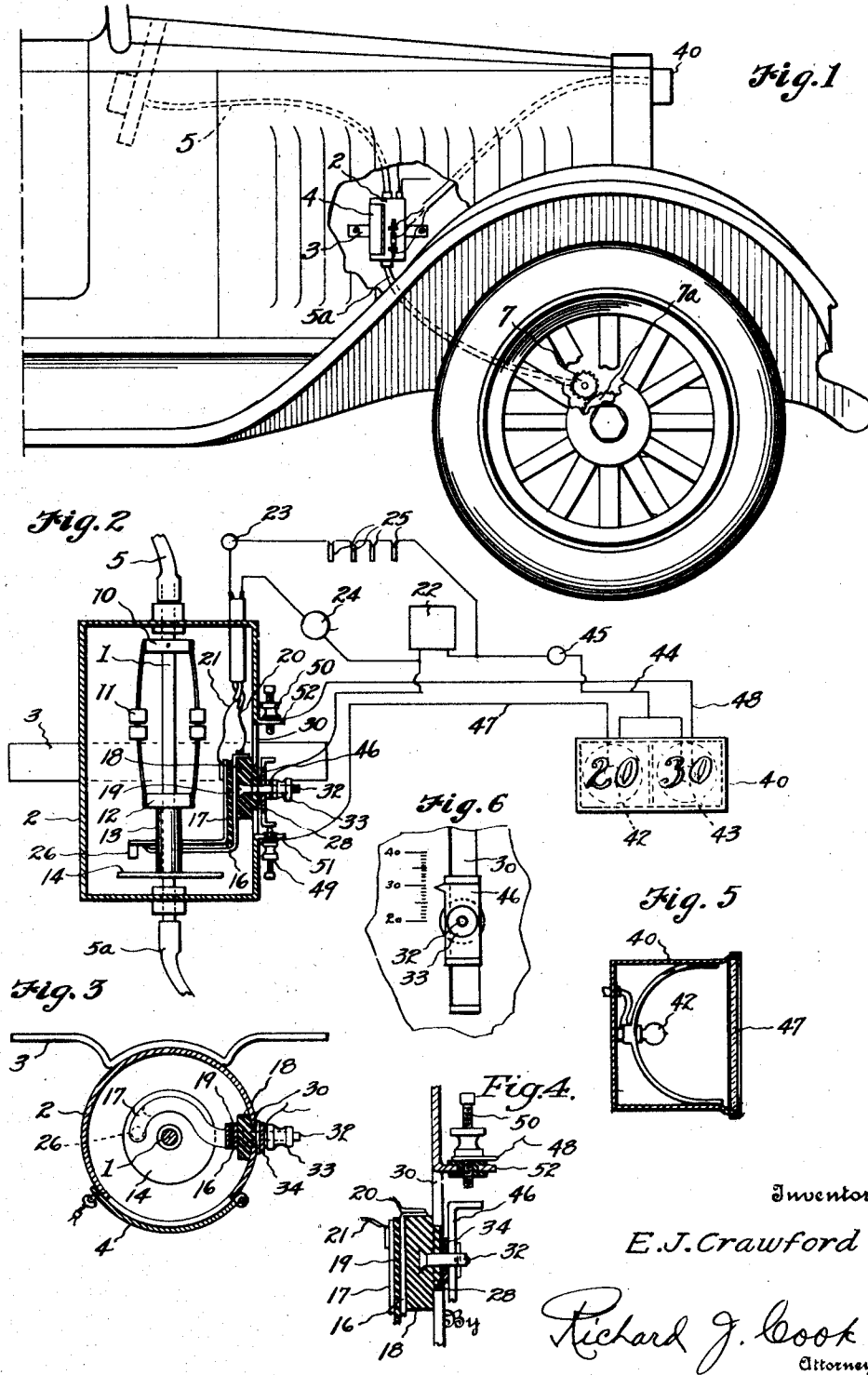


E. J. CRAWFORD.
SPEED CONTROL FOR MOTOR VEHICLES.
APPLICATION FILED FEB. 16, 1920.

1,384,730.

Patented July 12, 1921.



UNITED STATES PATENT OFFICE.

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1,384,730.

Specification of Letters Patent.

Patented July 12, 1921.

Application filed February 16, 1920. Serial No. 358,914.

