

R. HUFF.
SPEED GOVERNING DEVICE FOR MOTOR VEHICLES.
APPLICATION FILED OCT. 14, 1905.

906,884.

Patented Dec. 15, 1908.

2 SHEETS—SHEET 1.

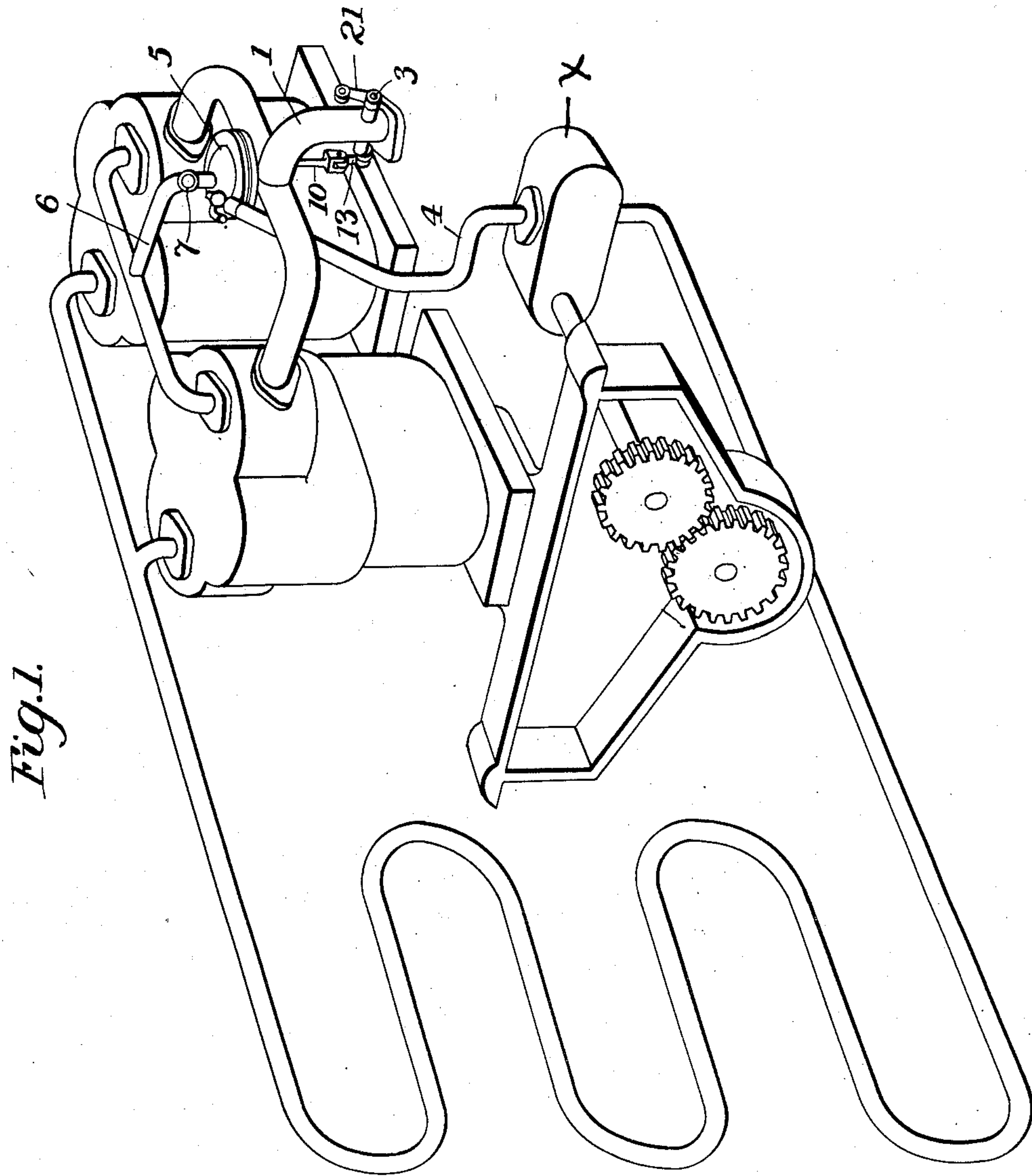


Fig. 1.

