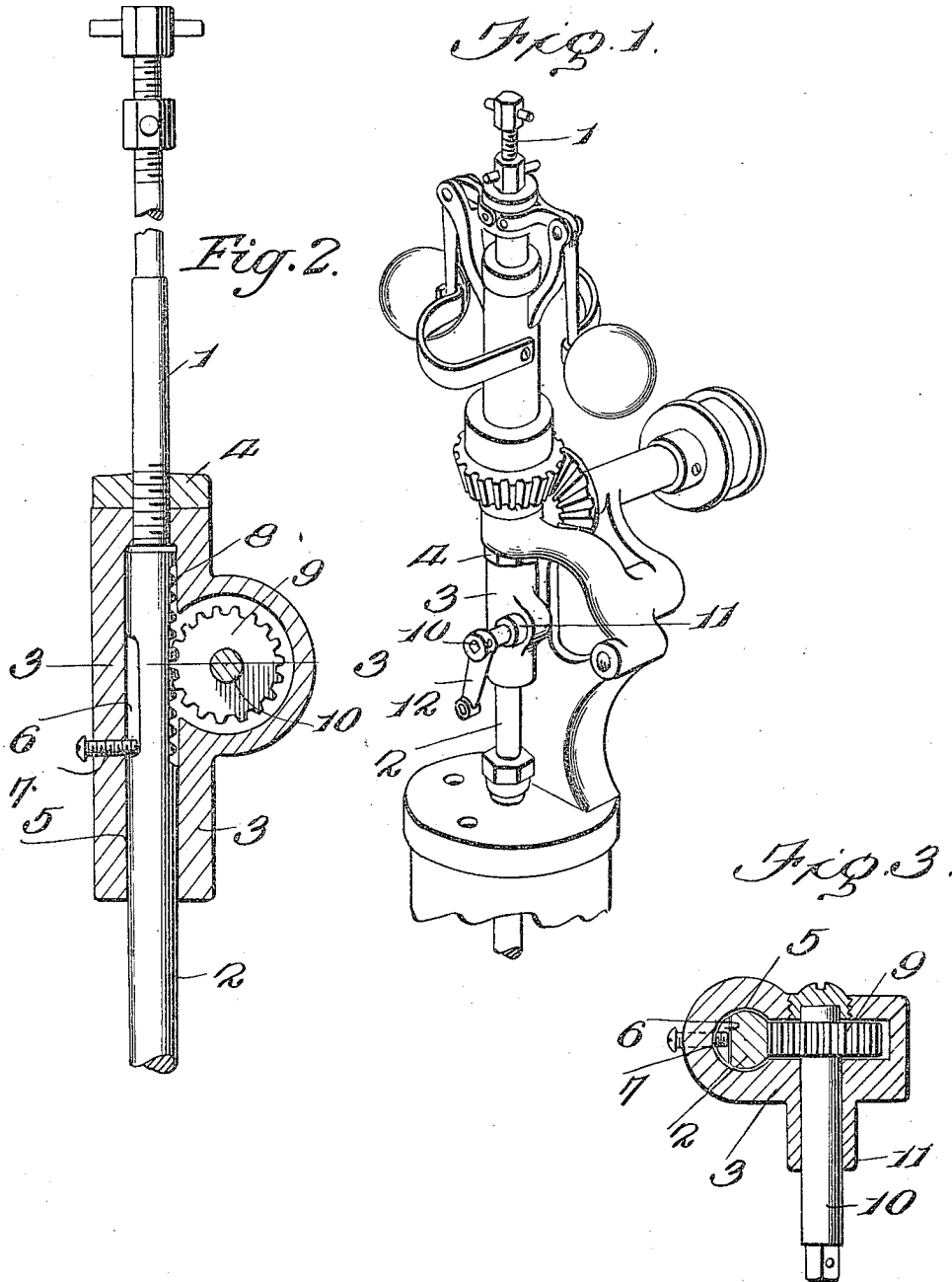


J. W. KLEINHAN.
SPEED RANGER FOR GOVERNORS.
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961,865.

Patented June 21, 1910.



