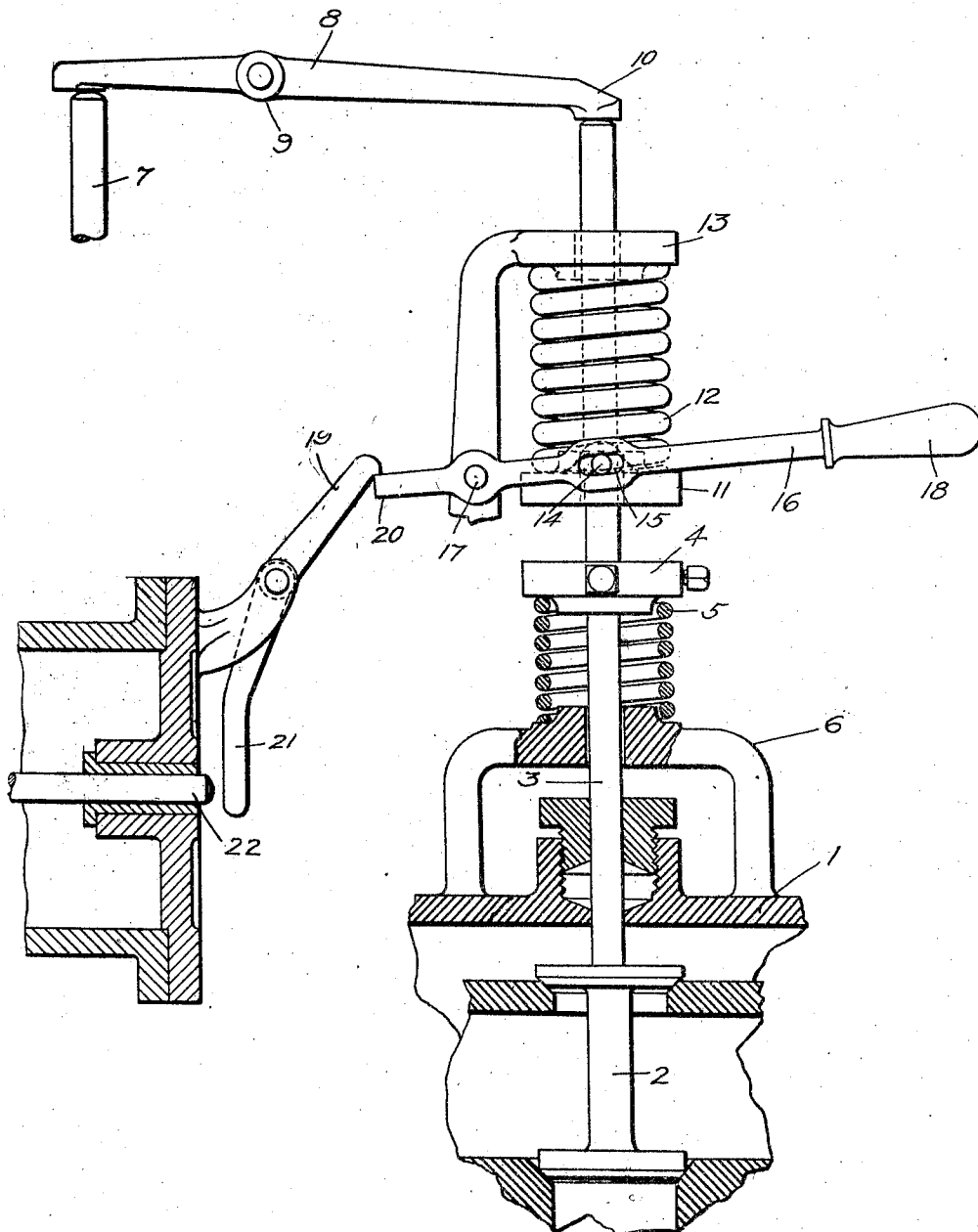


H. L. BARTON.
GOVERNING APPARATUS.
APPLICATION FILED SEPT. 1, 1909.

976,839.

Patented Nov. 29, 1910.



Witnesses:
W. B. Gero
O. J. Frank

Inventor.
H. L. Barton
Jos. D. Gero
Attorney.

UNITED STATES PATENT OFFICE.

HENRY L. BARTON, OF PITTSBURG, PENNSYLVANIA. ASSIGNOR TO THE WESTINGHOUSE MACHINE COMPANY, A CORPORATION OF PENNSYLVANIA.

GOVERNING APPARATUS.

976,839.

Specification of Letters Patent.

Patented Nov. 29, 1910.

Application filed September 1, 1909. Serial No. 515,579.

To all whom it may concern:

Be it known that I, HENRY L. BARTON, a citizen of the United States, and a resident of Pittsburg, in the county of Allegheny and State of Pennsylvania, have made a new and useful invention in Governing Apparatus, of which the following is a specification.

This invention relates to means for controlling the admission of motive fluid to a motor and particularly steam to a turbine.