Witnesses
J. G. Stinkel
B. C. Rust

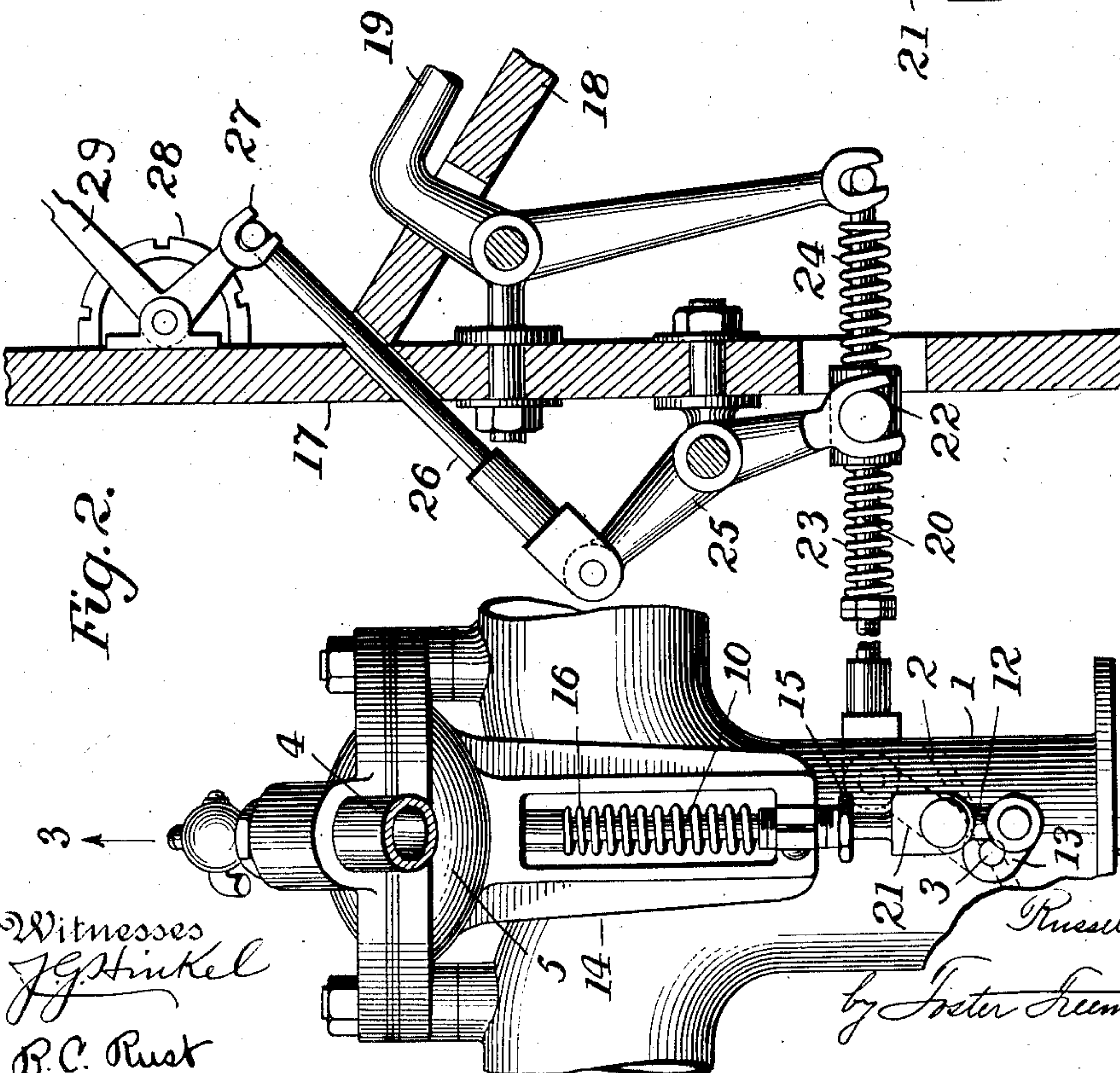
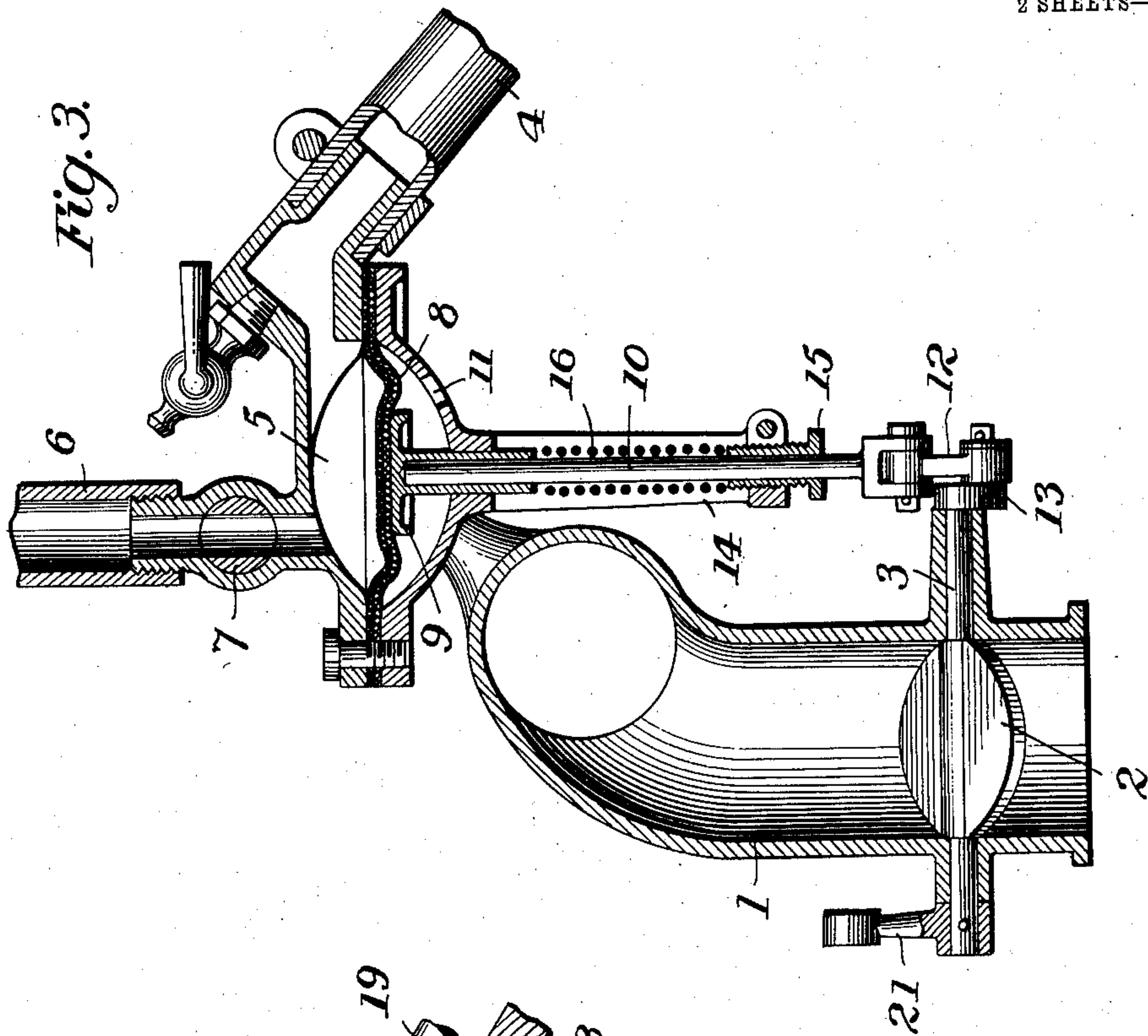
Inventor
Russell Huff
by Peter Freeman Watson
Attorneys

