

V. W. CREECH.

GOVERNOR.

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1,066,586.

Patented July 8, 1913.

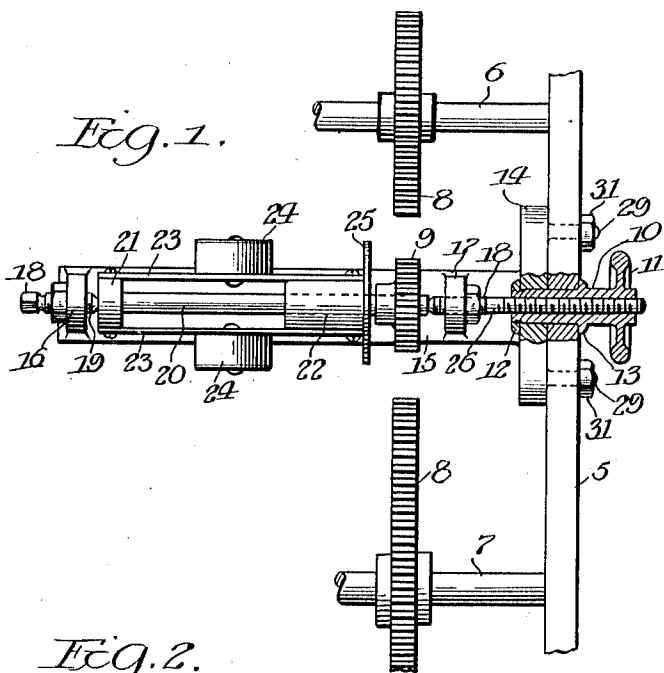


Fig. 2.

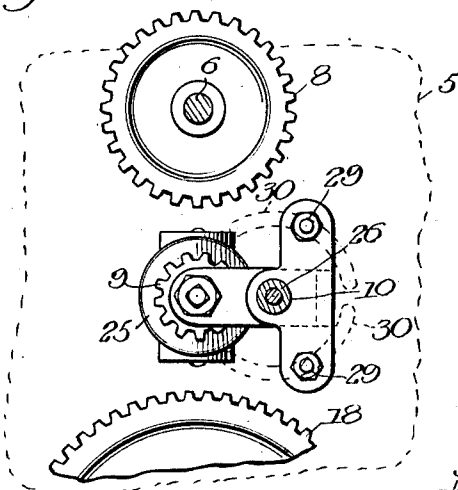
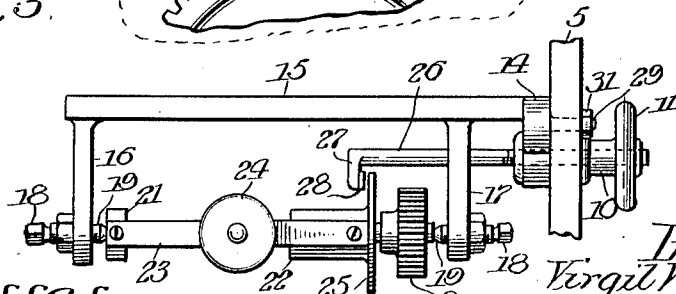


Fig. 3.



Witnesses
On Munnich
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UNITED STATES PATENT OFFICE.

VIRGIL W. CREECH, OF MASON CITY, IOWA.

GOVERNOR.

1,066,586.

Specification of Letters Patent.

Patented July 8, 1913.

Application filed September 27, 1912. Serial No. 722,712.

To all whom it may concern:

Be it known that I, VIRGIL W. CREECH, a citizen of the United States, residing at Mason City, in the county of Cerro Gordo and State of Iowa, have invented certain new and useful Improvements in Governors, of which the following is a specification.

This invention relates to improvements in a governor or regulating device, to be used on various kinds of machines for controlling and regulating the speed thereof, or of one or more shafts of said machines; and it consists in certain peculiarities of the construction, novel arrangement and operation of the various parts thereof, as will be hereinafter more fully set forth and specifically claimed.

The principal object of the invention is to provide a governor which, while it is more particularly applicable for use on spring motors for regulating the speed of certain parts thereof, yet is also adapted for governing or controlling parts of other kinds of machines, and which shall be simple and inexpensive in construction, strong, durable and effective in operation.

In order to enable others skilled in the art to which the invention pertains to make and use the same, I will now proceed to describe it, referring to the accompanying drawing, in which—

Figure 1 is a view in side elevation of a governor embodying the invention, showing it mounted on a portion of the supporting frame of a machine, the movements of which the governor is employed to control or regulate. Fig. 2 is a face view partly in section of like parts showing a portion of the supporting frame by dotted lines and Fig. 3 is a plan view of the governor and a part of the supporting frame, but with the rotary shafts of the machine omitted.

Like numerals of reference refer to corresponding parts throughout the different views of the drawings.

The reference numeral 5 designates a part of the upright portion of the supporting frame of a machine such as a spring motor, on which is horizontally journaled in parallelism with one another a pair of shafts 6 and 7, each of which has mounted thereon, preferably in vertical alinement with one another, a cogged gear 8, with which a pinion 9, on the governor shaft is adapted to mesh one at a time when the support of the governor is properly adjusted.

