

No. 874,974.

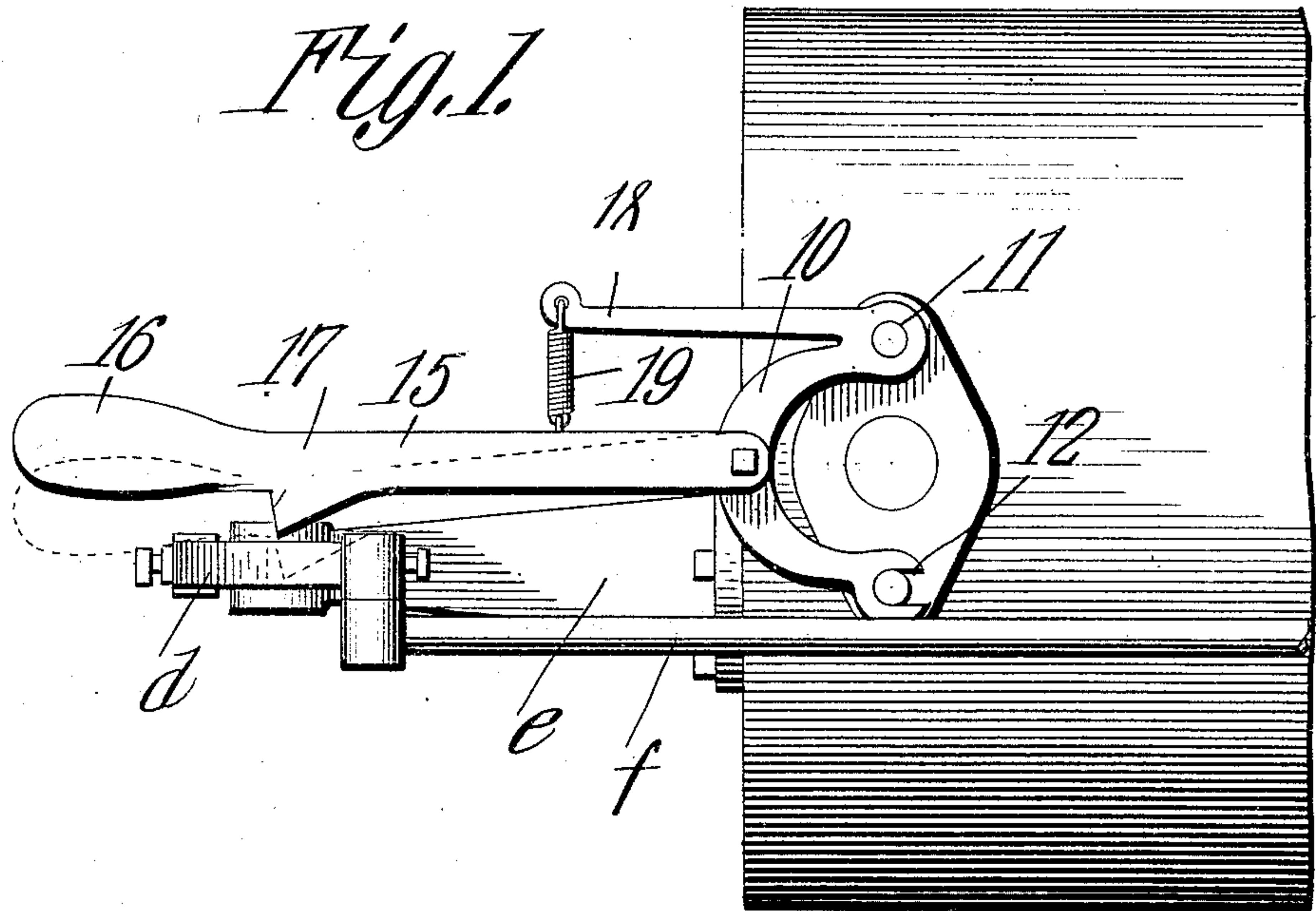
PATENTED DEC. 31, 1907.

