

R. H. PYLE.
GOVERNOR.
APPLICATION FILED OCT. 4, 1912.

1,062,605.

Patented May 27, 1913.

Fig - 1 -

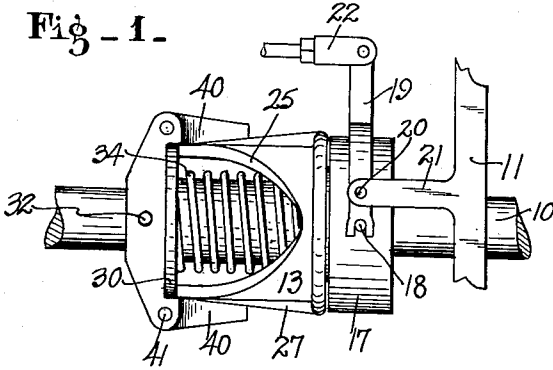


Fig - 2 -

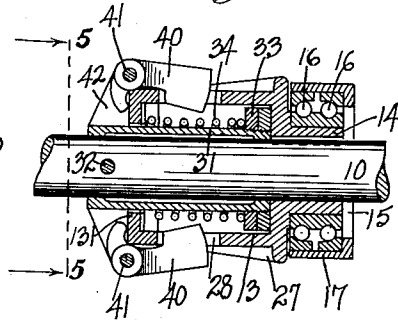


Fig - 3 -

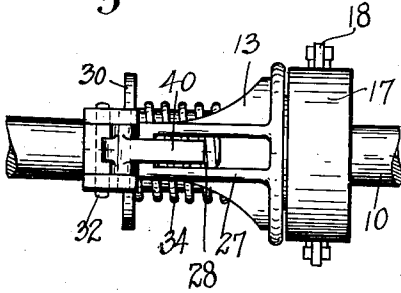


Fig - 4 -

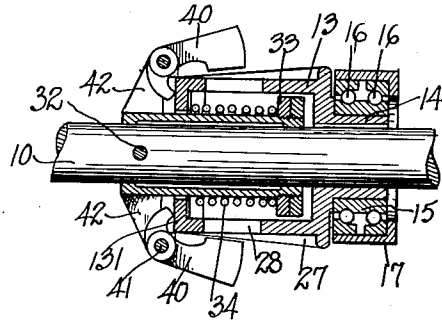
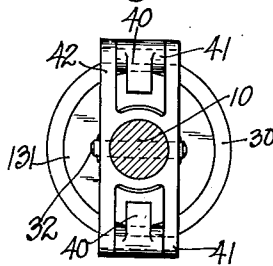


Fig - 5 -



WITNESSES:
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UNITED STATES PATENT OFFICE.

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GOVERNOR.

1,062,605.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, ROBERT H. PYLE, of Indianapolis, county of Marion, and State of Indiana, have invented a certain useful Governor; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings.

The object of this invention is to provide an improved construction of centrifugal governor particularly adapted for controlling valves or other mechanisms for steam engines:

The nature of the invention will be understood from the accompanying drawings and the following description and claims.

In the drawings, Figure 1 is a side elevation of the governor in idle condition, parts being broken away. Fig. 2 is a central vertical longitudinal section through the same. Fig. 3 is a plan view. Fig. 4 is a section similar to Fig. 2 showing the parts actuated. Fig. 5 is a section on the line 5-5 of Fig. 2.

In the drawings there is shown a shaft 10 mounted in a fixed frame 11. A casing 13 surrounds the shaft 10 and has a reduced portion 14 which hugs the shaft 10 but is slidable longitudinally thereon. A bearing 15 surrounds the reduced portion 14 in said casing. A bearing 16 surrounds the bearing 15 and between them balls are located forming a ball bearing. A band 17 surrounds said bearing and on its opposite sides there are pins 18 which engage the lower ends of a yoked bar 19. The yoke is astride the band 17 and at each side at 20 the yoke is fulcrumed to a bar 21 from the fixed frame 11. A rod 22 is pivoted to the upper end of the bar 19 and from it power is transmitted to the device which is to be governed, as the sleeve 14 slides to and fro on the shaft 10.

