June 8, 1948. F. C. MANSEN 2,443,046

TACHOMETER DISTRIBUTOR DRIVE

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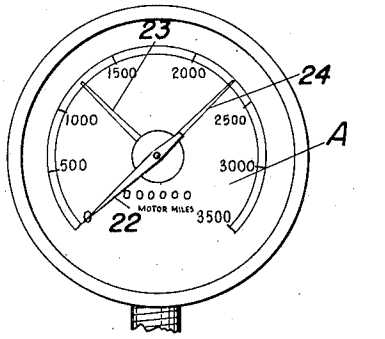
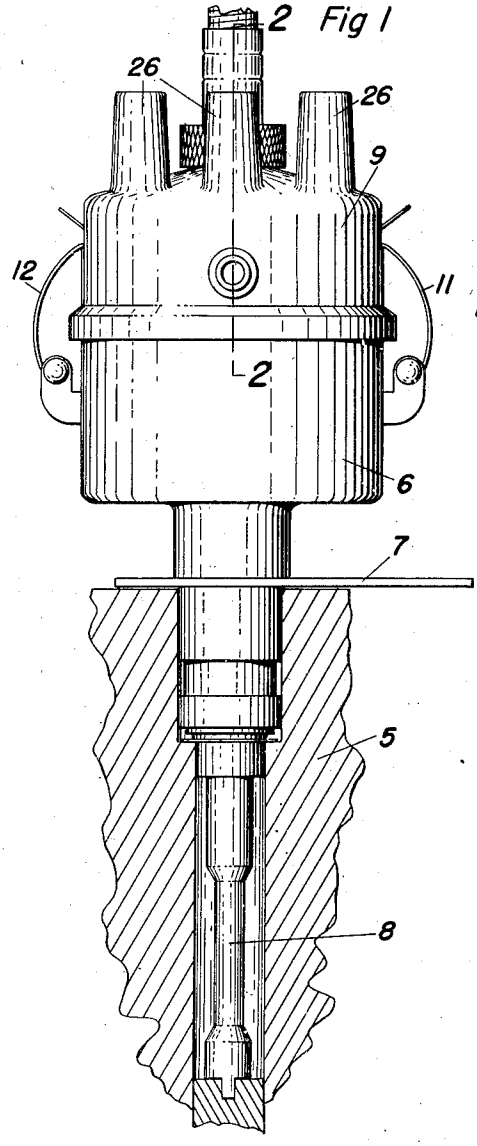


Fig 1



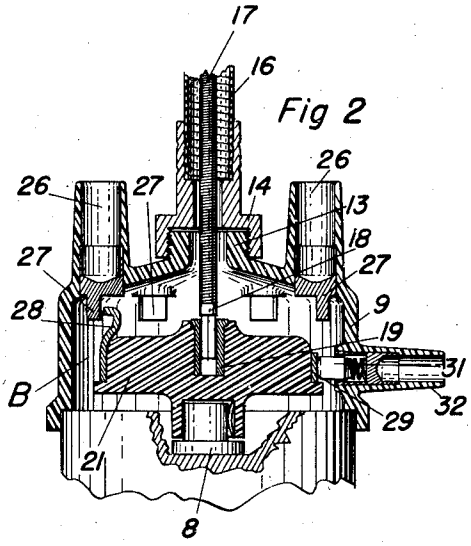


Fig 2

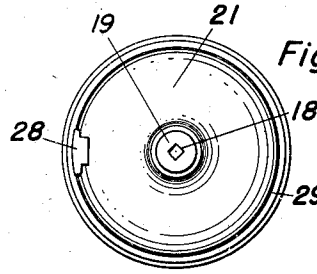


Fig 3

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TACHOMETER DISTRIBUTOR DRIVE

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2 Claims. (Cl. 200—19)

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This invention relates to improvements in a tachometer distributor drive.

The principal object of this invention is to provide means whereby a tachometer may be connected to and driven by the standard distributor rotor in contradistinction to being driven by a gear mechanism as is now common practice.

A further object is to produce a device of this character which is economical to manufacture and install.

A further object is to produce a device which may be installed without the use of special tools.

A still further object is to produce a device which does not materially increase the height of the distributor and its attached parts.

Other objects and advantages will be apparent during the course of the following description.

In the accompanying drawings forming a part of this specification and in which like numerals are employed to designate like parts throughout the same,

Fig. 1 is a side elevation of a conventional distributor having my invention applied thereto.

Fig. 2 is a fragmentary vertical cross-sectional view of the upper portion of the distributor and taken on the line 2—2 of Fig. 1, and

Fig. 3 is a top plan view of the combined tachometer drive and distributor rotor.

