(Model.)

E. WRIGHT.

STEAM ENGINE GOVERNOR.

No. 245,688. Patented Aug. 16, 1881.

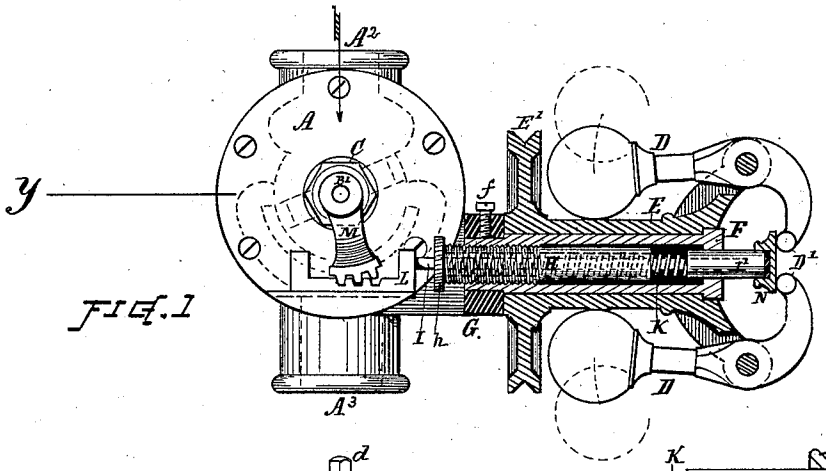


FIG. 1

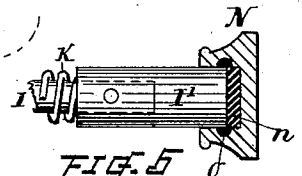


FIG. 5

FIG. 2

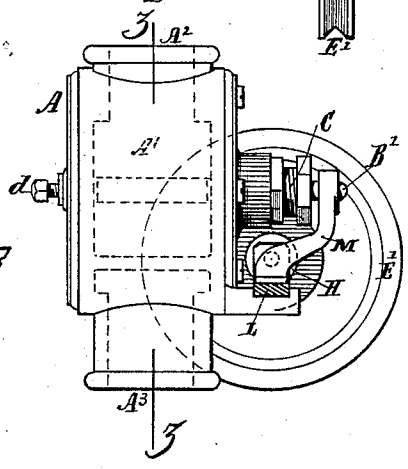


FIG. 3

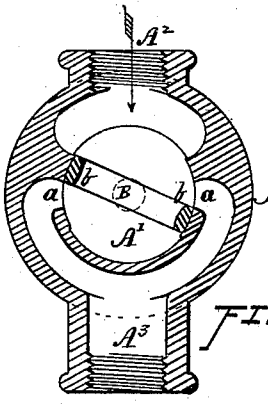


FIG. 4

WITNESSES

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UNITED STATES PATENT OFFICE.

EDWARD WRIGHT, OF WORCESTER, MASSACHUSETTS.

STEAM-ENGINE GOVERNOR.

SPECIFICATION forming part of Letters Patent No. 245,688, dated August 16, 1881.

Application filed March 12, 1881. (Model.)

To all whom it may concern:

Be it known that I, EDWARD WRIGHT, of Worcester, in the county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Steam-Engine Governors; and I declare the following to be a description of my said invention, sufficiently full, clear, and exact to enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

My present invention relates to certain improvements in governors for steam-engines, the objects in view being simplicity of construction, efficiency of action, and convenience of adjustment. These objects I attain by mechanism, substantially such as shown in the accompanying drawings, the constructive features of which are hereinafter described, and the particular subject-matter claimed definitely specified.

In the drawings, Figure 1 is an elevation view of my improved governor mechanism, the governor-standard being shown in section in direction of line *x*. Fig. 2 is a top or horizontal view, with the valve mechanism shown in section in direction of line *y*. Fig. 3 is an elevation view, looking toward the inner end of the governor-spindle. Fig. 4 is a vertical sectional view through the valve-chamber in direction of line *z z;* and Fig. 5 is a sectional view of the valve-rod cap on a larger scale.

