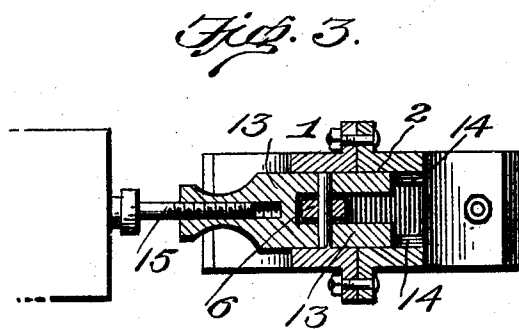
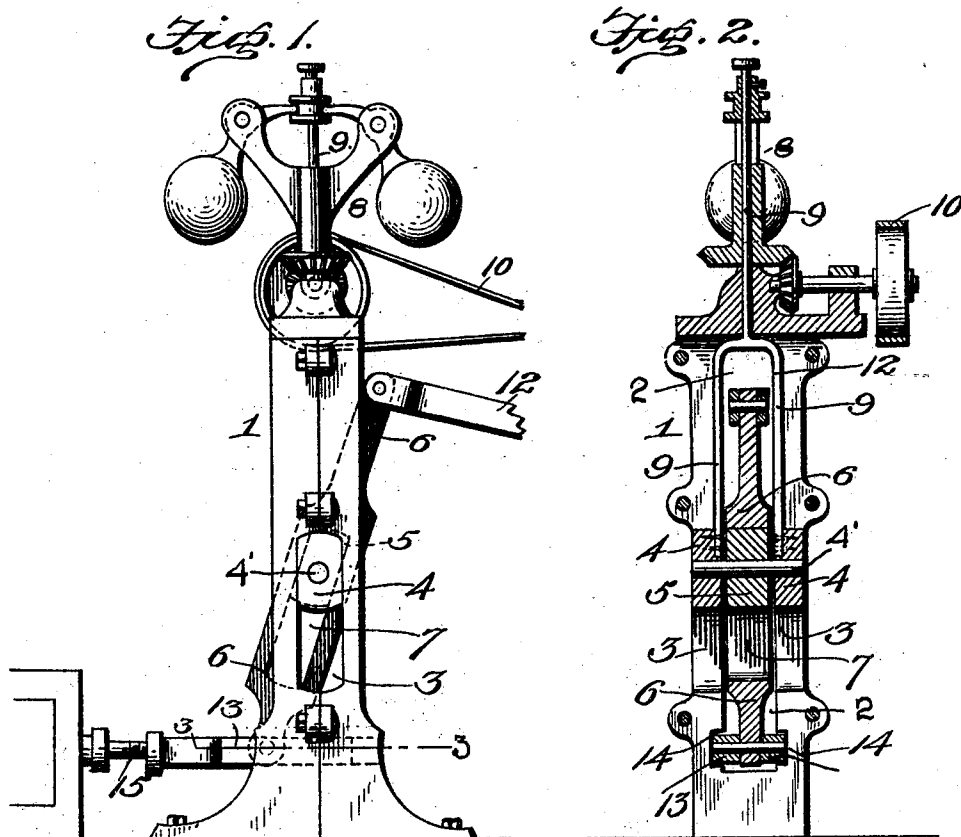


No. 836,254.

PATENTED NOV. 20, 1906.

K. HEGLE & O. E. PETERSON.
AUTOMATIC CUT-OFF DEVICE FOR ENGINES.
APPLICATION FILED MAR. 1, 1906.



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UNITED STATES PATENT OFFICE.

KONRAD HEGLE AND OTTO E. PETERSON, OF LISBON, NORTH DAKOTA.

AUTOMATIC CUT-OFF DEVICE FOR ENGINES.

No. 836,254.

Specification of Letters Patent.

Patented Nov. 20, 1906.

Application filed March 1, 1906. Serial No. 303,715.

To all whom it may concern:

Be it known that we, KONRAD HEGLE and OTTO E. PETERSON, citizens of the United States, residing at Lisbon, in the county of Ransom and State of North Dakota, have invented certain new and useful Improvements in Automatic Cut-Off Devices for Engines; and we do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in automatic cut-off devices for engines.

The object of the invention is to provide a device of this character by means of which the movement of the engine-valve is automatically controlled or determined by the load on the engine, thereby controlling the speed of the latter and permitting the steam to be used expansively all the time, thus providing for the economical use of and saving of steam.

