which being normally held out of contact with the stationary parts by a vertically movable plunger, a support in said casing, a movable hook or latch engaging said support and holding the plunger and movable member of the switch in a retracted position, and a weighted spring-restrained member in proximity thereto, mounted in lugs on the end of the shaft to move in an outward direction into contact with said latch to close the switch after a certain predetermined speed has been reached.

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

ANTHONY L. McHUGH.

Witnesses:

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