The reference-letter A denotes the valve-box, provided with a central cylindrical chamber, A′, in which the valve B is located, said chamber being furnished at its opposite sides with suitable valve seats and ports, *a a*, as shown.

A^2 and A^3 respectively indicate the inlet and exit passages for the steam through the valve-box. The steam, flowing in the direction indicated by the arrow, passes freely into the interior of the chamber A′ and valve B; thence out the ports *a a* and passage A^3 to the engine. Suitable screw-threaded or flanged hubs are provided about the passages A^2 A^3, for convenient attachment with the induction-pipe of the engine.

The valve B is made in the form of a rectangular open frame, hung to swing at the central axial line within the cylindrical chamber A′, so that its side bars, *b b*, will open and close the ports *a*, the valve being in balance by equal steam-pressure on each of its sides. The valve has a spindle, B′, extending through a packing-bushing, C, screwed into a suitable hub or boss on the face-plate of the valve-box, (see Fig. 2,) and said spindle is made with a beveled shoulder, *c*, that fits against a corresponding bevel on the bushing C, with a ground joint, so that the pressure of steam holding the bevels together serves to make a tight bearing without other packing.

A screw-center, *d*, may be used in the opposite side of the valve, to prevent any jarring or shaking of the valve, although this screw-center may be omitted, if desired.

The face-plate of the valve-box is made with a central boss for fitting into the circular end of the chamber A′, and said plate is secured to the box by screws passing through its flange, as indicated. The arrangement of the parts permits of the castings being conveniently bored out for accurately fitting the valve-seats.

D indicates the governor-balls and their levers, formed as shown, and pivoted to suitable arms or ear-pieces on the revoluble sleeve E, which latter is furnished with a pulley or gear wheel, E′ for operating the parts.

F indicates the bearing piece or stud on which the sleeve E is supported and revolves. Said stud is formed hollow, with a suitable retaining-head at its outer end, and has its inner end rigidly secured in an arm or bracket, G, projecting from the valve-box A, by means of a set-screw, *f*, or otherwise.

H indicates a tube or spring-bearing stop, screw-threaded to and within the inner end of the hollow stud F, and having a suitable milled or other formed head, *h*, whereby it can be screwed in or out for varying the tension of the spring K and adjusting the governor for different speeds.

I indicates the valve-operating rod extending through the center or axis of the supporting-stud F and tube H, and having its end connected for action with the valve B, in the present instance by means of a sliding rack, L, which meshes by gear-teeth with an arm, M, fixed to and depending from the valve-stem B′. The other end of said rod I is provided with a head, I′, of somewhat greater diameter than the rod, which serves as a guiding-bearing in the end of the hollow stud F, and as an abut-

ment for the end of the spring K, which latter is coiled about the rod I, between its head I′ and the head of the tube H, as indicated in Fig. 1.

N indicates a bearing cap or button placed over and revolving loose on the end of rod I, or its head I′, and which serves as a seat for the ends D′ of the governor-ball levers, which rest against and slide on the flat top surface of said cap as the balls swing outward or inward. Said cap is made as shown in Fig. 5, and is furnished with an anti-friction disk, *n*, of rawhide or other suitable material, against which the end of the rod bears.

The action of my improved mechanism will be understood by the description and drawings. The reciprocation of the rod I by the movement of the ball-levers oscillates the arm M and valve B and effects the vibration of the valve sides *b* past the ports *a a*, allowing more or less steam to pass, as required.

In lieu of the rack L the rod I may be connected, by a pivot or otherwise, directly to the arm M, if desired.

A channel for oil may be formed around the interior of the cap N, as indicated at *o*, Fig. 5.

What I claim as of my invention, and desire to secure by Letters Patent, is—

The combination, with a suitable governor, of the valve B, constructed as shown, and having a spindle, B′, with beveled shoulder *c*, and the adjustable bushing C, surrounding the smaller part of said spindle and provided with a bevel end face coming in direct contact with the bevel shoulder, whereby the pressure of steam will hold the bevels together to make a tight bearing without other packing, substantially and for the purpose set forth.

Witness my hand this 9th day of March, A. D. 1881.

EDWARD WRIGHT.

Witnesses:

CHAS. H. BURLEIGH,

S. R. BARTON.