

C. B. EDWARDS.
ENGINE GOVERNOR.
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971,431.

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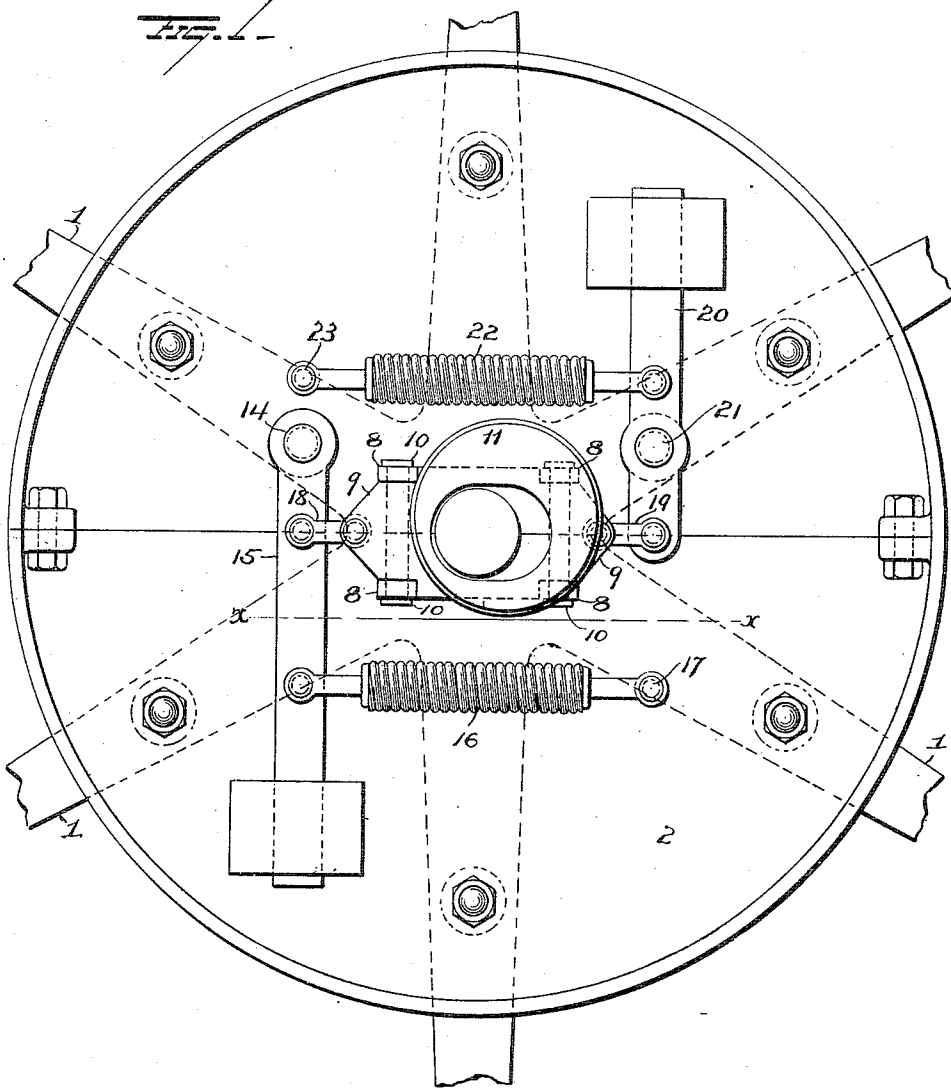
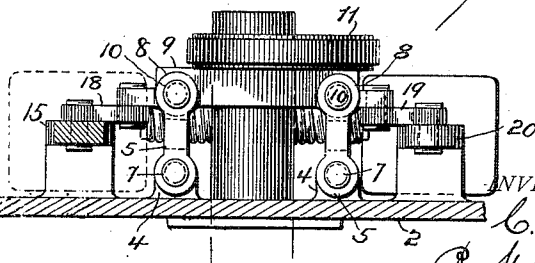


FIG. 2.



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ENGINE-GOVERNOR.

971,431.

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To all whom it may concern:

Be it known that I, CHARLES B. EDWARDS, of Massillon, in the county of Stark and State of Ohio, have invented certain new and useful Improvements in Engine-Governors; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in engine governors, and more particularly to that type which is applied to the fly-wheel of an engine and provided with a shifting eccentric connected with the engine valve.

