

(No Model.)

J. W. LAMBERT.
GAS ENGINE GOVERNOR.

No. 571,448.

Patented Nov. 17, 1896.

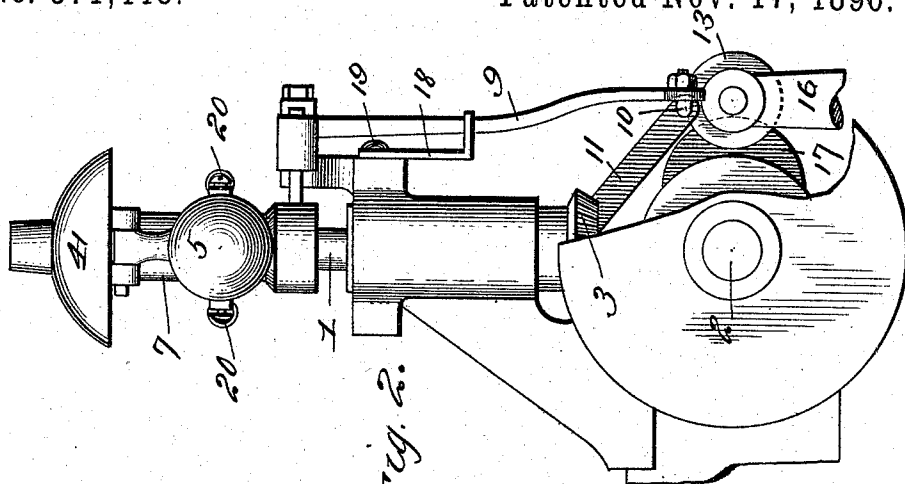


Fig. 2.

Fig. 3.

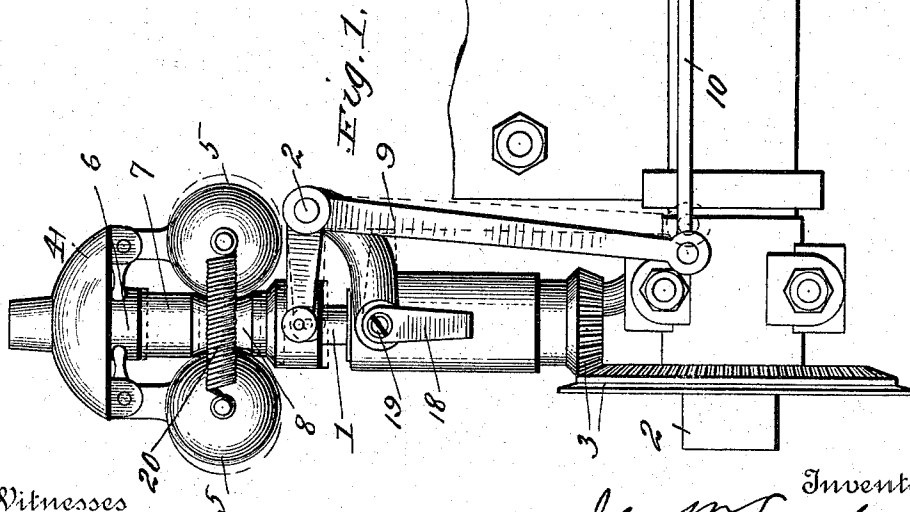
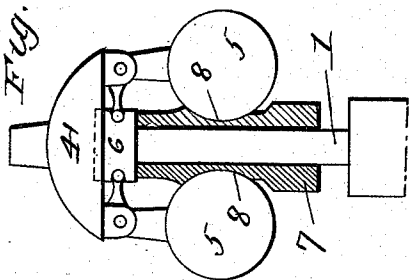


Fig. 1.

Witnesses

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UNITED STATES PATENT OFFICE.

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GAS-ENGINE GOVERNOR.

SPECIFICATION forming part of Letters Patent No. 571,448, dated November 17, 1896.

Application filed March 5, 1896. Serial No. 581,960. (No model.)

To all whom it may concern:

Be it known that I, JOHN W. LAMBERT, a citizen of the United States, residing at Anderson, in the county of Madison and State of Indiana, have invented certain new and useful Improvements in Gas-Engine Governors, of which the following is a specification, reference being had therein to the accompanying drawings.

In the drawings, Figures 1 and 2, respectively, are front and edge elevations of my improved governor, together with so much of the engine mechanism as is necessary to show the invention claimed; and Fig. 3, a detail vertical section taken through the upper part of the governor.

