

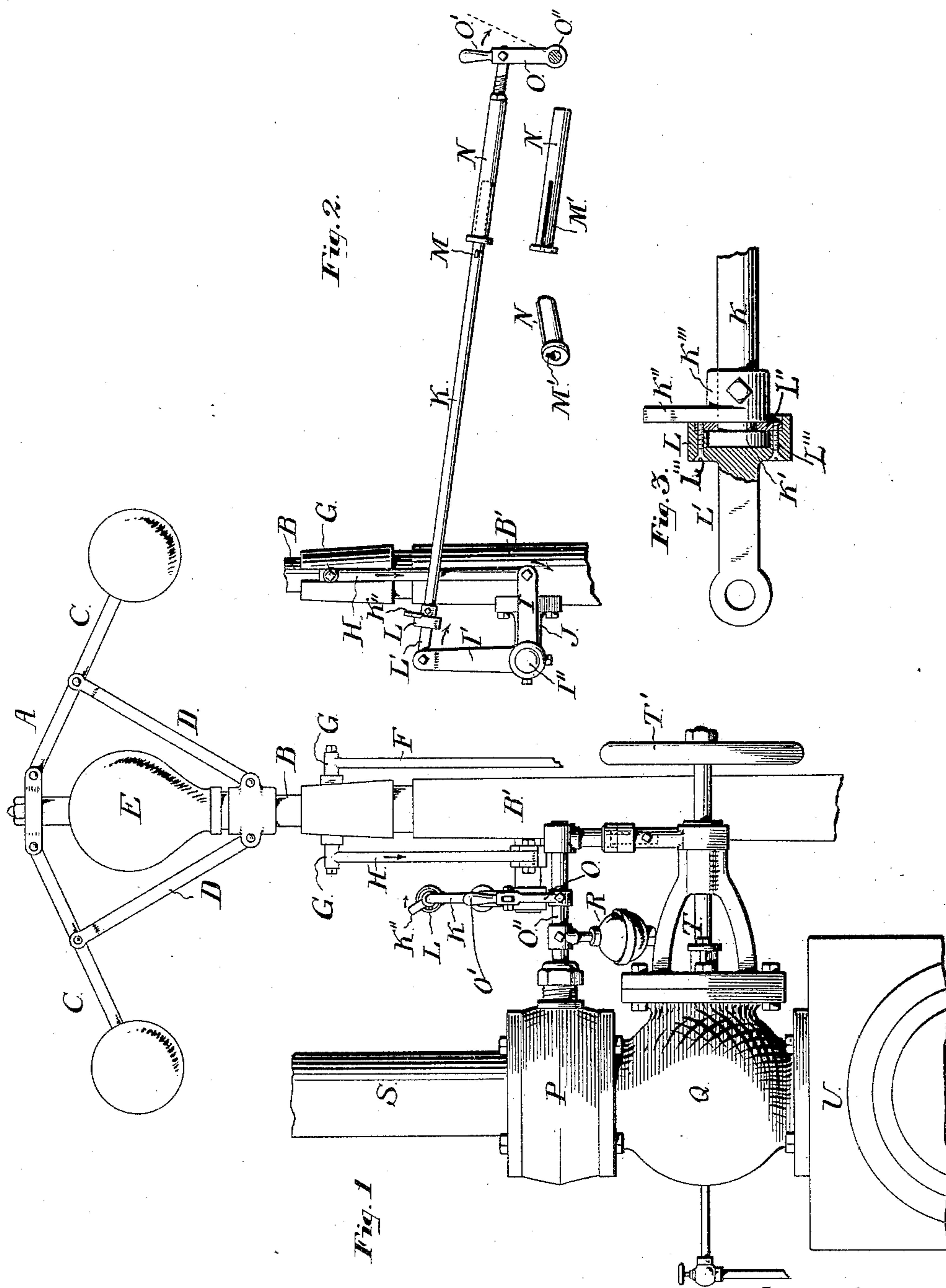
(No Model.)

W. H. PYOTT.

AUTOMATIC STOP MECHANISM FOR STEAM ENGINES.

No. 411,530.

Patented Sept. 24, 1889.



Witnesses:

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UNITED STATES PATENT OFFICE.

WILLIAM H. PYOTT, OF PHILADELPHIA, PENNSYLVANIA.

AUTOMATIC STOP MECHANISM FOR STEAM-ENGINES.

SPECIFICATION forming part of Letters Patent No. 411,530, dated September 24, 1889.

Application filed March 16, 1889. Serial No. 303,606. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. PYOTT, a citizen of the United States, and a resident of Philadelphia, Pennsylvania, have invented a certain new and Improved Automatic Stop Mechanism for Steam-Engines, of which the following is a full and exact description, reference being had to the annexed drawings, making part hereof.

The nature of my invention will fully appear from the following specification and claims.

It has for its object the instantaneous stopping of the engine in case of a breakage of any of the operative parts, or in case of the slipping off of the governor-belt.