To all whom it may concern:

Be it known that I, EDGAR J. CRAWFORD, a citizen of the United States, and resident of the city of Seattle, county of King, and State of Washington, have invented certain new and useful Improvements in Speed Controls for Motor-Vehicles, of which the following is a specification.

My invention relates to improvements in speed controllers for motor vehicles, and more particularly to a device of that character adapted for use in automobiles, or the like, comprising a governor mechanism that is preferably driven through a flexible connection with a wheel of the vehicle and is adapted to actuate mechanism for interrupting the electric circuit to the spark plugs of the vehicle engine when the velocity of the vehicle exceeds any predetermined speed for which the device is set.

The principal object of the invention is to provide a device of the above character, having an adjustably mounted circuit breaking member which will permit setting of the device to interrupt the engine at different maximum speeds accordingly, as is required by the speed laws of different localities.

It is also an object of the invention to provide in connection with the speed controlling mechanism, a means for conspicuously indicating to traffic officers, or others, the speed at which the device is set.

In accomplishing the objects of the invention, I have provided the improved details of construction, the preferred forms of which are illustrated in the accompanying drawings, wherein:

Figure 1 is a side view of the front portion of an automobile, showing speed controlling and indicating devices mounted thereon according to the present invention.

Fig. 2 is a detail, sectional view of the governor mechanism and the circuit breaking members, and a front view of the light housing wherein the speed designating members are displayed, together with a diagrammatic illustration of the wiring connections of the parts with an electric battery or other source of electricity and spark plugs of the vehicle engine.

Fig. 3 is a horizontal section of the governor housing and associated mechanism.

Fig. 4 is an enlarged sectional view of one of the contact members of the light circuit and adjustable block.

Fig. 5 is a sectional view through the light housing.

Fig. 6 is a detail front view of the adjustable contact members, and graduated scale whereby the device is set.

Referring more in detail to the drawings: 1 designates the driving shaft of the governor mechanism, which is revolubly mounted at its opposite ends within suitable anti-friction bearings carried by the end walls of a closed housing 2 which is mounted in any desirable manner, preferably by the bracket 3 shown, upon a part of the vehicle frame or upon the vehicle motor, so that the shaft will be maintained in a vertical position and that access may be easily had to the governor mechanism through an opening in the side of the housing which normally is closed by a hingedly mounted door 4.

The governor shaft is interposed between, and operatively joins the two ends of the sections 5 and 5^a, of a flexible shaft employed for driving the vehicle speedometer, and which extends from and is operated by a driving gear wheel 7 traveling in mesh with a gear wheel 7^a, that is fixed concentrically to the front wheel of the vehicle, so that the speed of the governor mechanism varies in accordance with the rate of travel of the vehicle.

Fixed to the shaft 1, near its upper end, is a collar 10, whereto the upper end of a governor 11 is attached; the lower end of the governor being attached to a collar 12 at the upper end of a sleeve 13 that is slidable along the shaft 1 and has a disk 14 at its lower end which is raised and lowered respectively as the speed of the governor is accelerated or retarded.

Since it is intended that the governor mechanism be employed as a means of interrupting the electric circuit to the spark plugs of the vehicle engine when a certain predetermined speed is reached, I have placed contact plates within the housing, one of which is actuated when the disk 14 engages therewith to open the electric circuit, and which may be adjusted to different distances from the disk so as to be actuated at different speeds of the vehicle. These two contact plates, 16 and 17, are mounted upon a block of insulating material 18 that is supported from the wall of the housing and is adjustable longitudinally with respect to the direction of the shaft 1. The plates are in-

5 insulated from each other for the greater part of their length by a strip of insulating material 19 and are connected respectively with circuit wires 20 and 21, which lead through a battery 22, a switch 23, and timing mechanism indicated at 24, to the spark plugs 25, of the vehicle engine.

Each of the plates is turned laterally at its lower end in the direction of the shaft; the end of the lower plate 16 being shorter than the plate 17 and has an upturned end that normally contacts with the upper plate so that an electric current may flow through the circuit wires to permit functioning of the spark plugs. The end of the upper plate extends within the path of the disk 14 and has a block of insulation 26 fixed to the end and under side thereof, which will be engaged by the disk 14 when the latter is sufficiently raised by the governor, so that the two plates will temporarily be separated and the electric circuit broken causing the spark plugs to stop functioning and a consequent slackening of the speed at which the vehicle is moving.