Inventor

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UNITED STATES PATENT OFFICE.

JOHN W. KLEINHAN, OF ALEXANDER, NORTH DAKOTA.

SPEED-RANGER FOR GOVERNORS.

961,865.

Specification of Letters Patent. Patented June 21, 1910.

Application filed April 5, 1909. Serial No. 487,948.

To all whom it may concern:

Be it known that I, JOHN W. KLEINHAN, citizen of the United States, residing at Alexander, in the county of McKenzie and State of North Dakota, have invented certain new and useful Improvements in Speed-Rangers for Governors, of which the following is a specification.

This invention relates to the art of steam engineering, and it has for its object a speed ranger for engine governors, the parts of which may be cheaply manufactured and easily assembled and incorporated with the valve stem of an engine governor, and which will be durable in construction and efficient in operation to lengthen or shorten the valve stem so as to decrease or increase the speed, without manipulation of the throttle.

The invention consists essentially in a two part governor valve stem, a casing secured in a relatively rigid manner to one section or part of the valve stem and a suitable connection between the other section of the valve stem and the casing, whereby the valve stem sections may be extended in relation to each other to increase the length of the entire valve stem, and may be retracted as desired to shorten the valve stem according as it is desired that the engine shall run more slowly or faster at a given load. And the invention also consists in certain constructions, combinations and arrangements of the parts that I shall hereinafter fully describe and claim.

For a full understanding of the invention reference is to be had to the following description and accompanying drawings, in which:—

Figure 1 is a perspective view of the governor equipped with the improvements of my invention. Fig. 2 is a longitudinal sectional view of a portion of the apparatus on an enlarged scale, and Fig. 3 is a horizontal section taken on the line 3—3 of Fig. 2.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

Referring to the drawing: the numeral 1 designates the relatively stationary section of a governor valve stem, and 2 designates the adjustable section of said stem, the two sections being arranged in longitudinal alinement with each other.

3 designates a casing which is secured at its upper end to the lower end of the valve stem section 1 as by the screw threaded connection shown, 4 designating a lock or jam-nut. The casing 3 is formed with a longitudinally extending opening 5 in which the upper end of the section 2 fits, said section being formed with a longitudinal groove 6 in which a pin or screw 7 is accommodated so as to effect the proper guiding connection between the casing and stem section. The stem section is formed along one edge with rack-teeth 8 designed for meshing engagement with a spur pinion 9 secured on one end of a shaft 10. The shaft 10 is journaled in a bushing or bearing 11 screwed to the casing and said shaft carries at one end a crank 12 which may be connected by a link-rod or the like to any desired hand-lever or other actuating element.

While the invention is of course applicable for general use, I have designed it particularly for use in connection with traction engines, in which event the link-rod may extend from the crank 12 to a hand-lever on the foot-board or operator's platform of the engine, whereby the speed may be quickly and easily adjusted from the foot-board.

In the practical operation of my improved speed ranger for engine governors, it is obvious from the foregoing description in connection with the accompanying drawing that by turning the crank 12 the pinion 9 will move the section 2 of the valve stem downwardly and upwardly as the case may be, and the two sections will be relatively lengthened and extended, and retracted and shortened, so as to admit more or less steam to the working cylinder or cylinders of the engine at a predetermined load.

It is clear that my invention will not interfere to any extent with the sensitiveness of the governor and that by the use of my device the engine may be easily and safely handled without using the throttle, the device being capable of being instantly set at any speed desired while the engine is either in motion or at rest.

Having thus described the invention what is claimed as new is:—

In a governor, a valve-stem constructed in sections, a casing formed with an opening extending therethrough and receiving one

of said sections, the casing being rigidly connected to said section, the other section being movable within the said opening of the casing and formed with teeth, a guiding
5 connection between the last named section and the casing arranged to limit the movement of the section relative to the casing, a shaft journaled in said casing and a pinion

mounted in the casing and secured to said shaft. 10

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

JOHN W. KLEINHAN. [L. s.]

Witnesses:

W. C. HOLLAND,

W. J. BRUGMAN.