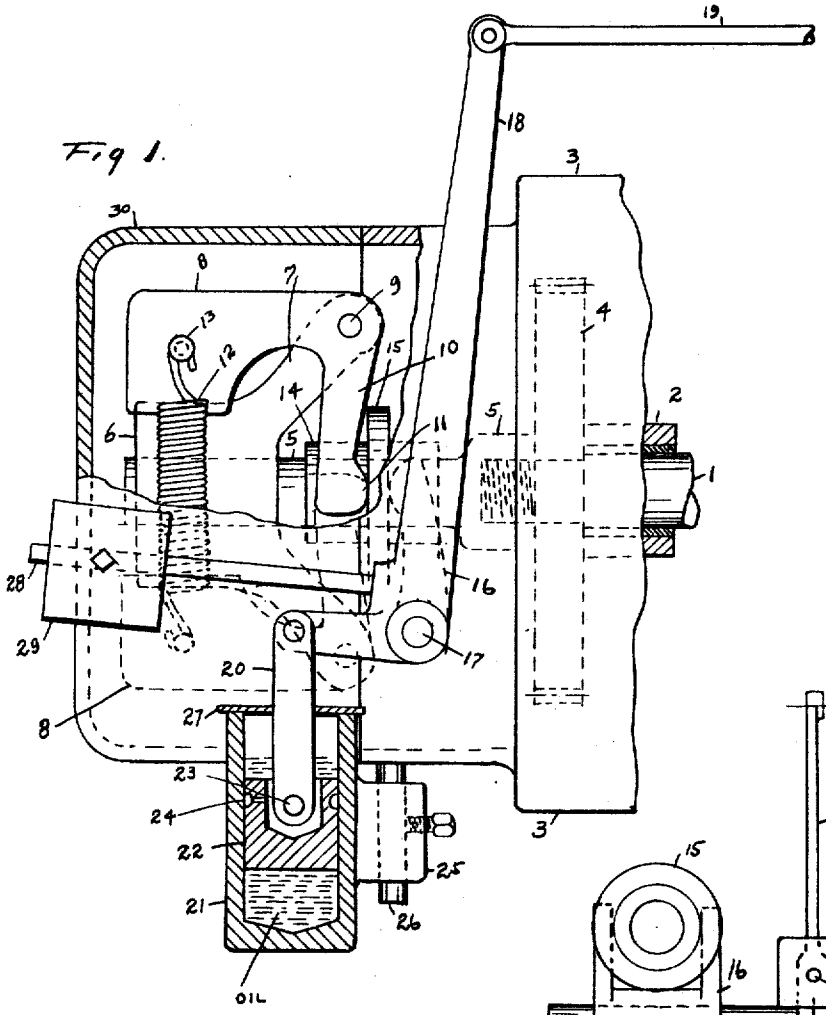
L. J. MONAHAN.

GOVERNOR.

APPLICATION FILED SEPT. 13, 1918.

1,304,348. Patented May 20, 1919.

Fig 1.



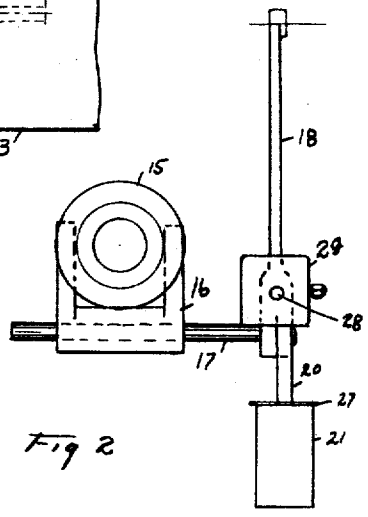




Fig 2

INVENTOR

Louis J Monahan

# UNITED STATES PATENT OFFICE.

LOUIS J. MONAHAN, OF OSHKOSH, WISCONSIN, ASSIGNOR TO UNIVERSAL MOTOR COMPANY, OF OSHKOSH, WISCONSIN.

## GOVERNOR.

1,304,348. Specification of Letters Patent. Patented May 20, 1919.

Application filed September 13, 1918. Serial No. 253,911.

*To all whom it may concern:*

Be it known that I, LOUIS J. MONAHAN, a citizen of the United States, residing at Oshkosh, in the county of Winnebago and State of Wisconsin, have invented certain new and useful Improvements in Governors, of which the following is a specification.

The invention relates to a new governor for internal combustion engines and has for its object the combination of mechanical movements and devices to effect a compact governor that will maintain a uniform speed and prevent engine speed fluctuation due to uneven pull on throttle valve.

In the drawings Figure 1 shows a complete governor partly in section and Fig. 2 an end view of the sliding collar and follow fork.

