J. W. JONES.

SPEED CONTROLLING DEVICE.

APPLICATION FILED OCT. 24, 1907.

919,588.

Patented Apr. 27, 1909.

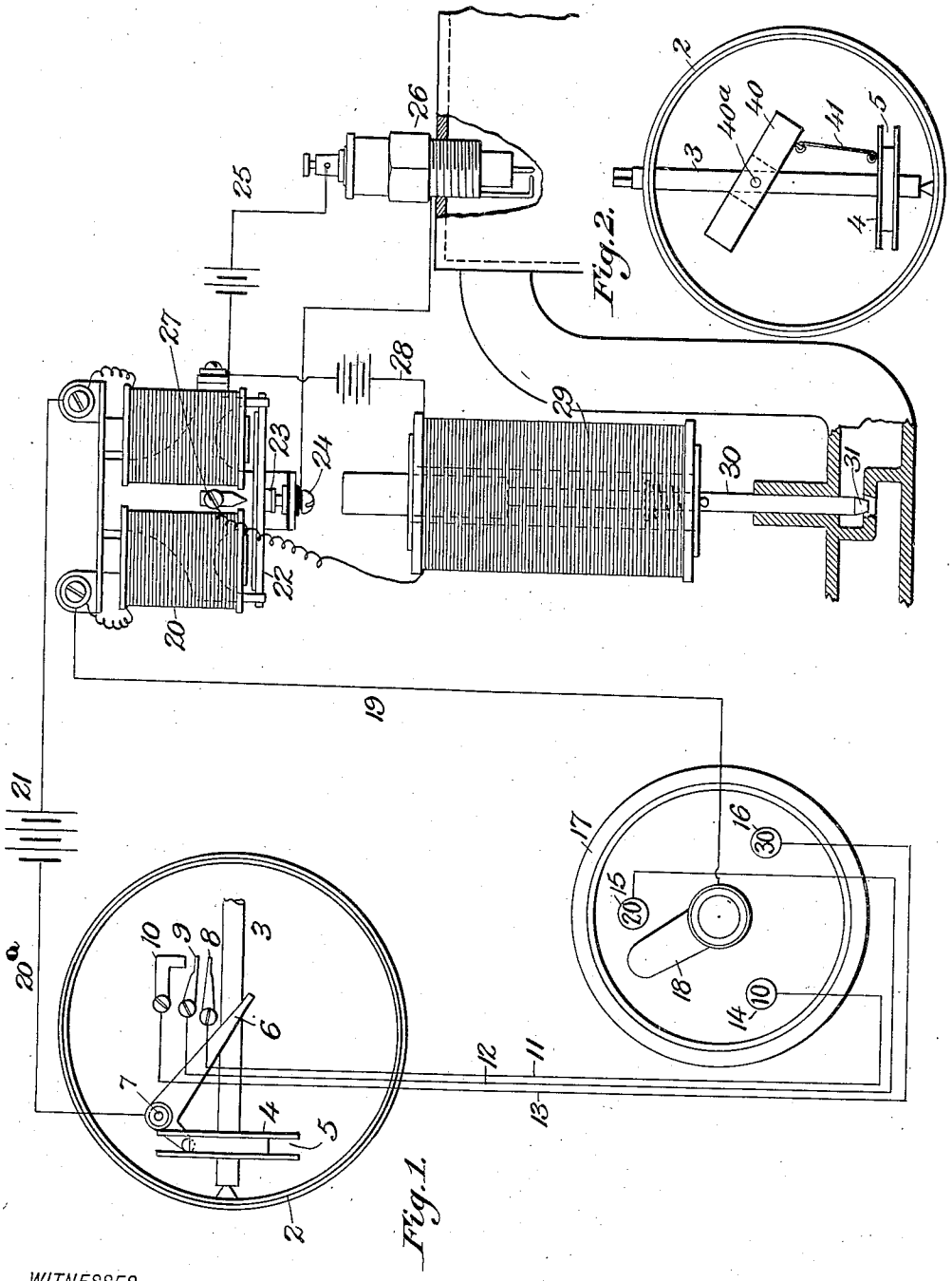


Fig. 1.

Fig. 2.

WITNESSES

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JOSEPH W. JONES, OF NEW YORK, N. Y.

SPEED-CONTROLLING DEVICE.

No. 919,588. Specification of Letters Patent. Patented April 27, 1909.

Application filed October 24, 1907. Serial No. 398,864.

To all whom it may concern:

Be it known that I, JOSEPH W. JONES, of the borough of Manhattan, city and State of New York, have invented certain new and useful Improvements in Speed-Controlling Devices, of which the following is a specification.

The invention relates to devices for controlling the speed of motors and other machinery, and its object is to provide means which may be connected to a motor or other machinery and which may be adapted to operate, upon a certain predetermined speed being reached, to shut off or limit the motive means and thereby stop or reduce the speed of the motor or other machinery with which it is connected.

The invention consists in the novel construction, combination and arrangement of devices and elements hereinafter more particularly described.

The device is intended to be used in connection with a speedometer or similar device and more especially to that type shown in my Patent #765,841, granted July 26, 1904, but it is obvious that it may be applied to any similar device for controlling motive means of any class.

