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1,854,360

TIMER

Filed Dec. 7, 1928

Fig. 1.

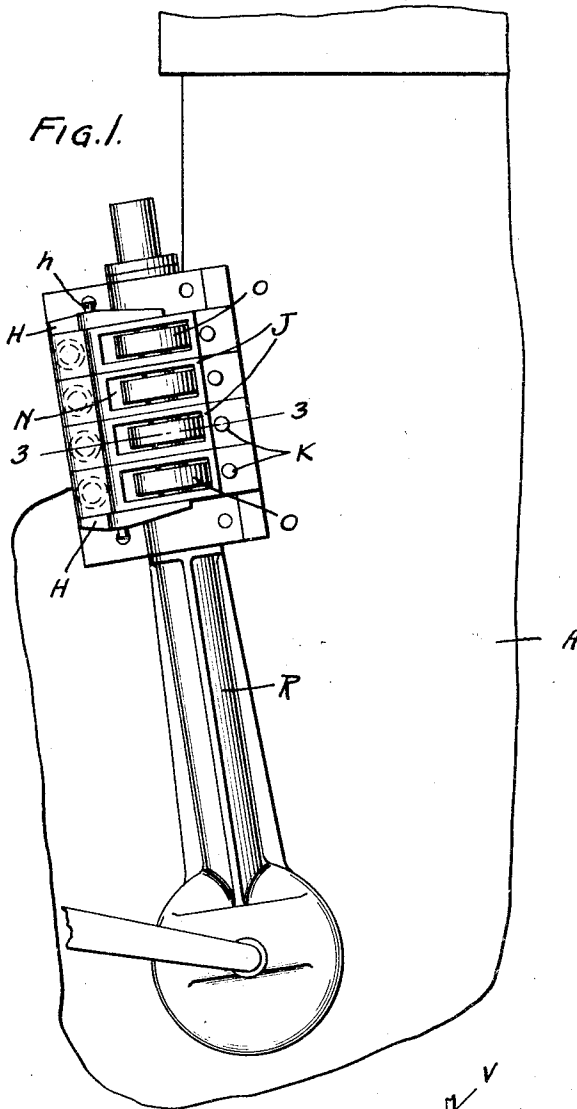


Fig. 2

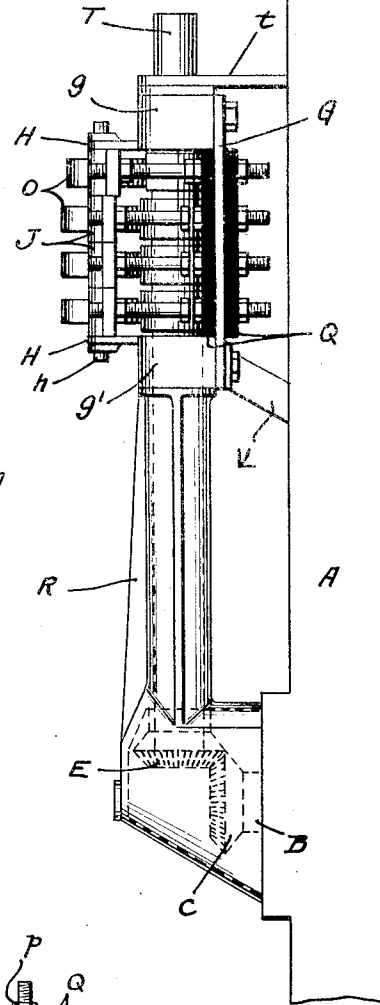
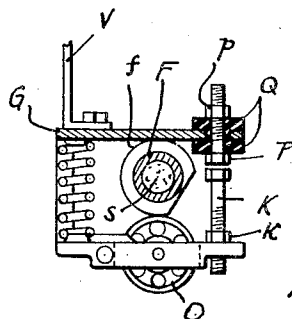


Fig. 3



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TIMER

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This invention contemplates the construction of a timer or distributor in which a series of adjustable contact elements are carried on pivoted arms, the latter being each provided with anti-friction rollers engaging cams fixed to a rotating shaft.

The construction and arrangement of the parts forming this invention and the mounting therefor, is such as to produce, as nearly perfect as possible, a primary connection with the engine at the time of contact. The contact elements themselves are individually adjustable which permits the elimination of engine vibration and the increased development of power by a more accurate timing of explosions.

Lubrication is provided for the various bearings by accumulating the lubricant in a wick in the cam shaft and distributing therefrom.

