(No Model.)

D. L. F. CHASE.

STEAM GOVERNOR.

No. 260,842. Patented July 11, 1882.

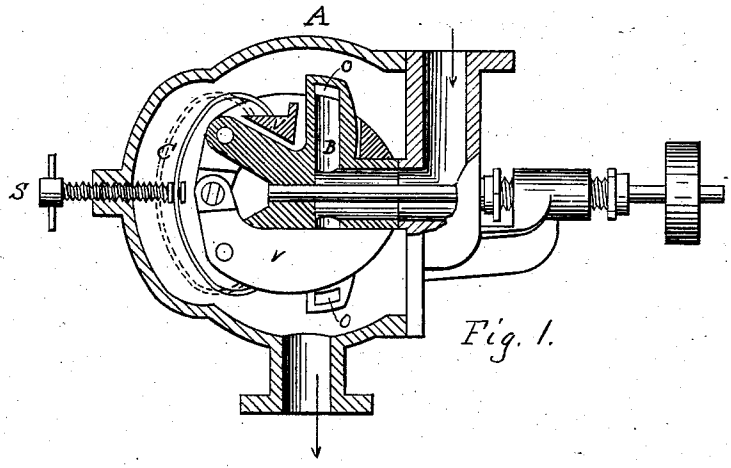


Fig. 1.

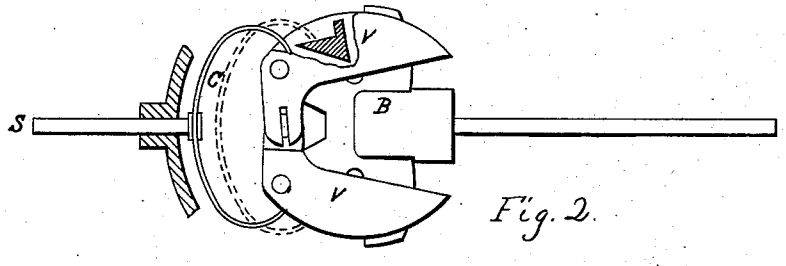


Fig. 2.

Witnesses
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DANIEL L. F. CHASE, OF SOMERVILLE, MASSACHUSETTS.

STEAM-GOVERNOR.

SPECIFICATION forming part of Letters Patent No. 260,842, dated July 11, 1882.

Application filed December 12, 1881. (No model.)

To all whom it may concern:

Be it known that I, DANIEL L. F. CHASE, of Somerville, Middlesex county, Massachusetts, have invented a new and useful Improvement in Steam-Governors; and I hereby declare that the following specification and the accompanying drawings give a full and accurate description of the same.

My present invention is an improvement upon the governor for which I already hold Letters Patent Nos. 245,276 and 245,277, August 9, 1881; and my object is to adapt the general principles of that machine to a device for changing the speed while running, and to a stop-motion.

The nature of my invention consists in so arranging the parts of the governor that the spring may be changed as to its tension or leverage by means of a screw or spindle attached to or bearing upon said spring, and extending from the same through the shell of the case, so as to be manipulated from the outside while the governor is running.

Figure 1 is a vertical longitudinal section of the case and inclosed parts. Fig. 2 is from the same point of view, showing the internal parts in elevation and a small section of the case.

The flier B, with its ports O O, valves V V, and the spring C are arranged with reference to each other exactly as in the former patent. In the new arrangement, however, the axis of revolution is changed, so that the valves V V oscillate in planes parallel to the driving-shaft instead of perpendicular to it, as before. The shaft projects from the edge of the flier B at a point between the outer or free ends of the valves V V and opposite the middle of the spring C. This method of revolution requires the case to be of spherical rather than cylindrical form. The inlet-steam passage of the flier B is an annular space around the shaft, and is continuous with the inlet-passage of the case. (Shown by the arrow at the top of Fig. 1.) This arrangement of parts brings the middle of the spring C into the axis of revolution without interfering with the shaft or inlet-passage, which was the chief object in view in connection with the device (next to be explained) for changing speed, &c.

As shown in Fig. 1, the ends of the spring C rest on connecting posts or stays which form parts of the valves V V. A screw, S, passes through the shell of the case in line with the shaft, and is attached to the middle of the spring, so as to turn independently of the same. Then by means of the screw the spring may, while revolving, be moved back or forth, its ends sliding on the valves, and its pressure being exerted at a greater or less distance from the pivots on which the valves swing. The effect of this is that the centrifugal force of the valves has a varying leverage on the spring, according to the position of the latter, and as the speed depends upon the resistance of the spring to the centrifugal force the turning of the screw will alter the speed.

In Fig. 2 a spindle, S, is shown, instead of the screw in Fig. 1. In order to change the speed, this spindle is moved back or forth, either by the hand directly or by the aid of a screw or lever attached to or bearing upon its outer end; but, in addition to changing the speed, another important feature is shown in Fig. 2, as follows: The spring C may be drawn back far enough to release the valves entirely, when the latter will instantly fly out and close the ports completely, as shown in the drawings, and thus stop the engine. The stop-motion may be operated by the hand directly, or with the aid of a lever, cord, screw, or other appliance. Moreover, the spindle S, if of considerable size, will be forced outward by the steam-pressure inside, if such pressure is unresisted. Consequently, if a releasable thrust-bearing or step be fixed at the outer end of the spindle, and said step be connected (by obvious mechanical means) to a rider or idler-pulley resting on the governor-belt, the breaking of said belt would cause the rider to fall, thus releasing the spindle and drawing the spring away from the valves, and so stopping the engine automatically. It should be understood that after the belt breaks and the spring is withdrawn the governor continues to revolve of its own momentum sufficiently to throw out the valves and close the ports.

In case the stop-motion is not required the ends of the spring may be attached rigidly to the valves by screws or pins, as in my former patent, and the speed would in that case be changed by changing the pressure of the screw

or spindle S upon the spring, and thus varying the tension of the latter.

I do not now claim absolutely the combination of the C-spring with a variable tension, as my former patent describes a method of adjustment while the governor is at rest. The present matter relates wholly to manipulating the spring while the governor is in motion.

What I claim as my invention, and desire to secure by Letters Patent, is the following:

In a steam-governor consisting essentially of a chamber or case and an inclosed centrifugal mechanism, the combination of the flier B, valves V V, spring C, and screw or spindle S, the whole arranged substantially as described, and for the purposes set forth.

DANIEL L. F. CHASE.

Witnesses:

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