Horizontally mounted in the supporting frame 5, between the shafts 6 and 7 thereon, and slightly to one side thereof, is an internally screw threaded sleeve 10, which has on its outer portion a hand wheel or handle 11, by means of which it can be turned. This sleeve is provided on its inner end with a nut 12, and on its outer end with an annular flange 13, to prevent its longitudinal movement within the support 5, yet to allow rotary movement thereof. Rotatably mounted on the inner portion of the sleeve 10, between the nut 12, and supporting frame 5, is a cross head 14, from which is horizontally extended in parallelism with the shafts 6 and 7, a supporting bar 15, which has near its free end a laterally extended horizontal arm 16, and near its other end a similarly disposed arm 17, in each of which is seated an adjusting screw 18, the adjacent or inner ends of which are pointed or conical in shape as shown at 19, to fit in suitable sockets in the ends of the governor shaft 20, thus affording bearings for said shaft with greatly reduced friction.

Fixed on the end of the governor shaft 20, near the arm 16, is a collar 21, and slidably mounted on said shaft near the arm 17, is a sleeve 22, which collar and sleeve are connected by means of a pair of springs 23, which are located diametrically opposite each other, and each has secured thereto at about its middle a weight 24, which may be of any suitable size and shape. Secured to the sleeve 22, is a friction disk 25, which is adapted to rotate and slide with said sleeve in the operation of the device.

Keyed to the shaft 20, near the end thereof, adjacent to the arm 17, is the pinion 9, which, as before stated, is adapted to mesh with the gears 8, when the supporting bar 15, for the governing mechanism is properly adjusted. Extended through the sleeve 10, and through a suitable opening in the arm 17, of the support for the governor is an adjusting rod 26, which has on its inner end a projection 27, which is provided on its face, adjacent to the friction disk 25, with a resilient pad 28, of leather or other suitable material. The cross head 14, of the governor support 15, is provided near each of its ends with a screw bolt 29, which are extended through segmental openings 30, formed in the supporting frame 5, of the machine, and said head may be fixed in position by means of nuts 31, one of which

is located on the outer portion of each of said bolts, but when it is desired to adjust the governor support so as to cause the pinion 9, to mesh with either of the gears 8, these nuts may be loosened, when it is obvious that the cross head 14, and support 15, may be tilted or turned on their pivots, provided by the sleeve 10, and adjusting rod 26, which rod serves the double purpose of forming a pivot for a portion of the governor support 15, as well as regulating or stopping the movement of the governor shaft.

From the foregoing and by reference to the drawing it will be readily understood and clearly seen that by turning the hand wheel 11, on the sleeve 10, in the proper direction, the adjusting rod 26, will be drawn outwardly or retracted so that the pad or cushion 28, on its inner portion will contact with the friction disk 25, which is mounted on the governor shaft, so as to slide thereon, yet to rotate therewith. The frictional contact of the pad 28, on the adjusting rod 26, with the friction disk 25, will prevent said disk and the governor shaft 20, turning, and, as the pinion 9, on the governor shafts, meshes with one of the gears 8, on the pulleys or power driven shafts 6 or 7, it is obvious that said shaft will be prevented turning as long as the friction disk 25, is locked. As the shafts 6 and 7, are geared to a power shaft (not shown) or other source of power, and are adapted for the transmission of power to a machine to be operated, it is manifest that by turning the hand wheel 11, in the proper direction the adjusting rod 26, will be advanced so as to release or diminish the pressure of the pad or cushion 28, on said rod against the friction disk, thereby permitting the shaft and its gear, with which the pinion 9 is in mesh, to turn at a greater or less speed as may be desired, from which shaft power may be transmitted to the machine or part to be operated.

Having thus fully described my invention, what I claim and desire to secure by Letters Patent is—

1. The combination with a main supporting frame, of a horizontal support pivotally mounted thereon and having a pair of laterally projected arms extended therefrom, a governor-shaft journaled on said arms, a

driven shaft journaled in parallelism with the governor-shaft, co-acting gearing on said shafts, a plurality of weighted springs longitudinally disposed with respect to the governor-shaft and fixed thereto at one of their ends and movably connected therewith at their other ends, a friction disk connected to said springs and movable therewith, and an adjustable rod mounted on the supporting frame and having means to engage said disk.

2. The combination with a main supporting frame, of a support horizontally and adjustably mounted thereon and having a pair of laterally projected arms extended therefrom, a governor-shaft journaled on said arms, a plurality of driven-shafts journaled in parallelism with the governor-shaft, gearing on said shafts adapted for co-action with one another, a plurality of weighted springs longitudinally disposed with respect to the governor-shaft and fixed thereto at one of their ends and movably connected therewith at their other ends, and a rod adjustably mounted and having means to engage the friction disk.

3. The combination with a main supporting frame, of a horizontal support having at one of its ends a cross-head pivotally mounted on said frame and provided with means to fix it thereto, said support also having laterally projecting arms extended therefrom, a governor-shaft journaled on said arms, a driven-shaft journaled in parallelism with the governor-shaft, gearing on said shafts adapted for co-action with one another, a collar fixed on the governor-shaft near one of its ends and a sleeve slidably mounted on said shaft but rotatable therewith, weighted springs connecting said collar and sleeve, a friction disk mounted on the sleeve to move therewith, and an arm adjustably mounted and provided with means to engage said disk.

In witness whereof I have hereunto subscribed my name this 24th day of September A. D. 1912, in the presence of two subscribing witnesses.

VIRGIL W. CREECH.

Witnesses:

CHAS. C. TILLMAN,
A. S. PHILLIPS.