E. C. MADDOX.

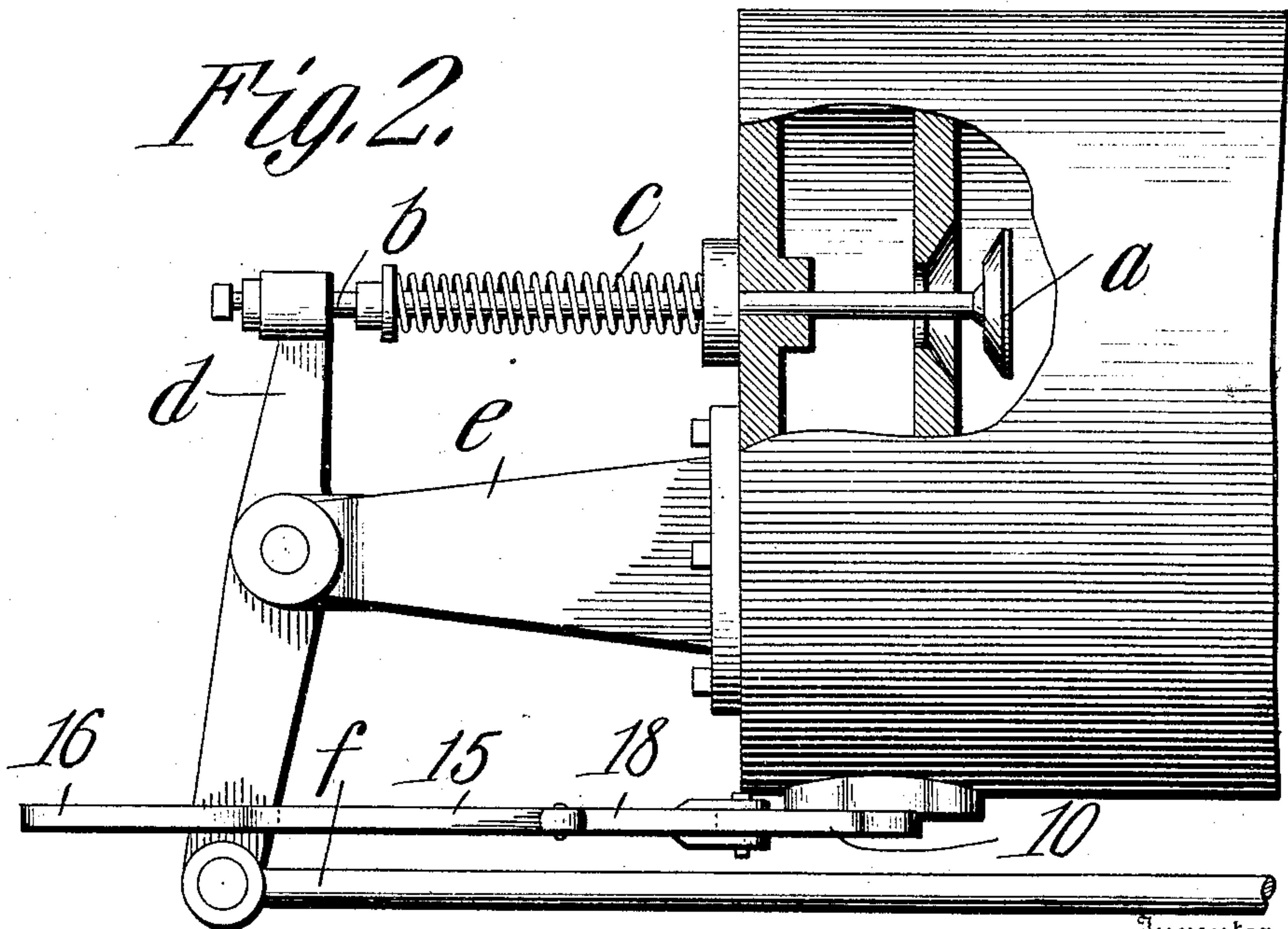
EXHAUST CONTROL MECHANISM FOR GAS ENGINES.

APPLICATION FILED AUG. 26, 1907.

*Fig. 1.*



*Fig. 2.*



Inventor

Witnesses

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# UNITED STATES PATENT OFFICE.

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## EXHAUST-CONTROL MECHANISM FOR GAS-ENGINES.

No. 874,974.

Specification of Letters Patent.

