I. CRABB.

SPEED RESPONSIVE DEVICE.

APPLICATION FILED JULY 9, 1919.

1,332,808. Patented Mar. 2, 1920.

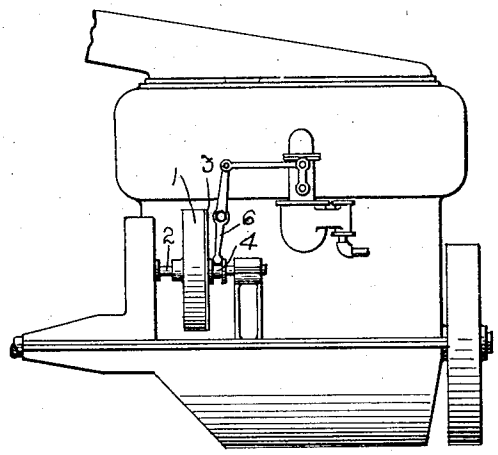


Fig. 1

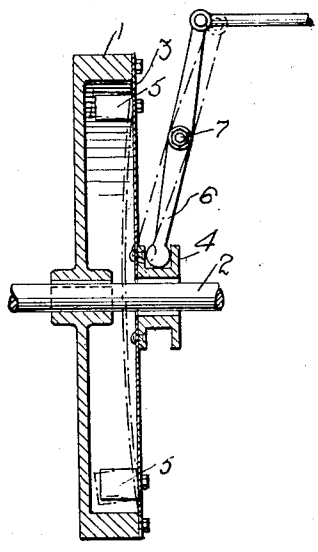


Fig. 2

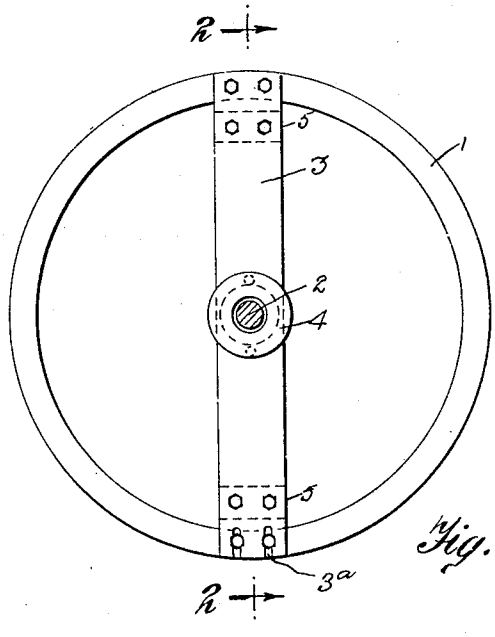


Fig. 3

WITNESSES

A. Fritzinger

INVENTOR

ISAIAH CRABB

BY Munn & Co

ATTORNEYS

UNITED STATES PATENT OFFICE.

ISAIAH CRABB, OF INDEPENDENCE, IOWA, ASSIGNOR TO E. M. MACK, OF OELWEIN, IOWA.

SPEED-RESPONSIVE DEVICE.

1,332,808. Specification of Letters Patent. Patented Mar. 2, 1920.

Application filed July 9, 1919. Serial No. 309,607.

To all whom it may concern:

Be it known that I, ISAIAH CRABB, a citizen of the United States, residing at Independence, county of Buchanan, and State of Iowa, have invented a new and useful Speed-Responsive Device, of which the following is a full, clear, and exact description.

My invention relates to speed responsive devices, and more especially to devices which are operated by variations in centrifugal force produced by variations in speed of rotation, and is especially adapted for use on internal combustion engines.

An object of the invention is to provide a governor which is simple in design and construction, and which is cheap to manufacture and positive in operation.

Another object of the invention is to provide a governor which is extremely sensitive in its operation.

A further object of the invention is to provide a governor which can be readily attached to a rotating element of an internal combustion engine.

I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of an internal combustion engine equipped with the device of my invention.

Fig. 2 is a vertical section of the governor shown in Fig. 1.

Fig. 3 is an end view of the governor shown in Fig. 2.

Similar numerals refer to similar parts throughout the several views.

The governor comprises a hollow flywheel 1, mounted on and keyed to a revolving shaft 2; a flat steel spring 3 positioned across the diameter of the flywheel 1 with one end fixed to the outer edge or rim of the flywheel 1 and the opposite end attached to the rim by a pin and slot connection 3^a; a floating collar 4 attached rigidly to spring 3 at the center point of said spring and concentrically surrounding shaft 2; two governor weights 5 attached rigidly to spring 3 near the outer ends and on the inner side of said spring; an actuating lever 6, pivoted to engine base or frame at bearing 7, one end of said actuating lever being engaged by the floating collar 4 and actuated as it moves in and out along shaft 2, the other end of said actuating lever being connected by means of suitable levers to the throttle valve of the carbureter.

The governor shaft 2 can conveniently be the magneto or pump shaft, or any other shaft which is made to rotate in time with the engine crank shaft. The spring 3 is attached rigidly to one end of, and by a slotted connection to the other end of flywheel 1. This provides the necessary extra length to allow spring 3 to bend inward, as shown by its dotted line position, during the operation of the governor.

As the engine speeds up, centrifugal force acts upon the governor weights 5, which are thus forced outward away from shaft 2, and the spring 3 being rigidly attached to governor weights 5, is bent inward toward the hub of flywheel 2, as shown by dotted lines. The floating collar 4 correspondingly moves in with spring 3, carrying with it one end of actuating lever 6, through which by means of levers the position of the throttle valve on the carbureter is changed.

The floating collar 4 is bored out somewhat larger than shaft 2, over which it is positioned, and so does not bear upon said shaft. In this manner the governor operates almost without friction, thus greatly increasing its sensitiveness.

While I illustrate and describe my governor in operation on an internal combustion engine, it is, of course, understood that it can be applied equally well to steam and other types of engines, with proper modifications.

I claim:

1. A speed responsive device, comprising a shaft, a flywheel mounted on said shaft and made to run in time with the engine crank shaft, a spring attached rigidly at one end to said flywheel and by a slotted connection to the fly wheel at its other end, a weight attached to said spring and adapted to be moved outwardly by centrifugal force so as to bend said spring, a floating collar attached to said spring and positioned concentrically over said flywheel shaft, and an actuating connection from said collar to the throttle valve of the engine.

2. A speed responsive device, comprising a shaft, a flywheel mounted on said shaft and made to run in time with the engine crank shaft, a spring attached rigidly at one end to the rim of said flywheel and by slotted connection to the rim at its other end,

weights attached to said spring and adapted to be moved outwardly by centrifugal force so as to bend said spring, and an actuating connection between said spring and the throttle valve of engine.

3. A speed responsive device, comprising a shaft, a flywheel mounted on said shaft and made to run in time with engine crank shaft, a spring attached rigidly at one end to the rim of flywheel and by slotted connection to the rim at its other end, weights attached to said spring and adapted to be moved outwardly by centrifugal force so as to bend said spring, a floating collar attached to said spring and positioned concentrically over said flywheel shaft, and an actuating connection from said collar to the throttle valve of the engine.

ISAIAH CRABB.