A further object is to provide a device of this character which will be simple, strong and durable in construction, requiring no packing-glands, and which is constructed of few parts, therefore not liable to get out of order.

The device is adapted to be used on any form of engine, but is particularly adapted for use in connection with traction-engines and to be associated with the reversing-gear and slide-valve thereof.

With the above and other objects in view the invention consists of certain novel features of construction, combination, and arrangement of parts, as will be hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a side view of a portion of a traction-engine and governor, showing the application of the invention thereto. Fig. 2 is a central vertical sectional view of the same. Fig. 3 is a horizontal sectional view on the line 3-3 of Fig. 1.

Referring more particularly to the drawings, 1 denotes the governor-supporting frame, which is here shown and is preferably formed in two sections bolted or otherwise secured together. The frame 1 is provided with a centrally-disposed vertical opening 2, and on each side of the opening 2 the frame is provided with guide-passages 3, which are disposed opposite to each other and in which are slidably mounted pivot-blocks 4, be-

tween which and pivotally connected thereto by a pin 4' is a fulcrum-block 5. Arranged in the opening 2 of the frame 1 is a cut-off link 6, said link being provided with a longitudinally-disposed slot or passage 7, in which the block 5 is slidably disposed. The link 6 is thus free to oscillate upon the pin 4' and also free to move vertically within the range of the slot 7.

Mounted on the upper end of the frame 1 is a centrifugal governor 8, which may be of the usual or any desired form and connected with which and adapted to be operated thereby is a shifting rod 9, said rod passing downwardly through the passage in the frame 1. The lower end of the shifting rod 9 is bifurcated or forked and is adapted to straddle the upper end of the link 6. The forked lower ends of the shifting rod 9 are connected to the pivot-blocks 4, which are arranged in the guide-passages 3 of the main frame and also pivoted upon the pin 4'. The governor 8 is designed to be operated in the usual manner by a belt from the engine, whereby the required movement is imparted to the governor.

The upper end of the link 6 is pivotally connected to the connecting-rod 12 of the reversing mechanism of the engine. The lower end of the link 6 is pivotally connected to the forked or slotted end of a valve-connecting plate 13, which is slidably mounted in guide grooves or passages 14, formed in the lower end of the frame 1, as shown. The opposite end of the plate 13 is provided with a screw-threaded aperture into which is adapted to be screwed and adjustably connected the outer end of the slide-valve stem 15 of the engine.

In operation, as the load on the engine is increased or diminished the governor will be accordingly operated at a greater or less speed, thereby raising or lowering the shifting rod, which in turn will raise and lower the pivot and fulcrum-blocks of the cut-off link, thereby changing the fulcrum-point or leverage thereof, which will cause said link to shift the slide-valve to a greater or less degree, thereby supplying more or less steam to the engine, as will be understood.

From the foregoing description, taken in connection with the accompanying drawings, the construction and operation of the invention will be readily understood without requiring a more extended explanation.

Various changes in the form, proportion,

and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention, as defined by the appended
5 claims.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In an automatic cut-off device, a frame
10 having spaced sides provided with transversely-alined guideways and spaced guideways at right angles to said alined guideways, a guide member slidable in said spaced
15 guideways and having valve-connecting means at one end, blocks slidable in said alined guideways and coupled by a transverse pin, a link having an intermediate
20 guideway swinging at one end from said guide member and with operating means at the other end, a block slidable in the guideway of said link and pivoted upon said transverse
pin, a governor associated with said frame, and connecting means between said governor, and the blocks operating in said alined
25 guideways.

2. In an automatic cut-off device, a frame

having spaced sides provided with transversely-alined guideways and spaced guideways at right angles to said alined guideways, a governor associated with said frame, 30 a guide member slidable in said spaced guideways and having valve-connecting means at one end, blocks slidable in said alined guideways and coupled by a transverse pin, a link having an intermediate guideway and swing- 35 ing at one end from said guide member and with operating means at the other end, a block slidable in the guideway of said link and pivoted upon said transverse pin, a shifting rod having spaced members connected to 40 the blocks operating in said alined guideways, and means for connecting said rods to said governor.

In testimony whereof we have hereunto set our hands in presence of two subscribing 45 witnesses.

KONRAD HEGLE.
OTTO E. PETERSON.

Witnesses:

H. K. ADAMS,
H. E. SCHAAF.