

No. 844,825.

PATENTED FEB. 19, 1907.

H. S. MOLONY.  
REGULATING DEVICE FOR GAS ENGINES.

APPLICATION FILED DEC. 3, 1906.

2 SHEETS—SHEET 1.

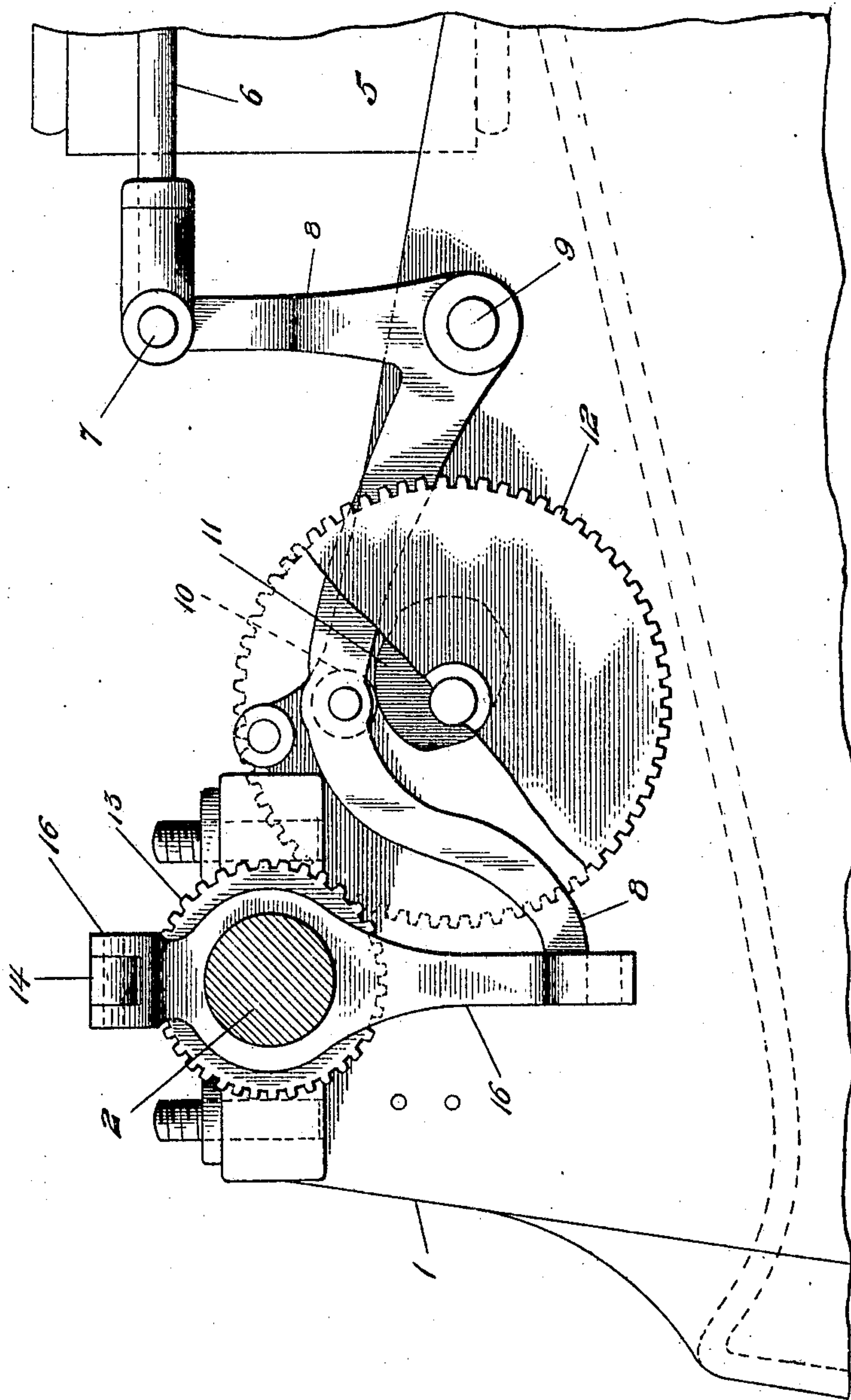


Fig. 1.

