(No Model.)

G. F. BOOS.

STOP MOTION FOR GOVERNORS.

No. 589,635. Patented Sept. 7, 1897.

Fig. 1.

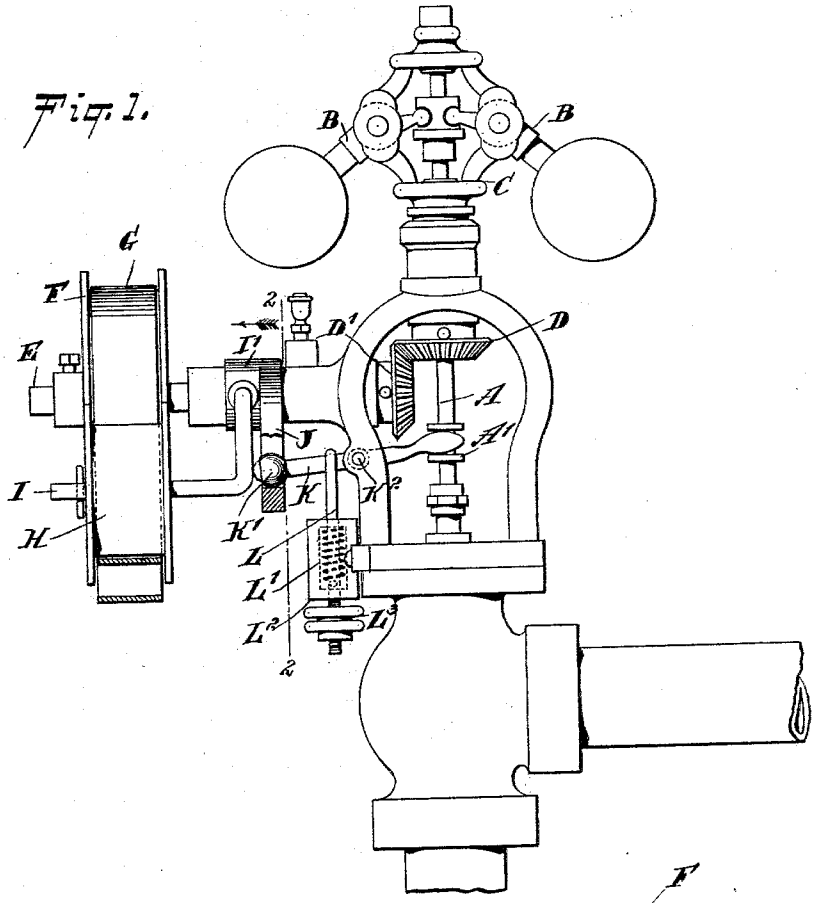
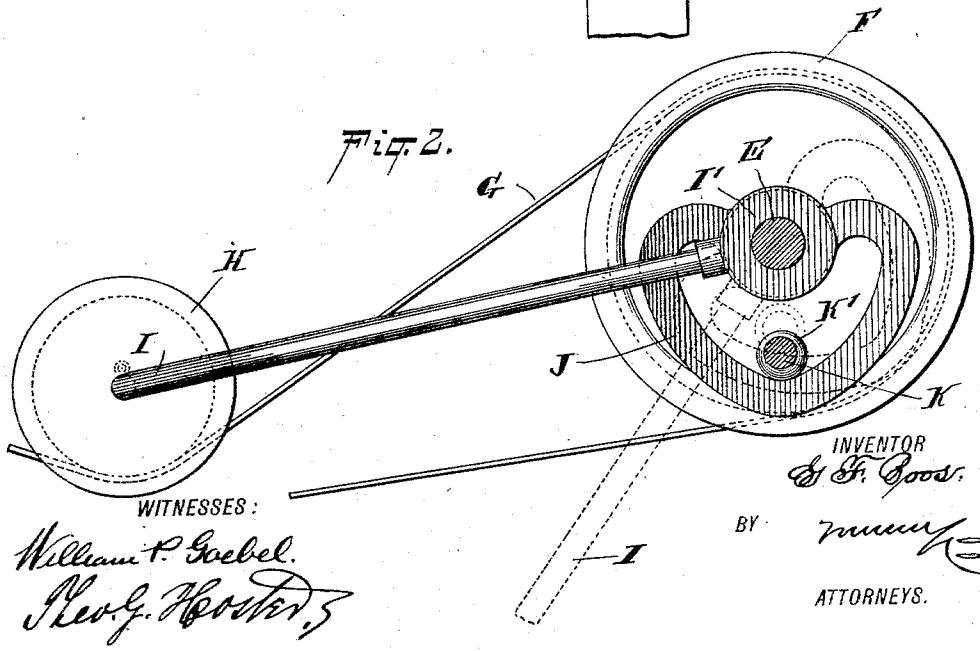


Fig. 2.



