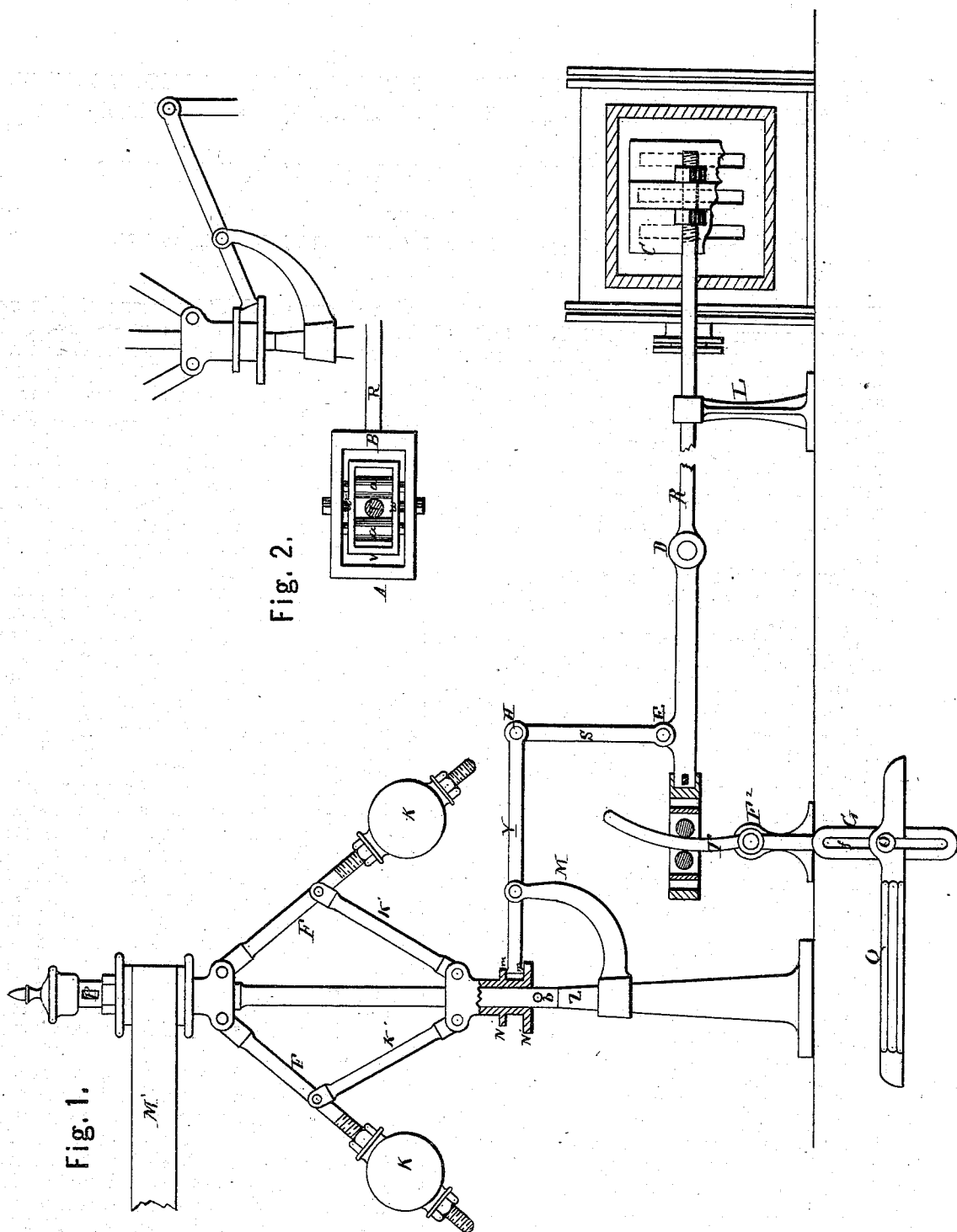


J. S. CAMAC.
Improvement in Governors for Steam-Engines.
No. 127,305. Patented May 28, 1872.



WITNESSES.
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UNITED STATES PATENT OFFICE.