R. HUFF.
SPEED GOVERNING DEVICE FOR MOTOR VEHICLES.
APPLICATION FILED OCT. 14, 1905.

906,884.

Patented Dec. 15, 1908

2 SHEETS—SHEET 2.



Witnesses
J. G. Hinkel
B. C. Rust

Inventor
Russell Huff
by *Frederick Freeman & Watson*
Attorneys

UNITED STATES PATENT OFFICE.

RUSSELL HUFF, OF DETROIT, MICHIGAN, ASSIGNOR TO PACKARD MOTOR CAR COMPANY,
OF DETROIT, MICHIGAN, A CORPORATION OF WEST VIRGINIA.

SPEED-GOVERNING DEVICE FOR MOTOR-VEHICLES.

No. 906,884.

Specification of Letters Patent.

Patented Dec. 15, 1908.

Application filed October 14, 1905. Serial No. 282,844.

To all whom it may concern:

Be it known that I, RUSSELL HUFF, a citizen of the United States, and resident of Detroit, Wayne county, Michigan, have invented certain new and useful Improvements in Speed-Governing Devices for Motor-Vehicles, of which the following is a specification.

In most of the motor vehicles which are driven by hydrocarbon engines, water is circulated about the engine cylinders and through cooling or radiating coils for the purpose of preventing overheating of the engines.

The present invention comprises means governed by the water circulation for regulating the speed of the engines. The pump for circulating the water is driven directly from the engine and hence the flow of water is in proportion to the speed of the engine. Advantage is taken of this fact to govern the speed of the engine from the pressure of water delivered by the pump.

The invention will be particularly described in the following specification, reference being had to the accompanying drawing, in which,

Figure 1 is a diagram of part of a motor vehicle, illustrating the present invention; Fig. 2 is an enlarged view of the essential parts of the invention; and Fig. 3 is a section on the line 3—3 of Fig. 2.

