(No Model.)

H. TABOR.

STEAM ENGINE GOVERNOR.

No. 303,895. Patented Aug. 19, 1884.

FIG. 1.

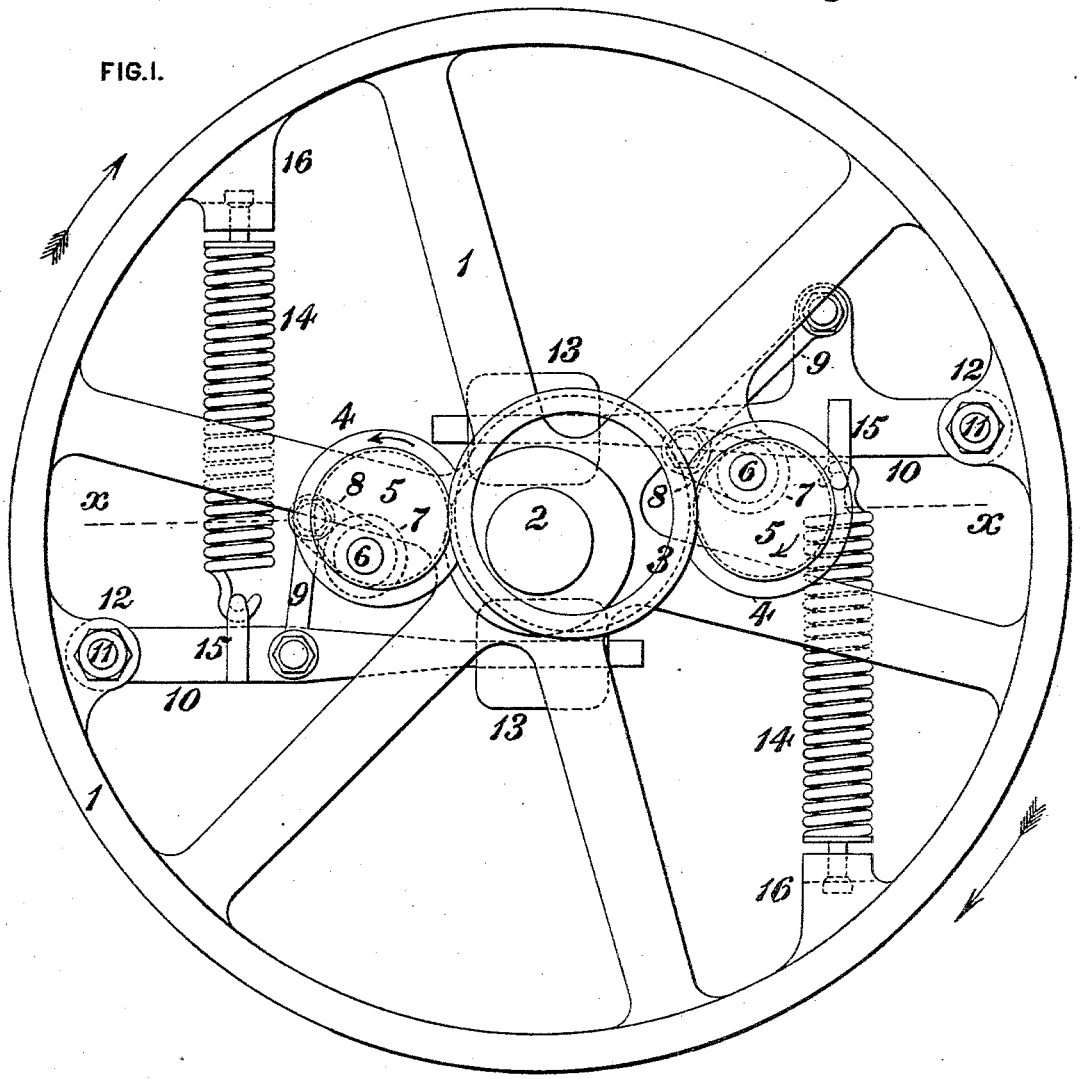
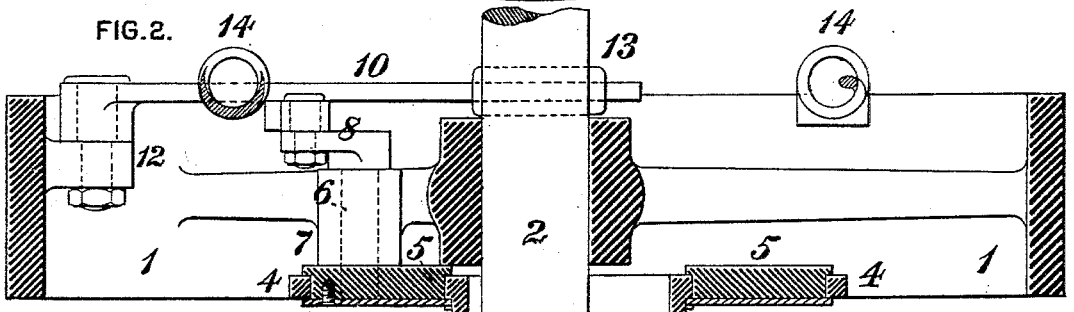


FIG. 2.