Witnesses

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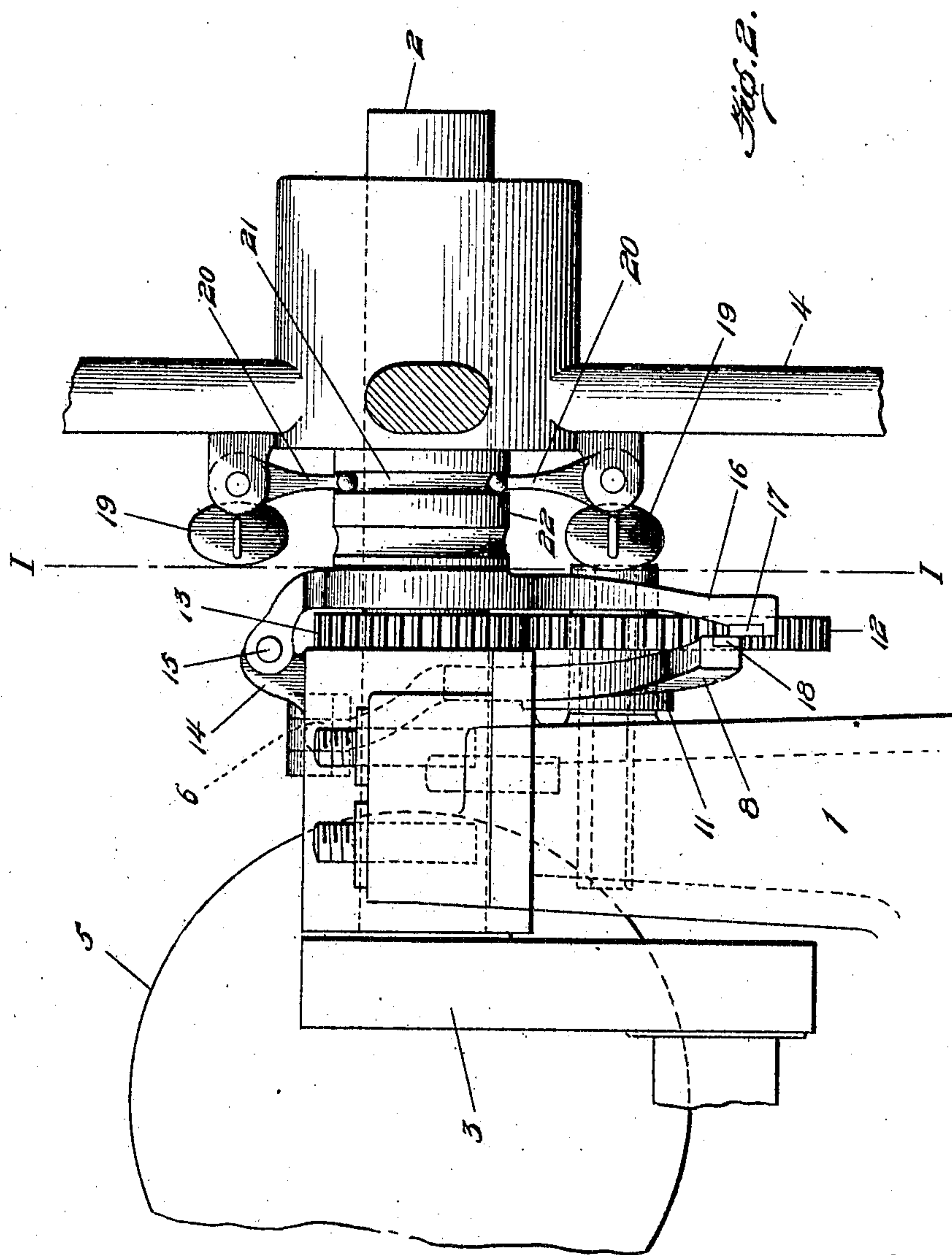
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*C. M. Offutt*

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# UNITED STATES PATENT OFFICE.

HARRY STUART MOLONY, OF BEATRICE, NEBRASKA, ASSIGNOR TO DEMPSTER MILL MANUFACTURING COMPANY, OF BEATRICE, NEBRASKA.

## REGULATING DEVICE FOR GAS-ENGINES.

No. 844,825.

Specification of Letters Patent.

Patented Feb. 19, 1907.

Application filed December 3, 1906. Serial No. 346,063.

*To all whom it may concern:*

Be it known that I, HARRY STUART MOLONY, a citizen of the United States, residing at Beatrice, in the county of Gage and State of Nebraska, have invented certain new and useful Improvements in Regulating Devices for Gas-Engines, of which the following is a specification.

My invention relates to gas or explosive engines of the so-called "four-cycle" type and in which an exhaust-valve and an admission-valve are located in the head end of the cylinder, such exhaust-valve being operated by a valve-rod extending along the side of the cylinder, which rod is pivoted at its outer end to a rocking lever, one end of which bears against the exhaust-valve stem to open said valve at the proper intervals.