Referring to the drawing, 1 indicates the pipe leading from the carbureter to the engine through which the mixture of air and hydrocarbon passes, and 2 indicates the throttle valve for controlling the supply of mixture to the engine. As shown, the pipe 1 has two branches, leading to the cylinders of a double cylinder engine. The throttle valve 2 is fixed to a shaft 3 which is journaled transversely in the pipe 1. By rocking the shaft the valve is opened or closed. The manner of controlling the valve will now be described.

The water from the pump X passes through a pipe 4 through a chamber 5 and into a pipe 6. The chamber 5 may be in any part of the water circulating system, but it is preferably located near the pump on the delivery side thereof, in which position the pressure of water conforms more nearly to the speed of the pump. The pipe 6 is provided with a suitable valve 7 for a purpose to be hereinafter explained.

In the chamber 5 is a diaphragm 8 of flexible material such as sheet metal or rubber. In the drawing there is illustrated a diaphragm comprising an upper layer of rubber and a lower layer of leather. This combination forms a very satisfactory diaphragm, the leather affording the necessary strength and the rubber being impervious to water. Beneath the diaphragm 8 is a head 9 on a stem 10 which slides in an opening in the bottom of the chamber 5. The chamber below the diaphragm is also preferably provided with an air vent 11. The stem 10 of the head 9 is connected by a link 12 with a crank 13 on the throttle valve shaft 3. The stem 10 is guided in a bracket 14 depending from the chamber 5 and a step or nut 15 which is adjustably mounted in said bracket supports a spring 16, which spring in turn bears upon the head 9 and presses it against the diaphragm. The pressure of the head upon the diaphragm may be regulated by adjusting the nut 15.

The operation of the governor above described is as follows: When the motor slows down, due to an up-grade, or for any other reason, the pump will slow down correspondingly, and the pressure will be reduced in chamber 5. The spring 16 will then raise the head 9 and stem 10 and this movement will be communicated through the shaft 3 and open the throttle valve. On the other hand, if the motor exceeds its normal speed, the pressure will rise in the chamber 5 and the head 9 and the stem 10 will be depressed, closing the throttle valve. The valve 7 in the outlet from the chamber 5 serves to regulate the pressure in said chamber and hence controls the normal operation of the diaphragm. This valve 7 is also useful for bringing the governor back to normal operation in case that the flow of water varies, due to the wearing of the pump, or from other causes.

In Fig. 2, I have shown the relation of the governing device to the dash board 17 and foot board 18 of the vehicle. I provide for hand and foot control of the throttle valve, as shown, so that the throttle may be opened beyond the normal to automatically speed the vehicle. For this purpose a pedal 19 suitably located and pivoted is connected by a rod 20 with a crank 21 on the valve shaft 3. On depressing the pedal the valve will obviously be opened and on releasing the foot

pressure the water pressure in the chamber 5 will bring the valve back to normal.

On the rod 20 is a sliding block 22 which is normally held in mid-position by springs 5 23, 24, coiled about the rod. The block 22 is engaged by a lever 25 having a connection 26 with a hand operated lever 27 which may be locked in any desired position by means of a toothed segment 28 and a handle 29. 10 By means of the connections between the handle 29 and the throttle valve, the latter may be opened to any desired extent to regulate the speed of the vehicle, that is, to set it for a given normal speed. The springs 15 23 and 24 thus hold the throttle valve yieldingly in any desired normal position and act as an additional balancing means for the governor, the said governor being required in its operation to overcome the tension of 20 one or the other of said springs 23 and 24. By varying the normal position of the throttle valve by the handle 29, as above described, the tension of the governor spring 16 is also varied proportionately.

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

1. In a motor vehicle, the combination with the motor, water circulating system,

pump and throttle valve, of a chamber in 30 said system through which the water passes, a movable part in said chamber controlled by the pressure of water therein, connections between the said movable part and the throttle valve, means for locking said throttle valve 35 yieldingly in any desired position, and manually operated means for temporarily opening the throttle valve without disturbing said locking means.

2. In a motor vehicle, the combination 40 with the motor, water circulating system, pump and throttle valve, of a chamber in said system through which the water passes, a movable part in said chamber controlled by the pressure of water therein, connections 45 between the said movable part and the throttle valve, and means for locking said throttle valve yieldingly in any desired position comprising two springs connected with the throttle valve, a part intermediate said 50 springs and devices for adjusting said part.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

RUSSELL HUFF.

Witnesses:

E. A. NELSON,
F. E. PAINE, Jr.