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UNITED STATES PATENT OFFICE.

GEORGE FREDRICK BOOS, OF ST. MARY'S, OHIO, ASSIGNOR TO THE ST. MARY'S MACHINE COMPANY, OF SAME PLACE.

STOP-MOTION FOR GOVERNORS.

SPECIFICATION forming part of Letters Patent No. 589,635, dated September 7, 1897.

Application filed November 21, 1896. Serial No. 612,985. (No model.)

To all whom it may concern.

Be it known that I, GEORGE FREDRICK BOOS, of St. Mary's, in the county of Auglaize and State of Ohio, have invented a new and Improved Stop-Motion for Governors, of which the following is a full, clear, and exact description.

The invention relates to centrifugal governors for engines and other machines; and its object is to provide a new and improved stop-motion which is simple and durable in construction and arranged to at once shut off the motive agent from the engine in case the driving-belt for the governor slips off, breaks, or otherwise becomes unserviceable.

The invention consists principally of a cam mounted to turn and controlled by an arm carrying an idler-pulley for the belt and a spring-pressed lever held in engagement at one side of its fulcrum with the said cam and having connection with the valve-stem at the other side of the fulcrum.

The invention also consists of certain parts and details and combinations of the same, as will be fully described hereinafter and then pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in both the figures.

Figure 1 is a side elevation of the improvement with parts in section, and Fig. 2 is an enlarged transverse section of the same on the line 2 2 of Fig. 1.

The governor on which the improvement is applied is provided with the usual valve-stem A, connected with ball-levers B, fulcrumed in the ball-frame C, mounted to turn in the governor-frame and connected by gear-wheels D D′ with a pulley-shaft E, carrying a pulley F, connected by a belt G with a pulley on the driving or other shaft of the engine, so that when the latter is running the belt G rotates the pulley F and shaft E, and the rotary motion of the latter is transmitted by the gear-wheels D′ and D to the frame C in the usual manner. The belt G is engaged by an idler-pulley H, journaled on an arm I, having its hub I′ mounted to turn loosely on the shaft E, and on the said hub is formed or secured a cam J, preferably made heart-shaped, as indicated in Fig. 2, with an open web, into which extends a friction-roller K′, mounted on the end of a lever K, fulcrumed at K^2 on the governor-frame. The other end of the lever K engages collars A′ on the valve-stem A.

The outer end of the lever K is connected with a rod L, engaged by a spring L′, held in a casing L^2, attached to the governor-frame. Nuts L^3 on the rod L permit of adjusting the tension of the spring L′, which latter serves to press the lever K.

It is evident that as the friction-roller K′ extends in the open web of the cam J the lever K is free to swing up and down, according to the up-and-down movement of the valve-stem A caused by the action of the ball-levers B; but when the belt G breaks, slips off, or otherwise becomes unserviceable then the idler-pulley H drops and in doing so causes a downward swinging of the arm I, so that the cam J is turned and the friction-roller K′ is carried upward by the cam-surfaces, thus imparting a swinging motion to the lever K, with the outer end in an upward direction and the inner end in a downward direction, to shift the valve-stem A downward to seat the valve on its seat, and thereby shut off the motive agent from the engine.

It will be seen that by the arrangement described the downward swinging of the arm I is very sudden, and consequently an immediate closing of the valve takes place by the mechanism above described.

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

1. The combination with the stem of the shut-off valve, of a normally-stationary cam mounted to turn, an idler-pulley normally bearing against the driving-belt, an arm connecting said pulley to said cam, and a spring-pressed lever held in engagement at one side of its fulcrum with the said cam, and having a connection with the valve-stem at the other side of the fulcrum, substantially as described.

2. A stop-motion for governors, comprising a spring-pressed lever adapted to engage the valve-stem, a friction-roller carried at the outer end of the said lever, a heart-shaped cam engaged at its inside by the said friction-roller, and an arm mounted to swing and carrying the said cam, the said arm supporting an idler-pulley adapted to engage the driving-belt for the governor, substantially as shown and described.

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