

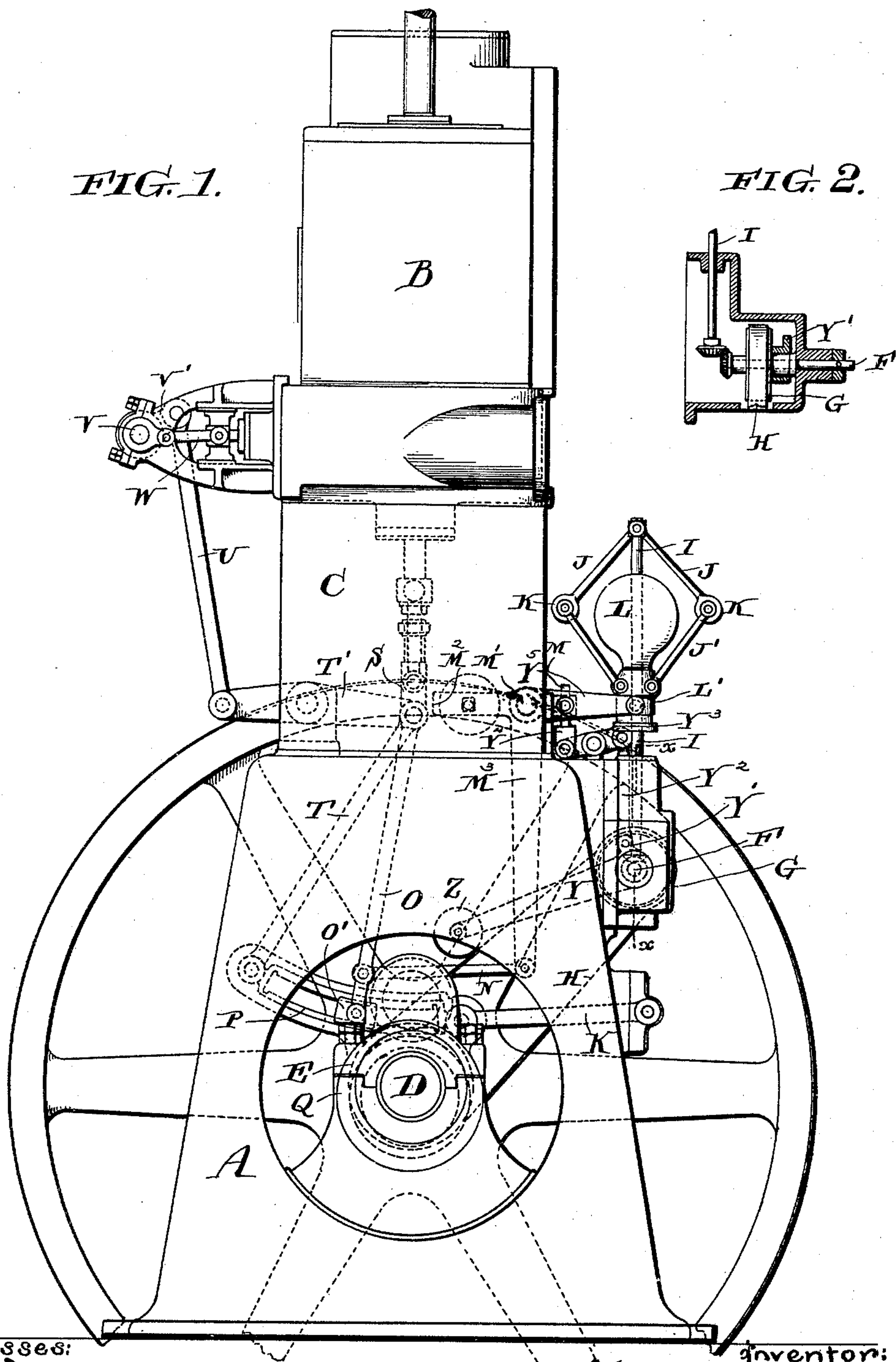
(No Model.)

F. W. DEAN.

SAFETY ATTACHMENT FOR ENGINE GOVERNORS.

No. 482,404.

Patented Sept. 13, 1892.