In the accompanying drawings my invention is shown in a diagrammatic form, Figure 1 showing the circuits, and Fig. 2 the controlling device.

Referring now to this drawing, the speedometer, which may be of any ordinary or suitable type, may be seen represented at 2, the shaft 3 being adapted to be rotated by the motor, while the wheel 4 having a peripheral groove 5 is not only rotated by the shaft but is also shifted along the shaft by certain controlling means in order to shift a lever 6 pivoted at the point 7, the wheel 4 serving to control the index which indicates the speed at which the motor is working. This controlling means may be of any suitable type as for instance the means shown in a diagrammatic way in Fig. 2 where 40 represents a weight pivoted upon the shaft 3 so as to revolve therewith but yet swing thereon tending normally to assume a slanting direction as shown in Fig. 2, but adapted to assume a right angled position when rotated by reason of the centrifugal force of rotation; this weight may be connected with the wheel 4 by a link 41 and thus move the wheel 4 longitudinally along the shaft 3 to an extent proportioned to the rapidity of the revolution thereof.

Within the speedometer and in the path of the lever 6 is a series of contact points 8, 9 and 10 with which the lever successively comes in contact as it is turned upon its pivot, and from each of these contacts wires 11, 12 and 13 pass to the contact points 14, 15 and 16 of a switch 17, having the arm 18, adapted to be swung around to engage successively said contact points 14, 15 and 16. The arm 18 is connected by means of the line 19 with one of the poles of the electro-magnet 20, while the other pole of this magnet is connected with the lever 6 at its pivot by means of the line 20^a, having the battery 21 in its circuit and the electro-magnet has the usual armature 22 having a contact point 23 which engages a screw 24 and is adapted to close normally a circuit 25 having therein a spark plug 26 so that normally the spark plug is in operation in the gas engine and the same is always ready for work. When, however, this circuit is broken by the energization of the electro-magnet 20 the spark plug is rendered inoperative and thereby likewise the motor or engine.

Between the two coils of the magnet 20 is a contact point 27 forming part of a circuit 28 which is closed when the armature 22 is attracted by the magnet. This circuit includes a battery, and also a solenoid 29, adapted to lower a plunger and a valve stem 30 and thereby close a valve 31, thus shutting off the supply of motive power to the motor or engine. The electro-magnet 20 is only energized, however, when the lever 18 is connected with one of the contacts 14, 15 or 16, which for instance may respectively represent a speed of ten, twenty or thirty miles per hour, representing the rate at which it is desired to have the engine drive an automobile or boat or the motive means for any machinery. The speedometer, as is well known, indicates the speed at which any of these machines travel, and as the pointer travels over the dial representing the miles per hour, the lever 6 is carried with it, and in succession passes over the contact points 8, 9 and 10 and to that extent closes the circuit through the lines 11, 12 or 13. It will be obvious that if the lever 18 is set upon any certain one of its own contact points, it completes the circuit as far as the switch 17 is concerned. When therefore the speed-

ometer causes the lever 6 to make contact with its contact point corresponding to the contact point with which the lever 18 is at that time in contact, it will be seen that a complete circuit is established through the magnet 20 whereupon its armature 22 is attracted and the contact point 23 drawn away from the screw 24 thus breaking the circuit 25 and rendering the sparker inoperative, and at the same time drawing the armature 22 into contact with the point 27 and closing the circuit 28 whereby the supply of motive power to the engine is cut off.

I do not limit myself to the exact form of the invention herein shown and described, it being obvious that various modifications may be made in the mechanical construction of the invention, which is here shown and described in a diagrammatic way.

What I claim as new and desire to secure by Letters Patent is as follows:

1. In a speed controlling device, the combination with a motor or engine and an electric circuit controlling the operation of the same; of a switch in said circuit adapted to close said circuit through any one of a plurality of shunts arranged in parallel; an arm or lever in said circuit at the other end of said shunts adapted to be moved into various positions corresponding to varying rates of speed of said motor or engine and thereby to contact with one or another of said shunts and close said circuit therethrough; and means for operatively connecting said motor or engine with said arm or lever.

2. In a speed controlling device, the combination with a motor or engine comprising a spark plug and a spark plug circuit; of a main electric circuit comprising means for opening and closing said spark plug circuit; a switch in said main circuit adapted to close the same through any one of a plurality of shunts arranged in parallel; an arm or lever in said main circuit at the other end of said shunts adapted to be moved into various positions corresponding to varying rates of speed of said motor or engine and thereby to contact with one or another of said shunts and close said circuit therethrough; and means for operatively connecting said motor or engine with said arm or lever.

3. In a speed controlling device, the combination with a motor or engine, comprising a valve for controlling the motive power or force thereof; of a main electric circuit adapted to open and close said valve; a switch in said main circuit adapted to close the same through any one of a plurality of shunts arranged in parallel; an arm or lever in said main circuit at the other end of said shunts adapted to be moved into various positions corresponding to varying rates of speed of said motor or engine and thereby to contact with one or another of said shunts and close said circuit therethrough; and means for operatively connecting said motor or engine with said arm or lever.

In witness whereof I have hereunto signed my name this twenty-third day of October 1907, in the presence of two subscribing witnesses.

JOSEPH W. JONES.

Witnesses:
THOMAS S. BARRETT,
EDMUND J. SCOFIELD.