My present invention relates especially to improved means for regulating the movements of the valve-rod and throwing it out of its normal operation when the speed of the engine becomes excessive, thereby holding the exhaust-valve open and preventing the full operation of the engine until the speed is reduced.

In the drawings, Figure 1 is a side elevation, partly in vertical section on the line I I of Fig. 2, of part of a horizontal gas-engine provided with my device, various parts not immediately involved being removed and other parts broken away. Fig. 2 is an end view of part of the engine, showing the devices involved in the present invention with parts removed and other parts broken away.

1 indicates the base of the engine; 2, the crank-shaft; 3, one of the cranks; 4, a portion of one of the fly-wheels; 5, the cylinder, and 6 a reciprocating valve-rod which extends along the side of the cylinder and is connected at its outer end to a rocking lever (not shown) pivoted on the cylinder and serving to operate an exhaust-valve in a well-known manner. Said valve-rod also operates an igniting device (not shown) of any preferred type. Said valve-rod 6 is pivoted at 7 to the upright arm of an irregularly-shaped rocking lever 8, pivoted to a stationary part at 9 and extending in a curved line rearwardly and finally downwardly to a point below the crank-shaft. Said rocking lever 8 carries a roller 10, which bears against the face of a cam 11, mounted on the shaft of a gear-wheel 12, driven by a pinion 13 on the crank-shaft.

The faces of said cam are so formed as to impart to lever 8 the movements necessary to properly actuate the valve-rod 6, the exhaust-valve, and the igniting device, all in the usual manner.

A standard 14 is mounted above shaft 2 and suitably supported on the base 1. To the upper end of said standard by means of a pin 15 is hinged a pendent retaining-arm 16, so formed as to pass by pinion 13 and around the shaft and extending downwardly vertically to a point adjacent to the lower end of lever 8. The end of retaining-arm 16 is provided with a jaw or projection 17, consisting, preferably, of a bearing-block, which extends toward lever 8 and is adapted under certain conditions to hook under said lever and prevent it from operating in the normal manner. The end of lever 8 is also provided with a bearing-block 18 where it contacts with retaining-arm 16.

On opposite sides of shaft 2 and carried by the fly-wheel 4 are mounted the two members of a governor device 19, having inwardly-extending arms 20, which engage loosely in a groove 21 in a sliding boss 22, loose on and inclosing the shaft 2.

The operation is as follows: When the speed of the engine becomes excessive, the boss 22 by the action of the governors is forced along the shaft and pressed against the pendent retaining-arm 16, and the lower end of the latter is brought to bear against lever 8, and when said lever in its vertical movement, due to the action of cam 11, reaches its highest point, which position is always coincident with the full opening of the exhaust-valve, said retaining-arm hooks under said lever and holds it out of operation and the exhaust-valve open until the speed of the engine is reduced to the proper normal, after which boss 22 slides back and arm 16 disengages from lever 8.

I claim as my invention and desire to protect by Letters Patent—

1. In a gas-engine, a crank-shaft, a cylinder, a reciprocating valve-rod for controlling an exhaust-valve, a rocking lever mounted on the frame and pivoted to said rod, said lever having a leg extending toward the crank-shaft, a cam bearing against said rocking lever and actuated by gearing driven by said shaft, a retaining-arm hinged to the frame and passing around the shaft, and



adapted to engage said rocking lever, a speed-governor, and means actuated thereby for causing said arm to engage said lever when the speed is excessive, thereby locking  
5 said lever and holding the exhaust-valve open until speed is reduced, substantially as set forth.

2. In a gas-engine, the combination of a crank-shaft, a cylinder, a reciprocating  
10 valve-rod mounted at the side of the cylinder, for controlling an exhaust-valve, a rocking lever pivoted to said valve-rod and having a curved leg extending rearwardly and downwardly to a point below the crank-  
15 shaft, a pinion on the crank-shaft, a gear-wheel driven by said pinion, a cam actuated by said gear and bearing against the leg of

said rocking lever to oscillate it vertically, a pendent retaining-arm hinged at a point above the shaft, and extending downward  
20 around said shaft to a point adjacent to said leg, a jaw in the end of said arm, a speed-governor and means actuated thereby for forcing said arm into engagement with said  
25 lever, to hold the same inactive and the exhaust-valve open when the speed is excessive, substantially as set forth.

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

HARRY STUART MOLONY.

Witnesses:

R. H. YALE,  
F. D. ONEIL.