The casing 13 not only has the reduced portion 14 at one end, but has an enlarged portion cut away on opposite sides, as at 25, so that the right-hand end of said casing which surrounds the shaft, is inclosed, but the left-hand half is cut out on each side, as shown at 25, so as to leave on two opposite sides projecting arms tapering from right to left, as shown in Fig. 3, and each projecting portion has a pair of longitudinal ribs 27, as shown, and between the left-hand ends of said ribs 27 there is a longitudinal slot 28 which extends from the left-hand end almost half the length of the casing. A ring 30

forms the left-hand end of the casing, being integral with the tapered ends thereof and the ribs 27. The ring 30 is contracted, as shown in Fig. 4, so as to loosely engage a fixed sleeve 31 surrounding the shaft 10. Said sleeve 31 is pinned to the shaft by a pin 32. The major portion of the sleeve 31 projects into the enlarged portion of the casing, see Fig. 2, and at its inner end is externally threaded for the ring nuts or collars 33. A helical spring 34 surrounds the sleeve 31 and runs between the collars 33 at one end and the inwardly turned end 131 of the casing 31 so that said spring tends to return the casing and parts giving them a left-hand movement, after the same have been operated.

Weighted levers 40 are fulcrumed between their ends at 41 to extensions 42 from the left-hand end of the sleeve 31, being that portion which lies outside of the casing 13. The body of the weights extends parallel with the shaft and to the right and operates through the openings 28 in the casing 13.

As the rotative speed of the shaft 10 increases centrifugal force will throw the weighted ends of the arms 40 outwardly, as shown in Fig. 4, and the other ends of said levers by bearing against the left-hand end of the casing 13, that is the ring portion 30, will slide said casing 13 to the right and thereby actuate the lever 19 and the means which is to be governed.

I claim as my invention:

1. The combination with a shaft, of a centrifugal governor consisting of a casing surrounding the same and having at one end a reduced portion slidable on the shaft and at the other end an enlarged portion, means adapted to be actuated by the sliding movement of said casing for controlling the thing to be governed, a sleeve secured to and surrounding the shaft and projecting into the enlarged portion of the casing, a pair of weighted levers pivoted to opposite sides of said fixed sleeve and adapted when actuated by centrifugal force to slidably move said casing on the shaft, and a spring between said sleeve and casing tending to return the latter.

2. The combination with a shaft, of a centrifugal governor consisting of a casing surrounding the same and having at one end a reduced portion slidable on the shaft and at the other end an enlarged portion with

a contracted end, means adapted to be actuated by the reduced portion of said casing for controlling the thing to be governed, a sleeve secured to and surrounding the shaft and projecting into the enlarged portion of the casing and externally threaded on its inner end, a collar on the threaded end of said sleeve, a helical spring within the enlarged portion of the casing and surrounding said sleeve and lying between said collar and the contracted end of the sleeve, arms extending from the portion of the sleeve outside the casing, and weighted levers fulcrumed to the ends of said arms with the ends engaging the contracted end of the casing so as to move the same under the influence of centrifugal force against said spring.

3. The combination with a shaft, of a centrifugal governor consisting of a casing surrounding the same and having at one end a reduced portion slidable on the shaft and at the other end an enlarged portion with a contracted end and cut partially away on opposite sides and the portions which are not cut away being reinforced by parallel longitudinal ribs and with an opening through the casing between said ribs, means

adapted to be actuated by the reduced portion of said casing for controlling the thing to be governed, a sleeve secured to and surrounding the shaft and projecting into the enlarged portion of the casing and externally threaded on its inner end, a collar on the threaded end of said sleeve, a helical spring within the enlarged portion of the casing and surrounding said sleeve and lying between said collar and the contracted end of the sleeve, arms extending from the portion of the sleeve outside the casing, and weighted levers fulcrumed on the ends of said arms with the weighted portion operating through the openings in the side of said casing and with the other ends of the levers engaging the reduced ends of said casing for slidably moving the same against the action of the spring when the levers are influenced by centrifugal force.

In witness whereof, I have hereunto affixed my signature in the presence of the witnesses herein named.

ROBERT H. PYLE.

Witnesses:

G. H. BOINK,
E. H. MAYO.