One of the objects of the invention is to provide means whereby the admission valve will be controlled by the governor or speed responsive device to throttle the steam entering the turbine in accordance with the load, and to provide means whereby, when the motor exceeds a determined speed, the motive fluid will be entirely cut off.

By an arrangement made in accordance with my invention, I am enabled to operate the admission valve as a throttle valve or a safety stop valve dependent upon the speed of the motor.

In the drawings: the figure illustrates a view partly in section and partly in elevation of a mechanism constructed in accordance with my invention.

Referring now to the drawings by numerals of reference: 1 designates a motor, as for example, a turbine, having a double-beat admission valve 2 of usual construction, said valve being provided with a stem 3. Secured to the stem 3 is a collar 4 which may be adjustably secured on said stem and against which one end of a spring 5 bears. The other end of the spring bears against the spring seat 6 carried by the turbine. The spring 5 is an expansion spring and the normal tendency thereof will be to unseat the valve 2. The valve will be controlled, however, under normal working conditions by a governor or speed responsive device of which 7 designates the stem. The stem 7 may bear against one end of a lever 8 fulcrumed at 9. The other end of the lever 8 bears against the other end of the valve stem 3. Thus as the governor weights move out, the stem 7 is raised so as to depress the end 10 of the lever 8 and tend to close the valve 2 against the action of the spring 5. When the speed of the motor drops, the expansive force of the spring 5 will tend to open the valve, which it will be permitted to do because the stem 7 of the governor will be moved away from the lever 8.

Surrounding the stem 3 but not connected to it is a collar 11 which forms a seat for a spring 12, one end of which bears against the collar 11 and the other end of which bears against a suitably supported bracket 13. The collar 11 is provided with a pin or projection 14 engaging an elongated slot 15 in the lever 16. The lever 16 is pivoted at 17 to the bracket 13 and as the collar 11 is free to slide with respect to the stem 3, the lever 16 may be raised by the handle 18 so as to compress the spring 12 and the spring will be held in this compressed position by a latch 19 which may engage the end 20 of the lever 16. The latch 19 is provided with a depending arm 21 which may lie adjacent a centrifugally actuated release bolt 22 carried by the motor so that when the speed of the motor becomes excessive, the bolt 22 will be thrown out by centrifugal force so as to contact with the depending arm 21 and release the latch 19 from engagement with the end 20 of the lever 16.

In view of the fact that the spring 12 is stronger than the spring 5, the said spring 12 will overcome the spring 5 by bringing the collar 11 into contact with the collar 4 and causing the spring 5 to be contracted when the latch 19 releases the end 20 of the lever 16 and the valve 2 will be seated. When it is desirable to again start up the motor it will only be necessary to raise the handle 18 of the lever 16 and engage the end 20 of the lever 16 with the latch 19, in which event the valve 2 will throttle, according to the speed of the motor, up to a determined limit. If that limit is exceeded, however, the centrifugally actuated bolt will release the latch 19 and cause a recurrence of the cutting off feature. Whenever the speed of the motor is below the maximum the valve 2 will operate only as a throttle valve, the spring 12 operating only under overspeed.

In accordance with the provisions of the patent statutes, I have described the principle of operation of my invention, together with the apparatus which I now consider to represent the best embodiment thereof, but I desire to have it understood that the apparatus shown is only illustrative and that the invention can be carried out by other means.

What I claim is:

1. The combination with a motor and its

supply valve, of means for controlling the position of said valve, a spring, which when extended will hold said valve closed, means for rendering said spring inoperative during normal speeds of said motor and trip mechanism for releasing said spring to render it operative.

2. The combination with a motor and its supply valve provided with a stem, speed responsive means for controlling the position of said valve, a spring surrounding said valve stem and adapted when extended to close said valve, means for holding said spring in an inoperative position and trip mechanism for releasing said spring.

3. The combination with the supply valve of a motor, an expansion spring tending to unseat said valve, a lever, a speed responsive device to actuate said lever to impart a closing movement to the valve, a spring opposed to and stronger than the first mentioned spring and means responsive to speed to release said second mentioned spring.

4. The combination with the supply valve of a motor, an adjustable collar on the stem of said valve, an expansion spring bearing against said collar, a lever movable to exert pressure opposed to said spring, a speed responsive device to actuate said lever, a collar loose on the stem, a spring opposed to

the first mentioned spring and bearing against said last mentioned collar, means for normally holding said last mentioned spring inactive and means for releasing it.

5. The combination with the supply valve of a motor, a throttle mechanism for the valve comprising a spring and a speed responsive device actuated lever and a valve seating mechanism comprising a spring stronger than and opposed to the first mentioned spring and means for holding said last mentioned spring out of operation.

6. The combination with a motor and its supply valve provided with a stem, speed responsive means operatively connected to said stem and including a spring tending to yieldingly hold said valve open, a spring surrounding said stem, which, when extended will close said valve, means for holding said latter spring in an inoperative position and trip mechanism for rendering said latter spring operative.

In testimony whereof, I have hereunto subscribed my name this 30th day of August, 1909.

HENRY L. BARTON.

Witnesses:

C. W. MCGHEE,
GEO. A. WALKER.