Witnesses:

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SAFETY ATTACHMENT FOR ENGINE-GOVERNORS.

SPECIFICATION forming part of Letters Patent No. 482,404, dated September 13, 1892.

Application filed April 29, 1892. Serial No. 431,096. (No model.)

To all whom it may concern:

Be it known that I, FRANCIS W. DEAN, of the city of Cambridge, county of Middlesex, State of Massachusetts, have invented a certain new and useful Safety Attachment for Engine-Governors, of which the following is a true and exact description, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates to engine-governors, and has for its object to provide against the danger of the engine running away when for any reason the governor is disabled.

The nature or my improvement will be best understood, as described in connection with the drawings, in which it is illustrated, and in which—

Figure 1 is a side elevation of an engine provided with my improvement, and Fig. 2 is a view illustrating a mechanism for drawing the governor-spindle.

A indicates the engine-frame, and B and C cylinders supported upon it. D is the crank-shaft, and E a slotted link supported on an eccentric Q and connected with a link R, forming a valve-motion of a familiar type. As shown, the link is arranged to actuate two valves or sets of valves, one connection being by means of a permanently-attached rod T, acting on a pivoted lever T', which in turn transmits motion to a shaft V by means of a rod U and lever-arm V'. From the shaft V motion is transmitted to the valve-actuating rod W. Another valve-rod S is actuated by means of a rod O, which is connected with a link P by means of a sliding block O', the shifting of this block varying in throw of the valve connected with the rod S and regulating the admission and cut-off of steam through the valve (not shown) connected with said rod. The shifting of block O is effected in the usual way by means of the governor. This governor is driven from the shaft F, as indicated in Fig. 2, said shaft receiving motion from a pulley E on the crank-shaft by means of a belt H, passing over said pulley and over a pulley G on shaft F. The governor-spindle I has attached to its top the arms J J, gearing-weights at their extremities, and also gearing-links J' J', which are attached, as shown, to the weight L. A collar L', also connected to

this weight, is engaged by the arm M of a lever M M² M³, pivoted at M', and which carries a counter-weight of its arm M², while its longer arm M³ is connected by a rod N with the rod O. 55

In all of the particulars above described the engine and its attachments are not new with me, the said engine, as shown, being indeed one designed by George S. Strong, of New York city. 60

It is obvious that in case belt H should break the motion of the spindle I will at once cease, throwing the governor out of operation, and with the result of moving the block O', so as to increase to a maximum the admission 65 of steam, and the result of this would probably be the destruction of the engine. To avoid this risk, I have provided a safety attachment, which consists of a lever Y, pivoted on the shaft F and having its outer end supported 70 on the belt B, as by means of a roller Z. A heel extension Y' of lever Y is connected to a rod Y², which in turn is connected with a pivoted lever Y³, the other end of which carries a lifter Y⁴, so arranged in connection with the 75 governor that when the belt breaks and the lever Y falls it will be pushed upward, acting on the governor mechanism in such a way as to draw the block O' in, shortening or cutting off the admission of steam through the valve 80 controlled by it. As shown, the lifter Y⁴ is provided with a steady-pin Y, which passes through the lever-arm M, and it is arranged to act upon the lever-arm, which will be forced up, carrying the weight L with it by the weight 85 of the descending lever Y.

Having now described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In combination with a steam-engine having mechanism for actuating its admission-valve, a governor arranged to act upon said mechanism to vary the throw of the valve, a belt operated by a rotating part of the engine and arranged to operate the governor, and a lever 95 Y, arranged to act on the governor mechanism to diminish the throw of the valve, said lever being normally supported out of operation by the belt aforesaid and arranged, as described, to act on the governor mechanism only in case 100 the belt breaks.

2. In combination with a steam-engine hav-

ing mechanism for actuating its admission-valve, a governor arranged to act on said mechanism to vary the throw of the valve, a belt driven by a rotating part of the engine
5 and arranged to drive the governor, a lever Y, pivotally supported at one end and supported on the belt at its other end, a lever M, forming part of the connection from the governor to the valve-actuating mechanism, and a lifter Y, arranged below said lever M and connected to lever Y, as described, and so as to raise lifting-lever M when the belt-supported end of lever Y falls.

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Witnesses:

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