Other features, such as the bracing of the assembly, the mounting of the fixed contact points and the arrangement of the springs attribute to the success of the device.

Reference will be had to the accompanying drawings forming a part of this specification and wherein like characters of reference designate corresponding parts throughout the several views, in which:

Fig. 1 is a side elevation of the device with a fragmentary showing of a gas engine;

Fig. 2 is an end elevation; and

Fig. 3 is a transverse section on line 3—3 of Fig. 1.

A conventional gas engine is indicated by reference character A having a cam shaft B to which is fixed the bevel gear C which meshes with the gear E on the lower extremity of the cam shaft F. A plurality of cams *f* are fixed to the cam shaft F near the upper extremity thereof and actuate the contact levers as more clearly hereinafter described.

The assembly forming the present timer structure is carried by a supporting bracket including a base plate G formed with spaced aligned upper and lower bearings *g* and *g'* respectively, through which the cam shaft F extends. Integral brackets H extend outwardly from the bearings *g*, *g'* and support the pivot pin *h* upon which the contact levers

J are mounted. Adjustable contact members K are carried by the forward extremity of each contact lever and are in the nature of screw studs, the threaded ends of which extend into the levers and are locked in adjusted position by the lock nut *k*. Rearward of the pivot pin *h* studs are formed for receiving one of the extremities of the coil spring L, the opposite ends of which engage the studs M mounted on the base plate G. The central portion of each contact lever is cut away as at N to receive the anti-friction rollers O, the latter contacting with the cams *f* on the cam shaft F. The fixed contacts P are insulated from the base plate G by means of the fiber plates Q. These fixed contacts P are in the nature of bolts and are held in fixed position by the nuts *p* which engage the outer insulating plate and bind the head of the contact member against the inner insulating plate.

The cam shaft F below the timer assembly and the gears E and C and the extremity of the cam shaft D are all encased in the casing R, through which lubricant is caused to travel and accumulate in the wick S in the cam shaft F which latter is hollow for a portion of its length to accommodate the wicking.

A cap T fits over the upper extremity of the cam shaft F and the bracket *t* retains the cap in position and also secures the assembly at its upper end to the engine frame. Another bracket V may be provided to retain the parts in their respective positions and in the present disclosure this bracket V is bolted at one end to the timer casing. The opposite end will be fixed to any available portion of the engine frame.

The disclosure in the present application is obviously for a four cylinder motor, or a motor with four points of ignition. The same inventive idea could be utilized in motors of other capacity by increasing the number of cams, contacts and contact levers. Except for the change in the number of these elements the balance of the structure will be substantially identical with that disclosed. The two most important features of the present structure consists in the provision of means for a quick testing of the ignition system, an adjustment of the contact points whereby the

full power of the motor may be developed, and the system of lubrication which includes the accumulation of the oil in a wick reservoir and a dispensing from this wick reservoir to the various bearing surfaces.

What I claim as new and desire to secure by Letters Patent of the United States is:

1. A timer for internal combustion engines, comprising a substantially rectangular plate member, supporting means for said plate, a pair of spaced alined bearings formed on said plate intermediate the side edges of the latter, a plurality of fixed contacts carried by the plate adjacent one side edge thereof, a pair of spaced alined brackets formed on said plate adjacent its opposite side edge and extending outwardly at substantially right angles thereto, a plurality of contacts pivotally supported between said brackets, means for normally urging the last named contacts into engagement with the fixed contacts, a rotatable shaft received in said bearings, a plurality of spaced cams carried by said shaft arranged to intermittently separate said contacts, and means for actuating said shaft.

2. A timer for internal combustion engines, comprising a vertically disposed substantially rectangular plate member, supporting means for said plate, a bearing member formed adjacent the upper and lower portions of the plate and intermediate the side edges of the latter, a plurality of spaced alined fixed contacts carried by the plate adjacent one side edge thereof, a pair of spaced alined brackets formed on said plate adjacent the opposite side edge of the latter and extending outwardly at substantially right angles thereto, a series of spaced insulated contacts pivotally supported between said brackets, spring means carried by and extending outwardly at substantially right angles to said plate for normally urging the last named contacts into engagement with the fixed contacts, a hollow shaft rotatably supported in said bearings, spaced cams on said shaft arranged to intermittently separate said contacts, means within said shaft for lubricating the moving parts, and means for actuating the shaft.

In testimony whereof I affix my signature.
ARTHUR J. WOODFORD.

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