The rate at which a vehicle may travel before its electric circuit will be interrupted will depend on the positioning of the circuit breaking plates with respect to the disk 14, and since the speed laws effective in cities usually differ from those of country highways, it is desired that an adjustment of the contact members be easily made so that one driving from a city into the country need not still be limited to the speed set by the city laws.

This adjustment I have accomplished is as follows: The block 18, whereon the contact plates are mounted, has a guide rib 28 thereon which is adapted to fit within a slot 30 formed in the housing wall longitudinally with respect to the shaft 1, which maintains the block and contact plates thereon in proper alinement with the governor shaft and the disk. A screw 32 extends from the block outwardly through the slot and at its outer end has a nut 33 threaded thereon which may be tightened against a disk of insulating material 34, interposed between it and the housing to retain the block tightly at an adjusted position, it being apparent that, in the present construction, the nearer to the upper collar 10 that the block 18 is moved, the greater must be the speed of the vehicle before the circuit will be interrupted.

While it is apparent that by adjusting the block 18 along the slot 30, an indefinite number of different maximum speeds may be permitted; in the present device I have only provided for a conspicuous indication of two different speeds.

Means employed for displaying the speed for which the device is set comprises a housing 40 which preferably is mounted at the front of the vehicle, as indicated in Fig. 1.

Within this housing are two compartments provided with lights, 42 and 43, both of which are electrically connected to an electric circuit wire 44, which leads through the battery 22 and switch 45 to a plate 46, carried by the screw 32, and having individual circuit wires 47 and 48, which lead to adjustable binding posts 49 and 50, mounted on out-turned flanges 51 and 52, at the opposite ends of the slot 30. The plate 46 has laterally turned, opposite end portions which are adapted to engage the inner ends of the binding posts adjacent thereto, and when a circuit is closed by engagement with one of these posts a light will show in the housing 40.

In front of each light the housing is closed by a frosted glass plate 47, whereon a number is painted to indicate the speed for which the device is set. In this particular device, when the lower end of the plate is engaged with the lower post 49, the lamp back of the numeral twenty on the housing is illuminated to indicate that the device is set to travel no faster than twenty miles an hour, and when the block is moved to its upper limit the opposite light will show the numeral thirty, in the front of its compartment.

With the device so constructed, in using the same, assuming it is desired to set the device to limit the speed of the vehicle to twenty miles an hour, the block 18 is adjusted along the slot 30 to the proper position and held by tightening the nut 33. The lower binding post is then adjusted to contact the lower out-turned end of the plate 46 to close a circuit through the light back of numeral twenty in the housing 40 so that the speed at which the device is set will be conspicuously displayed. If it is desired to set the device to travel thirty miles per hour, the block is shifted to the opposite end of the slot and the binding post adjusted to close the circuit through the other light.

If it is desired, a graduated scale of miles could be marked on the housing, as shown in Fig. 6, so that by referring thereto the device could be quickly adjusted to operate at any desired maximum speed and if desired more lights than shown could be added and operated by providing more contact members, corresponding to the binding posts 49 and 50.

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

1. A speed controlling device for motor vehicles, comprising in combination, an electric circuit adapted to produce an electric spark in the engine cylinders, a governor housing, a governor shaft mounted within the housing and operatively connected with a wheel of the vehicle, a governor on said shaft, a disk slidable on the shaft to be

raised and lowered in accordance with the speed of the governor, a block mounted on the housing and adjustable in the longitudinal direction of the shaft, a pair of contact plates mounted on the block through which the electric circuit to the engine is maintained and which normally engage each other at their outer ends, one of said plates being yieldable and having a contact block thereon engageable by said disk to break connection between the plates at certain predetermined speeds of the governor according to the adjustment of the block, a series of electric lights mounted on the vehicle, a series of individual speed indicating numerals for said lights, a series of contact points on the housing having electric connection

with corresponding lights, a binding post in the block having electric connection through a source of electricity with all of said lights and a contact member electrically connected with the binding post engageable individually with said contact points to close an electric circuit through the lights to indicate the speed at which the governor will open the circuit through the engine.

2. A device as in claim 1 wherein the housing has a graduated scale marked thereon and the adjustable member carries a pointer movable adjacent the scale to designate the speed at which the device is set.

Signed at Seattle, Washington, this 31st day of January, 1920.

EDGAR J. CRAWFORD.