The governor proper is mounted on a cam shaft 1 which is journaled in a bearing 2 which forms part of a crank case 3, the cam shaft having a gear 4 keyed thereon.

A governor shaft 5 is fitted to screw on to the cam shaft up against the gear 4.

A yoke 6 is secured on the governor shaft 5 and has extending arms 7. Governor weights 8 of peculiar form and having forked openings at one portion thereof are fitted over the yoke and pivoted thereto at 9, an arm 10 formed with the weight extends at right angles to the weight and has a rounded portion 11.

A pair of tension springs 12 are attached to the weights by means of pins 13 and serve to normally draw the weights together against the hub of the yoke 6.

A hardened collar 14 having a flanged portion 15 is fitted to slide on the shaft 5 with the flanged portion adapted to rest against the rounded portion of the governor weight arm 11.

A fork 16 is fitted to a shaft 17 which is journaled in the crank case body 3, the shaft extending out through one side thereof. The fork 16 is positioned so its feet rest against the flange 15 opposite the governor weight arms 11.

A lever 18 is secured to the shaft 17 and is of bell crank form, the upper end having means for attaching a governor rod 19 which is connected with the throttle valve of the engine carbureter, while the lower end extends forward and has a link 20 pivoted thereto.

A dash pot 21 is provided and comprises a casting bored out to receive a piston 22 which is fitted to slide therein. The piston is bored out centrally to receive the lower end of the link 20 which is pivoted therein at 23. The piston has a groove 24 formed thereabout and a hole drilled through the piston from the groove 24 to the central opening to prevent oil from being forced out over the top of the dash pot. The dash pot is supported by means of a lug 25 formed therewith which is fitted on a pin 26 extending from the frame 3. A loose cover 27 is provided to prevent dirt from entering the dash pot.

A rod 28 is fitted into the lever 18 and carries a sliding weight 29 which may be set at any desired point along the rod 28.

A cover 30 is fitted to cover the governor oil tight so the whole may run in oil and is secured by bolts or screws in a conventional fashion.

In operation, the cam shaft revolving carrying the yoke 6 and weights 8 at a given speed causes the weights 8 to fly outwardly against the tension of the springs 12, the weight 29 acting through the lever 18, shaft 17 and fork 16 forces the collar 14 to follow up the arms 10 of the weights 8, but this follow up action is not sudden due to the movement absorbing action of the dash pot plunger 22, allowing the movement of its connected parts to act slowly and having the same effect on the carbureter throttle. When the speed slows down the arms 10 force the collar 14 back which movement is followed by the fork 16, lever 18, and their connecting parts.

The springs 12 are made in the proper size to give the desired speed to the motor but should a slight change in the speed be desired, as for instance to bring the voltage up or down in electrical work, the weight 29 may be moved along the shaft 28, inwardly to increase speed or outwardly to decrease speed.

The oil in the dash pot acts as a cushion to prevent sudden fluctuation due to the resistance offered by a closed throttle, as ordinarily without this dash pot the governor would fluctuate due to the throttle valve resisting when in a closed position because of the air pressure entering against the valve and tending to hold it against its bearings.

This dash pot effect of causing slow movement of the levers overcovers this objection.

I claim,

1. The combination with a rotatable shaft, of a collar slidably mounted on said shaft, a member fixed to said shaft and having projecting arms, weights pivotally connected to said arms, levers integral with said weights and engageable with one side of said collar, springs connecting said weights for normally drawing the same toward each other, a rock shaft extending at right angles to said shaft, a forked member fixed to the rock shaft and engageable with the opposite side of said collar, a bell-crank lever fixed to said rock shaft, a dash pot cylinder mounted adjacent said rock shaft, a piston movable in said cylinder and having a rod pivotally connected to one arm of the bell-crank lever, a lever fixed to the other arm of the bell-crank lever, and a weight mounted on the fixed lever and tending to force said forked member to move said collar as the speed of the shaft increases but to oppose the movement of the collar as the speed decreases.

2. The combination with a rotatable shaft, of a member fixed to the shaft and having projecting arms, weights pivotally connected to said arms and carrying levers, a collar slidably mounted on the shaft and engageable on one side by the weight levers, springs connected to said weights for moving the same toward each other, a fork engaging the other side of the collar, a rocking shaft to which the fork is rigidly fixed, an operating lever fixed to said rocking shaft, a weight carried by said operating lever and tending to move the fork to move said collar as the speed of the shaft increases but to oppose the movement of the collar as the speed decreases, a rigidly mounted dash pot, and a piston connected to said operating lever and movable in said dash pot for arresting sudden movement of the operating lever.

In testimony whereof I affix my signature.

LOUIS J. MONAHAN.

**Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."**