In the driving of trucks and other heavy vehicles it is quite important that the engine speed be controlled as to the number of revolutions per minute in order that the same may work most efficiently and also it is advantageous to record the motor miles that an engine runs.

The motor miles of an engine are not the same as the road miles inasmuch as during the idling, while a car is stopped, the mileage is being accumulated.

There are many concerns who service their motors on a motor-mile basis, thus contributing to the efficiency of the motor, as well as to the general upkeep of the equipment. In order to record the motor-miles and to also observe the revolutions per minute, it has been customary to employ a tachometer which registers both features.

The face of the tachometer, as a general rule, has a pair of spaced red arrows which indicate the area within which the tachometer pointer should remain if the motor is operating at its most efficient speed.

These tachometers have heretofore been driven from a rotary part of the motor, as for example, the cam-shaft, the timer-shaft, or any other suitable rotary part.

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It has also been necessary to provide complicated castings for the mounting of the tachometer drive, each casting being especially designed for the particular motor upon which the tachometer is to be mounted, and consequently the various manufacturers find it necessary to stock eight or ten different kind of mountings for a relatively small number of standard type motors; also, should the motor be changed by the manufacturer, the tachometer manufacturer, in turn, must change its casting to suit the changed motor.

Therefore, it is obvious that a considerable amount of money is involved in the cost of manufacture.

Applicant has designed a tachometer drive which may be mounted directly within an ordinary standard distributor, and inasmuch as there are only a few types of distributors, it will be apparent that only a very few mountings will be required to accommodate for all of the various types of motors.

In the accompanying drawings wherein for the purpose of illustration is shown a preferred embodiment of my invention, the numeral 5 designates a portion of the engine upon which the customary distributor base 6 is positioned and rotated for timing through the medium of a lever 7.

The customary drive shaft is shown at 8. Mounted upon the base 6 is the usual distributor cap 9, which is held thereon by the ordinary springs 11 and 12. The construction thus far described is that generally found upon all standard motor equipment.

In accomplishing the objects of my invention I change the construction of the distributor cap 9 by forming a boss 13 in the top center thereof, which position is ordinarily occupied by the high tension wire, which I remove and replace as will be hereinafter described.

This boss 13 is threaded so as to receive a fixture 14, into which is secured a flexible housing 16, through which extends a flexible cable 17, the lower end of which has a squared head 18, having a slip fit with a squared bushing 19, centrally positioned in the rotor 21, which rotor in turn is mounted on the upper end of the drive shaft 8, as is customary practice.

The opposite end of the flexible cable 17 is connected to the tachometer which is designated as a whole in Fig. 1 by the letter "A" and drives the same in such a manner that the hand 22 will move over the dial and may be maintained

with proper motor speed between the red arrows 23 and 24.

The cap 9 has the customary distributor sockets 26, into which the various spark plug wires extend and engage the metal contacts 27, which extend into the chamber "B" formed by the cap.

These contacts are in turn in alignment with the end of an arm 28 mounted on the rotor 21 and secured to a collector ring 29 mounted on the periphery of the rotor.

A spring pressed contact 31 engages the collector ring 29, which contact is in turn positioned in a socket 32, into which the high tension wire before mentioned is placed.

The result of this construction is that when it is desired to place a tachometer on any motor vehicle it is merely necessary to provide a special rotor constructed in accordance with my invention, which takes the place of an ordinary rotor, and to provide a special distributor cap, wherein the tachometer may be attached thereto and the high tension wire so positioned that it will engage the collector ring on the rotor.

In operation, when the engine is running, rotary movement will be transmitted through the shaft 8 to the rotor 21, and motion will also be transmitted through the cable 17 to the tachometer pointer, causing the same to move over the face of the dial.

As the rotor moves, the arm 28 will pass in close proximity to each of the contacts 27 and current will be distributed to the various spark plugs in the customary manner.

It is to be understood that the form of my invention herewith shown and described it to be taken as a preferred example of the same and

that various changes relative to the material, size, shape and arrangement of parts may be resorted to without departing from the spirit of the invention or the scope of the subjoined claims.

Having thus described my invention, I claim:

1. In a device of the character described, a distributor base, a driven rotor positioned in said base, said rotor having a collector ring mounted on its periphery, an arm extending upwardly from said ring, a cap secured to said base and supporting a plurality of contacts in alignment with said arm, one of said contacts being in alignment with said ring, and a tachometer cable extending through said cap and having its end engaging said rotor to be driven thereby.

2. In a tachometer drive, the combination with a distributor having a base and a cap, a driven rotor mounted in said base, a tachometer cable extending through said cap and rotatably positioned therein, said cable engaging said rotor and having driving connection therewith, and means carried by said cap and said rotor for distributing current therethrough in a timed sequence.

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