JESSE S. CAMAC, OF SHICKSHINNY, PENNSYLVANIA, ASSIGNOR OF ONE-THIRD OF HIS RIGHT TO SETH A. TERRY, OF WASHINGTON, D. C.

IMPROVEMENT IN GOVERNORS FOR STEAM-ENGINES.

Specification forming part of Letters Patent No. 127,305, dated May 28, 1872.

To all whom it may concern:

Be it known that I, JESSE S. CAMAC, of Shickshinny, in the county of Luzerne and State of Pennsylvania, have invented a new and valuable Improvement in Steam-Engine Governors; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawing making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawing is a representation of a side view of my invention. Fig. 2 is a detailed view.

My invention has relation to a combined governor and cut-off for steam-engines; and consists in the construction and novel arrangement, as hereinafter described, of devices through which the governor is connected to the slide-valve, and which are of such a nature and adapted to such operation that, in the event of the breaking or disarrangement of any part of the machinery, the steam will be instantly cut off, and all dangerous results thereby prevented.

Referring to the accompanying drawing, C represents an ordinary slide-valve, having its stem R connected to the rock-shaft T by means of the device A B, which consists of a frame containing another frame, *v*, which holds two anti-friction rollers, *a*, journaled transversely. The frame *v* is connected with the frame A B by means of the rollers *w* in order to allow it to adapt itself to the various positions taken by the valve-stem with respect to the rock-shaft, which passes upward between the anti-friction rollers, as clearly shown on the drawing. L represents a standard supporting the valve-stem. D is a joint to the valve-stem, designed for the purpose of allowing the device A B sufficient vertical play upon the rock-shaft for the object contemplated in the invention. S designates an arm, connected at its lower end to the valve-stem by means of the joint E, and at its upper end to the lever Y by means of the joint H. Z indicates the governor-pedestal; F, the arms of the governor, upon which are placed the adjustable balls K. K' represents the inner arms of the governor, which connect the arms F to a de-

vice shown at N N' by means of joints *n n*. The device referred to consists of a sliding collar provided with two horizontal disks, of which the lower, marked N', is the greater in diameter. The inner end of the lever Y is constructed with two small lugs or fingers, *m m*. This end of said lever works between the disks N, which are of just sufficient distance apart to allow the fingers *m m* to touch the inner surfaces of said disks. The lever Y is pivoted to a bracket-arm, M, which is secured to the pedestal Z. M' represents the belt, through which motion is communicated to the governor from the main shaft. P represents a key-seat for a key to prevent the governor from running off of the pedestal. Q is the eccentric-rod, through which motion is communicated to the rock-shaft G T. The latter has its fulcrum at F², and is constructed with a slot, *f*, through which passes an adjustable pin, O, which may be raised or lowered to regulate the length of the valve-stroke.

It will be observed that the upper part T of the rock-shaft is curved, its concave side facing the valve. The object of this construction is to cause the valve to have a regular play at whatever point the device A B is located.

My invention operates as follows: Before starting the engine a key is inserted in the pedestal at *b*, and the disk N' allowed to rest thereon. When the engine is started this key is withdrawn and the governor allowed full play. Now, if the main belt of the engine should break the speed of the governor would be immediately increased to such an extent that the disks N N' would rise until the end of the lever Y would be thrown out of contact with the disk N, whereupon, being disconnected from the governor, the free end of the valve-stem would fall to such a point that the motion of the rock-shaft would be insufficient to operate the valve, and the steam would be immediately cut off. The same result will follow if the belt M break or any other accident occur to cause the governor to fall. Whether the governor rise or fall to an extraordinary degree, the end of the lever Y will be released by passing out from under the smaller disk N of the connecting-sleeve.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination, with the governor and slide-valve of a steam-engine, of the sliding collar having the flanches N N, the lever Y, the arm S, and the rock-shaft T G, arranged substantially as specified.

2. The combination, with the frame A B, pivoted frame V, and rollers *a*, of the jointed valve-stem R, eccentric-rod, and curved vibrating bar G T, substantially as specified.

3. The combination, with the adjustable ec-

centric-rod Q, of the curved vibrating bar G T having the slot *f* and the adjusting-pin O, substantially as specified.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

JESSE S. CAMAC.

Witnesses:

J. W. HEISER,

JOSIAH SHELBY.