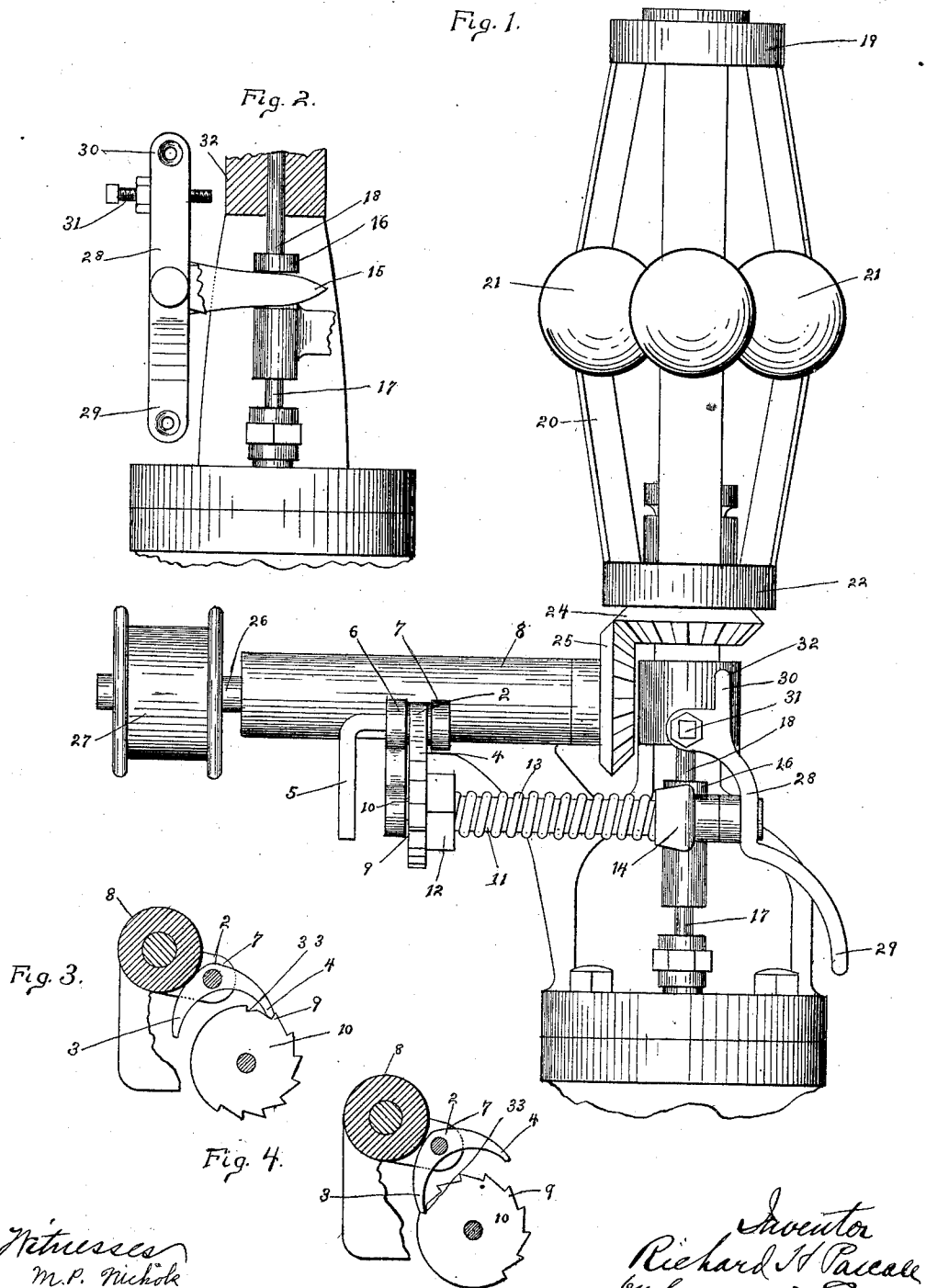


R. H. PASCALL.
ENGINE GOVERNOR.
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1,003,198.

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UNITED STATES PATENT OFFICE.

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ENGINE-GOVERNOR.