Patented Dec. 31, 1907

Application filed August 26, 1907. Serial No. 390,195.

*To all whom it may concern:*

Be it known that I, ERNEST C. MADDOX, a citizen of the United States, residing at Woodward, in the county of Woodward and State of Oklahoma, have invented a new and useful Exhaust-Control Mechanism for Gas-Engines, of which the following is a specification.

This invention relates to traction engines, and other vehicles in which internal combustion engines are employed for motor power.

The principal object of the invention is to provide an improved means for manually controlling the speed of the engine where the vehicle is crossing ditches or other obstructions in the road to the end that the speed may be lowered very quickly without the necessity of waiting for the action of the governor, and without cutting off or reducing the load through the feed pipe leading from the carbureter.

A further object of the invention is to provide a device in the nature of an attachment which may be placed in any ordinary four cycle engine for the purpose of holding the exhaust valve open and thus checking the speed of the engine at any time.

With these and other objects in view, as will more fully hereinafter appear, the invention consists in certain novel features of construction and arrangement of parts, hereinafter fully described, illustrated in the accompanying drawings, and particularly pointed out in the appended claims, it being understood that various changes in the form, proportions, size and minor details of the structure may be made without departing from the spirit or sacrificing any of the advantages of the invention.

In the accompanying drawings:—Figure 1 is an elevation of a portion of a gas engine illustrating the improved exhaust controlling device applied thereto. Fig. 2 is a perspective view of the controlling device detached.

Similar numerals of reference are employed to indicate corresponding parts throughout the several figures of the drawings.

In the engine shown, the exhaust valve *a* is carried by a stem *b* that is normally held in closed position by a spring *c*. The valve stem is engaged by a tappet arm *d* which is pivoted on a standard *e* projecting from the

head of the cylinder, the tappet being connected by a rod *f* to the cam or other device by which the exhaust valve is opened at regular intervals to permit the discharge of the products of combustion from the cylinder.

In carrying out the present invention provision is made for engaging the tappet arm *d* when the latter has been moved to exhaust valve opening position and holding the tappet with the exhaust valve open in order to reduce the speed.

The attachment comprises a yoke shaped bracket 10 provided at one end with an opening 11, and at the opposite end with a slot 12, this being arranged for the reception of bolts which are tapped in the carbureter connection, or at any other suitable point at the explosion chamber end of the cylinder. Pivoted to the central portion of the bracket 10 is a lever 15 having an operating handle 16 and provided with a locking shoulder 17 that preferably is arranged on a curved line struck from the center of the pivotal connection 11.

Extending from the upper end of the bracket is an arm 18 which is connected by a helical tension spring 19 to the lever 15, this spring normally holding the lever in elevated position. The lower face of the lever is arranged on a slightly concaved line terminating at the locking shoulder 17, and the lever is so positioned with respect to the tappet *d* that the forward edge of said tappet will move to a point beyond the vertical plane of the shoulder 17 each time the exhaust valve is moved to open position, and as the lever is normally elevated the tappet arm will not be engaged and held by said lever.

When the machine is crossing a ditch or meets an obstruction where it is desirable to quickly reduce the speed, the operator presses down on the lever and at the next movement of the tappet to valve opening position, the tappet will be engaged by the shoulder 17 and will be held with the valve in open position, so that the speed will be quickly reduced. As soon as the pressure on the lever is released, the spring elevates the lever to its normal idle position and the engine then operates in the usual manner.

It is obvious that where the construction and arrangement of the engine is not such as to render it convenient for the operator to stand directly at the explosion chamber, the



lever may be connected by any suitable means to a hand lever or foot lever within convenient reach of the operator.

I claim:—

- 5 An internal combustion engine including an exhaust valve, an exhaust valve stem, a tappet arm for engaging the stem, a bracket secured to a stationary portion of the engine, an arm projecting from the bracket, a lever  
10 pivoted to the bracket at a point above the tappet, and provided with a concaved lower surface and with a locking shoulder curyed

on an arc struck from the center of movement of the lever, and a spring connecting the lever to the arm and serving to hold said lever 15 normally inactive.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

ERNEST C. MADDOX.

Witnesses:

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C. C. MANSO.