In the drawings, Figure 1 is an end elevation of the part of an engine to which my device is attached; Fig. 2, a detached side elevation of my device, showing its parts ready for operation; Fig. 3, a detached or broken side view of part of my actuating-rod, showing its head and the lever for throwing it into operating position.

A is the governor; B, the governor-bar, to which the governor is loosely attached; C C, the pivoted arms supporting the governor-balls; D D, the pivoted arms, which are pushed down as the balls are depressed; E, the center-balance ball.

F is the rod, the driving down of which operates the ordinary cut-off in common use, and the special construction of the governor and its ordinary cut-off requires no description here, as they are well known in the art.

G is a cross-bar, which is pushed down as the bar B is depressed by the governor.

H is a pivoted rod jointed to the cross-bar G at one end and at the other end to the bell-crank I I'.

J is a stud bolted or screwed to part B' of the governor-standard. The crank-lever I I' is secured by pivot I'' to the end of this stud, the pivot passing through a short hollow sleeve (not shown) forming part of the crank and integral therewith.

K is a rod secured loosely at one end by its head K' in the recessed block L. This block forms part of a short arm L', which is pivoted to the end of part I' of the bell-crank, as shown in Figs. 2 and 3. A large washer L'' sets in-

side of the head K' and around rod K, and is secured rigidly in place by screws L''', whereby the head K' is held in place in the block while it is permitted to be turned freely therein by moving lever K'' laterally. Rod K is provided with a key or feather M, adapted to engage in a slot M' of the sleeve N.

K'' is a lever secured rigidly by a collar and set-screw K''' on rod K.

O is a lever provided with a handle O' and pivoted at one end to sleeve N, and at the other is rigidly attached to a horizontal rod O'', which passes into valve-shell P, to open and close a "butterfly globe-valve" therein. This rod O'' is provided with an arm and weight R, the arm being rigidly attached to said rod O''.

Q is the shell of the ordinary globe-valve, which is in common use, and is subject to the ordinary action of the governor.

S is the steam-supply pipe.

The butterfly globe-valve and the ordinary "globe-valve" require no special description here, as they are well known in the art and form no part of the present invention. The former requires no screw to open or close it, while the latter is opened and closed by the screw-rod T and hand-wheel T'. The valve P is independent of the valve Q, and is operated entirely by my attachment.

U is the end of a steam-cylinder.

The operation is as follows: The rod K by its lever K'' is turned to throw key M out of line with slot M'. In case the governor-belt slips off, breaks, or any breakage occurs to the engine the governor-balls will descend and the parts A D will begin to collapse, thus driving down the cross-bar G and rod H. This will force down end I of the bell-crank, throwing forward the end I' thereof. This will drive rod K forward and key M against the outer end of sleeve N. The sleeve N is thus pushed by the rod K to throw over lever O, turn-rod O'', and close the independent valve P at once, thus shutting off the current of steam long before the slow action of the governor has had sufficient time to close the globe-valve Q. Whenever it is desired to throw my mechanism out of action, the lever K'' is given a turn, (a quarter,) so as to bring key M opposite to slot M', whereby when

rod K is pushed forward the key will enter the slot without disturbing sleeve N, thus permitting the governor to act alone. The lower end of rod K sets loosely in sleeve N.

5 Weight R acts as a counter-balance to steady and restrain the action of the movable parts of my device and to bring these parts back to place when the pressure from the governor is removed.

10 What I claim as new is—

1. The steam shut-off mechanism consisting of cross-bar G, attached to vertically-moving bar B of the governor mechanism, rod H, pivoted at one end thereto, bell-crank I I',
15 pivoted to stud J, rod K, loosely secured at one end in block L, so as to turn freely therein, the latter being hinged by arm L' to part I' of the bell-crank, and said rod K being provided with key M, sleeve N, adapted to re-
20 ceive one end of rod K and provided with a slot M' to receive key M, lever O, with its rod O'', adapted to open and close a valve in shell P of the engine mechanism, substantially as described.

2. The steam shut-off mechanism consisting 25 of cross-bar G, attached to vertically-moving bar B, of the governor mechanism, rod H, pivoted at one end thereto, bell-crank I I', pivoted to stud J, rod K, loosely secured at one end in block L, so as to turn freely therein, 30 the latter being hinged by arm L' to part I' of the bell-crank, and said rod K being provided with key M, sleeve N, adapted to receive one end of rod K and provided with a slot M' to receive key M, lever O, with its rod 35 O'', adapted to open and close a valve in shell P of the engine mechanism, and weight R, attached to rod O'' to restrain and steady the action of my mechanism and to bring the parts back to place when the pressure from 40 the governor is removed, substantially as described.

In witness that the above is my invention I have hereunto set my hand.

WILLIAM H. PYOTT.

Witnesses:

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GEORGE E. BUCKLEY.