1,003,198.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, RICHARD H. PASCALL, a citizen of the United States, residing at Portland, in the county of Middlesex and State of Connecticut, have invented a new and useful Improvement in Engine-Governors; and I do hereby declare the following, when taken in connection with the accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1 a side view of a governor constructed in accordance with my invention. Fig. 2 a broken sectional view showing the means for limiting the movement of the lever. Fig. 3 a broken sectional view showing means for placing the regulating means under tension in one direction. Fig. 4 a similar view showing the tension applied in the opposite direction.

This invention relates to an improvement in engine governors of the "Pickering" or ball type, and particularly to governors of this type having a two-part valve rod. At times it is desirable to run an engine with the governor belt removed and control the action of the engine through the governor. The difficulty with governors having a two-part rod is that without means for checking the drop of the valve, it closes completely shutting off steam and stopping the engine. It is desirable, as in the case of a saw mill, that the valve should normally be slightly open so as to allow the engine to run slowly when the saw is not cutting, and permit full power to be applied when the saw enters the cut.

The object of this invention is to provide a stop to check the drop of the valve before it closes completely, and to arrange a reverse tension which will throw the valve downward toward the closing position, and also provide for operation with a belt; and the invention consists in the construction hereinafter described, and particularly recited in the claim.

In carrying out my invention, I employ a double pawl 2 having fingers 3, 4. This pawl is mounted on a tripping arm 5 which is supported by lugs 6, 7, formed on a shaft-bearing 8. The finger 4 is adapted to engage with ratchet teeth 9 on a ratchet wheel 10 mounted so as to turn freely upon the

left hand end of a spring-shaft 11 and formed upon its inner face with a nut 12 by which it may be turned. This nut is recessed for the reception of the left hand end of a coil spring 13 which is coupled with the nut and hence with the ratchet wheel. The said spring 13 has its opposite end inserted into and coupled with the hub 14 of the yoke 15, the arms of which enter a groove in the upper end of a collar 16 secured to the upper end of the lower section 17 of the valve rod, the upper section 18 of which is inserted into the upper end of the said collar 16. At its upper end the upper section 18 of the valve rod is connected in the usual manner with a revolving head 19 connected by spring arms 20 carrying balls 21 with a revolving head 22 which carries a beveled gear 24 meshing into a beveled gear 25 on the inner end of a power shaft 26 which carries a power pulley 27, this being the usual construction of ball governors. On the end of the shaft 11 is a sawyer's lever 28 adapted to be operated by its lower end 29 from any convenient point, and having its upper end 30 turned inward and provided with a set screw 31 extending into the path of the frame 32, whereby a stop is formed to limit the movement of the lever, and this screw is adjusted so as to arrest the movement of the lever before the valve is entirely closed. Tension is applied to the spring 13 by turning the nut 11 until the finger 4 of the pawl engages the desired tooth.

In this construction the movement of the valve-rod will be arrested just before the valve is closed, and so that the engine will continue to turn slowly. When the sawyer's lever 28 is turned away from the casing, the valve-rod is raised so as to fully open the valve. In case it is desired to control the engine through the governor with a belt, the tension of the spring 13 must be reversed, and this is done by providing the ratchet wheel 10 with a shoulder 33 with which the finger 3 of the ratchet wheel 10 may engage, as shown in Fig. 4 of the drawings. The tension of the spring now exerts an upward power to lift the rod to open the valve, and this rod can be moved toward a closed position by the sawyer's lever; but owing to the adjustable stop, it can be arranged so that the pawl of the lever will nearly but not quite close the valve.

I claim:—

In a governor, the combination with the valve-rod thereof, of a spring shaft arranged in connection with said rod to actuate the same, a spring on said shaft, a double ratchet-wheel connected with said spring, a double pawl arranged in conjunction with said ratchet wheel, whereby the tension of the spring may be reversed, a sawyer's lever
10 on said spring-shaft, said lever provided at

its upper end with a stop in line with the frame of the governor, whereby the movement of the said lever may be adjusted.

In testimony whereof, I have signed this specification in the presence of two subscribing witnesses. 15

RICHARD H. PASCALL.

Witnesses:

ROBERT S. MITCHELL,
STEPHENS HALL.

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