WITNESSES:

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HARRIS TABOR, OF ALLEGHENY, PENNSYLVANIA, ASSIGNOR OF ONE-HALF TO DANIEL A. WIGHTMAN, OF SAME PLACE.

STEAM-ENGINE GOVERNOR.

SPECIFICATION forming part of Letters Patent No. 303,895, dated August 19, 1884.

Application filed April 21, 1884. (No model.)

To all whom it may concern:

Be it known that I, HARRIS TABOR, of the city and county of Allegheny, in the State of Pennsylvania, have invented certain new and useful Improvements in Steam-Engine Governors, of which improvements the following is a specification.

My invention relates to centrifugal governors of the class to which regulation is effected by varying the throw of a valve-operating eccentric, and consequently the travel of the valve operated thereby, by the movements of weights or pendulums under the influence of varying degrees of induced centrifugal force; and its object is to provide in a governor of such character simple and efficient means for effecting the movement of the valve eccentric transversely to the axis of the shaft with which it is connected.

The improvements claimed are hereinafter fully set forth.

In the accompanying drawings, Figure 1 is a view in elevation of a governor embodying my invention, and Fig. 2 a transverse section through the same at the line *x x* of Fig. 1.

In the practice of my invention I employ as the support of the operative mechanism a wheel, disk, or case, 1, which is keyed or otherwise firmly secured to the main crank-shaft 2 of the engine, or to a counter-shaft driven therefrom. The eccentric 3, which actuates the main or distribution valve of the engine, is fitted freely around the shaft 1, so as to have the capacity of movement transversely thereto, and may be either in the form of an annulus, as shown, or be slotted transversely to admit of the range of movement required. Two rings or sockets, 4, are formed upon or secured to the eccentric 3 on diametrically-opposite sides of its center, said rings forming the straps or bearings of eccentrics or crank-pins 5, each of which is secured upon one end of a shaft, 6, or on an arm thereon, said shafts being mounted in bearings 7 on the governor-case 1, and adapted to move axially therein parallel with the shaft 1. Each of the shafts 6 has secured upon its opposite end an arm, 8, which is coupled by a link, 9, to a weight-arm, 10, journaled at one end by a stud or pivot, 11, to a bearing, 12, on the case 1, and carrying at or near its free end a weight or pendulum, 13. Springs 14, acting in opposition to the centrifugal force of the weights 13, are coupled at one end to hooks or clevises 15 on the weight-arms 10, and secured at their opposite ends to seats or projections 16 on the case 1.

In operation, outward movements of the weight-arms 10, induced by the action of centrifugal force upon their weights 13, will, through the links 9, arms 8, and shafts 6, rotate the eccentrics or crank-pins 5 in the direction of the short arrows and move the valve-eccentric 3 rectilineally and transversely to the shaft 1 from the position in which it is shown, being that of greatest eccentricity, toward the left of Fig. 1, thereby reducing its radius of eccentricity, and consequently the traverse of the valve which it operates, proportionately to the degree of movement of the weights, and the inward movement of the weight-arms under the centripetal action of the springs 14 will correspondingly move the valve-eccentric in the opposite direction. The mechanism of the governor is simple, compact, and inexpensive, and in application to rotative engines of any of the known constructions, to which it is readily adaptable, presents the advantages of sensitiveness in the adjustment of the eccentric, and steadiness of the latter in its different adjusted positions corresponding with the grades of expansion required to maintain uniform speed of the engine under variations of pressure and load.

I claim as my invention and desire to secure by Letters Patent—

1. In a centrifugal governor, the combination of a valve-eccentric having an opening or transverse slot adapted to fit freely over a crank-shaft, a pair of rings or sockets connected to said eccentric on opposite sides of its center, respectively, and eccentrics fitting in said rings, substantially as set forth.

2. In a centrifugal governor, the combination of a supporting disk or case, a valve-eccentric having an opening or transverse slot adapted to fit freely over a crank-shaft, a pair of rings or sockets connected to said valve-eccentric on opposite sides of its center, respectively, eccentrics or crank-pins fitting in said rings, and mechanism for rotating said

eccentrics within their rings by the movement of weighted arms pivoted to the governor-case, substantially as set forth.

3. In a centrifugal governor, the combination of a supporting disk or case, a valve-eccentric which is open or slotted to embrace a crank-shaft, with the capacity of movement transversely thereto, two rings or sockets connected to said valve-eccentric on opposite sides of its center, respectively, eccentrics fitting said rings and secured upon shafts mounted on bearings in the governor-case, links connecting arms on said shafts with arms pivoted at one end to the governor-case, and carrying weights or pendulums on their opposite ends, and springs coupled at one end to the governor-case and at the other to the weight-arms, substantially as set forth.

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Witnesses:
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