The special feature of the invention lies in the mechanism for automatically disengaging the gas-inlet devices from their operating-cam when the speed of the engine gets below or above a predetermined point, whereby the speed of the engine will be regulated and a considerable saving in gas will be effected, as more fully hereinafter set forth.

Referring to the drawings by numerals, 1 is the vertical spindle of the governor, which is journaled in the engine-frame in the usual way and is driven from a horizontal shaft 2 by the intermeshing gears 3 in the usual way, the shaft 2 receiving its power from the main engine-shaft in the usual way. On the upper end of the spindle 1 is stationarily mounted a cap or hood 4, to which are pivotally hung the arms of the depending governor-balls 5, these arms being provided with angular extensions engaging the slidable collar 6, which is adapted to rotate with the spindle. Below the collar 6 and on the spindle is mounted the slidable non-rotatable sleeve 7, which about midway its length is provided with an annular groove 8, in which the balls normally fit when at rest. The lower end of the sleeve 7 is pivotally connected to the horizontal arm of an angle-lever 9, which is pivoted on a stationary part of the frame and has its lower end pivotally connected to a horizontal rod 10, which extends parallel with the shaft 2 and is supported at its free end by a bracket 11, attached to a convenient part of the engine-frame. The free end of the rod 10 beyond the bracket is bent downward at 12 to adapt it to bear

against the adjacent side of a small roller 13, which is mounted on a horizontal pin 14 and is kept normally pressed against the rod by means of a coil-spring 15, surrounding said pin 14. The pin 14 projects horizontally from the upper end of the gas-inlet lever 16, which is of the usual construction and which is adapted to open the inlet-valve when it is swung outward away from shaft 2. The lever is operated by means of a cam 17, carried by the shaft 2 and rotating in the path of the roller 13, and adapted to strike the periphery of the roller and press the lever outward.

The numeral 18 designates a stop, which is pivoted on the frame supporting the spindle 1 and which is adapted to be swung up to a horizontal position, as shown in dotted lines in Fig. 1, and thereby lock or stop the lever 9 at such a point as will normally keep the roller 13 in line with its cam, this stop 18 being adapted to be held in its adjusted positions by tightening its pivotal screw 19. The governor-balls are connected by the strong horizontal springs 20, which normally draw them into the annular cam-groove 8, which serves to keep the sleeve normally pressed up against the collar 6.

The tension of the springs will be so regulated that when the engine is running under normal speed the sleeve 7 will be depressed far enough to keep the roller 13 in line with the cam 17, thereby insuring a charge of gas at every rotation of the cam; but should the speed become abnormal the further outthrow of the balls will press the roller beyond the cam and prevent the cam from operating the gas-inlet devices, as is evident. Should the engine stop, the governor-balls will be drawn into the cam-groove 8, and thereby automatically raise the sleeve, the annular groove 8 being rounded to fit the balls and act as a sort of cam-surface. When the sleeve is thus raised, the rod 10 will be moved endwise to the position shown in Fig. 1 and the roller 13 will be normally pressed against the bent end of the rod, where it will be out of line with the cam, whereby all possibility of the cam opening or holding open the inlet-valve will be avoided. This automatic device for preventing the unnecessary use of gas is particularly advantageous should the engine stop when

the operator is not at hand to shut off the gas. When the operator is close at hand, attending to the engine, this automatic device is not required, and it is thrown out of operation by turning up the stop 18 against the depending arm of the lever 9, which serves to lock the sleeve down and holds the roller 13 in line with the cam and prevents it being shifted off the cam to the left, as shown by the lines in Fig. 1.

Having thus fully described my invention, what I claim is—

1. In a gas-engine governor, the combination, of the governor-spindle and means for operating it, the outwardly-swinging governor-balls carried by the spindle, a slidable non-rotating sleeve carried by the spindle and provided with an annular cam-surface, a spring tending to normally draw the balls against said cam-surface, and devices connecting said sleeve to the gas-inlet-operating devices, as and for the purposes set forth.

2. In a gas-engine governor, the combina-

tion of the governor-spindle and means for operating it, the governor-balls pivotally carried by the spindle, a slidable rotatable collar carried by the spindle and operated by the balls, a slidable non-rotatable sleeve supported on the spindle independently of the collar and provided with an annular cam-surface, a spring connecting the balls and normally drawing them against said cam-surface, an angle-lever pivotally connected to said sleeve, a shifting-rod connected to said angle-lever, a gas-inlet lever carrying a slidable spring-actuated roller normally bearing against said shifting-rod, and an operating-cam adapted to strike said roller when in the path of the same, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN W. LAMBERT.

Witnesses:

PET PARENT,

H. E. LONGENECKER.