The object of my present invention is to provide simple and efficient means for effecting, through the medium of the centrifugal force of weighted arms, an approximately straight movement of the shifting eccentric whereby the cut-off can be shortened and the lead kept constant.

With this object in view the invention consists in certain novel features of construction and combinations of parts as hereinafter set forth and pointed out in the claims.

In the accompanying drawings, Figure 1 is a face view illustrating a governor embodying my improvements, and Fig. 2 is a view in section on the line $x-x$ of Fig. 1.

1 represents the fly-wheel of an engine having secured thereto a disk or plate 2, the axis of which may be coincident with the axis of the shaft on which the fly-wheel is mounted. The disk 2 may be made in sections and is preferably provided with a flange or ring 3 projecting in one direction therefrom and constituting, with said disk, a casing for inclosing the governor devices. The plate or disk 2 is provided on its outer face near its center with lugs 4. Arms 5, 5, are disposed approximately at right angles to the face of the disk and are provided at their inner ends with lugs or projections 6 having perforations for the accommodation of pins 7 whereby they are hinged or pivotally connected with said lugs 4 on the disk 2. At their outer ends, the arms 5 are provided with lugs 8 and between the pairs of lugs 8 of the respective arms, the respective ends of a block or plate 9 are disposed and this block or plate 9 is pivotally connected with the lugs of the two arms by means of suitable pivot pins 10. The block or plate 9 has

secured thereto, a wheel 11 provided with an elongated slot 12. With the construction and arrangement of parts above described, the wheel 11 will be disposed so that its axis will be located at one side of the axis of the engine shaft and therefore the wheel 11 will constitute an eccentric which is connected in the usual manner with the valve of the engine so that when the fly-wheel and its shaft rotate, motion will be imparted by the eccentric 11 through the medium of the usual eccentric strap and pitman (not shown) to the valve of the engine. An extension 13 of the engine shaft projects through the elongated slot 12 in the wheel or eccentric 11.

A post 14 projects from the disk 2 and to this post, one end of a weighted arm 15 is pivotally connected, and one end of a spring 16 is connected with said weighted arm, the opposite end of said spring being connected with a post 17 on the disk 2. The weighted arm 15 has connected thereto, at a point between its ends, one end of a link 18, the other end of said link being attached to the plate or block 9 which carries the eccentric wheel 11. The opposite end of said plate or block 9 is connected by means of a link 19 with one end of a weighted arm or lever 20, the latter being pivotally supported between its ends on a post 21 projecting from the plate or disk 2, and having attached thereto between its pivotal support and weight, one end of a spring 22, the opposite end of the latter being attached to a post 23 on the disk 2.

From the construction and arrangement of parts above described it is apparent that when the speed of an engine shaft increases beyond a normal degree, the effect of the centrifugal force of the weighted pivoted arms acting in opposition to the springs, will be to cause the eccentric 11 to be moved in an approximately straight line on its hinged support afforded by the pivoted arms 5, 5.

My improvements reduce the governor to a minimum number of parts without detracting from the efficiency of the governor in the performance of the functions for which it is intended.

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

1. In a governor, the combination with a plate or disk adapted for connection with an

engine shaft, of an eccentric, means afford-
ing hinged-connection of said eccentric with
said plate or disk, and centrifugal devices
connected with said hinged eccentric and
5 supported by the plate or disk.

2. In a governor, the combination with a
plate or disk adapted for connection with a
fly-wheel of an engine, arms pivotally con-
nected with said plate or disk, an eccentric
10 supported by said pivoted arms with its
center out of line with the center of said disk
or plate, and centrifugal devices supported
by said plate and connected with the hinged
eccentric.

15 3. In a governor, the combination with a
plate or disk adapted for attachment to a fly-
wheel of an engine and provided with en-
largements on one face, of arms pivotally
attached at one end to the enlargement on

the disk or plate, a block to which the outer 20
ends of said arms are pivotally connected,
an eccentric secured to said block and having
an elongated slot for the passage of an ex-
tension of the engine shaft, weighted arms
pivotally supported by the disk or plate, 25
links connecting said arms with respective
ends of the blocks which carry the eccentric,
and springs connected with said weighted
arms to oppose the outward movements
thereof. 30

In testimony whereof, I have signed this
specification in the presence of two subscrib-
ing witnesses.

CHARLES B. EDWARDS.

Witnesses:

TURENNE GETZ,
FRED STRYKER.