March 21, 1939. J. G. KUBELUS 2,151,519

DISTRIBUTOR FOR INTERNAL COMBUSTION ENGINES

Filed June 5, 1937

Fig. 1.

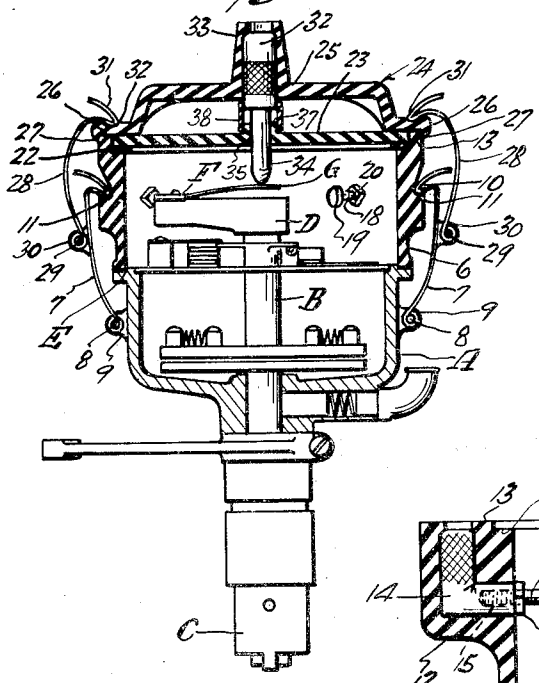
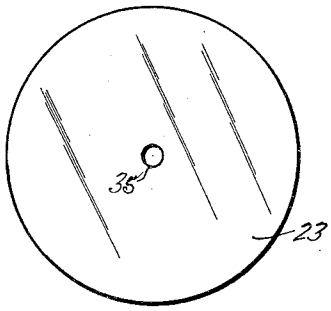


Fig. 4.



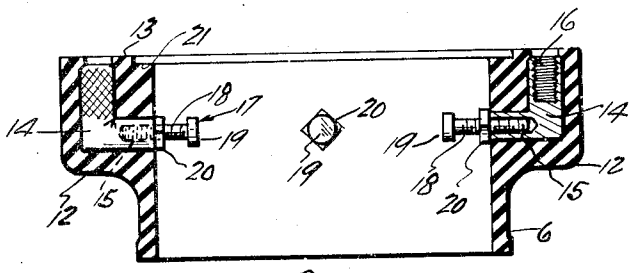
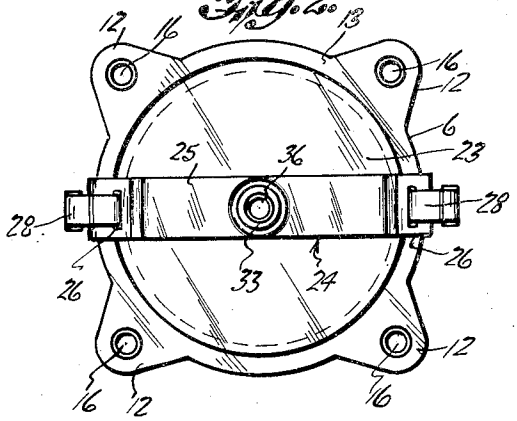


Fig. 3.

Fig. 2.



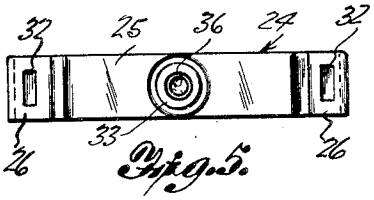


Fig. 5.

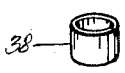


Fig. 6.

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2,151,519

DISTRIBUTOR FOR INTERNAL COMBUSTION ENGINES

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Application June 5, 1937, Serial No. 146,530

3 Claims. (Cl. 200—21)

My invention relates to improvements in distributors for the ignition systems of internal combustion engines.

The main object of my invention is to provide a distributor in which the contacts or terminals are adjustable in a radial direction so that they will at all times stand at the proper spacing relative to the rotor which rotates between the contacts.

Another object is to provide a distributor having a novel form of cover assembly wherein a solid disk-like cover is used to seal the distributor cap or housing against the entrance of dirt and other foreign matter but which may be removed to expose the interior of the distributor to view in actual operation, the center terminal being supported meanwhile by a cross piece or bridge. Any defects in the contact spacing and operation may be readily determined by inspection of the parts in actual operation.

A further object is to provide a distributor of this kind in a simple, practical and inexpensive form.

With these and other objects in view the invention resides in the novel construction and arrangement of parts as hereinafter fully set forth and claimed, reference being had to the accompanying drawing as showing a preferred embodiment of my invention for purposes of exemplification.

In the drawing:

Figure 1 is a vertical cross section through a distributor constructed in accordance with my invention.

Figure 2 is a plan view of the distributor.

Figure 3 is an enlarged cross section of the cap or housing alone.

Figure 4 is a plan view of the cover disk alone.

Figure 5 is a plan view of the cover bar or bridge alone.

Figure 6 is a perspective view of the rubber sleeve used to seal around the center contact pin.

Referring now with more particularity to the drawing the reference character A designates a distributor body of conventional form the same including the rotor shaft B extended vertically and centrally through it with a drive connection C at its lower end by which it is rotated by the engine to which it is attached (not shown). The shaft B carries a rotor D at its upper end above the level of the upper end E of the body A, and this rotor has the usual contact cam F and spring G. These parts are all entirely conventional and no invention therefor is herein claimed.

My invention comprises a cylindrical cap or housing 6 adapted to seat at its lower end on the upper end E of the body A on which it is removably secured by hooks 7 each made of spring strip pivoted at one end on a pin 8 between ears 9 on the body A and having at its upper end an inwardly turned prong or knee 10 which may be engaged in a recess 11 in the side of the cap 6. The hooks may be disengaged by springing them free from the recesses 11 and the cap 6 may then be lifted from the body A as desired. At radially spaced points around its periphery the cap 6 has moulded bosses 12 which are faced off flush with its upper end 13 as shown. Contact receptacles or seats 14 of L-shaped form are imbedded in the bosses 12 and have tapped bores 15 opening inwardly radially through the inner peripheral wall of the cap and the other arms of the receptacles are upwardly extended and have tapped bores 16 to receive the usual distributor wires (not shown). The receptacles 14 are made of metal to carry current from the wires.

Contacts 17 are provided one for each receptacle 14 and each comprises a threaded stem or shank 18, a flat head 19 and a lock nut 20 threaded on the stem. The stems 18 are screwed in the bores 15 of the receptacles 14 and the lock nuts 20 are turned up against the ends of the bores to lock the contacts therein. The contacts may thus be screwed into or out of the bores 15 to adjust them radially so that the contact cam F on the rotor D will pass each head 19 at the proper spacing as measured by a feeler gauge of usual form (not shown) inserted between these parts. This mounting of the contacts 17 permits convenient individual adjustment of each contact as may be necessary in use. Of course the number of contacts depends on the number of cylinders in the engine to which the distributor is mounted.

The upper end 13 of the cap 6 is recessed annularly around its upper edge forming a seat 21 for a gasket 22 and a cover disk 23 is provided of such diameter and thickness as to fit down on this gasket 22 flush with the end 13. A cover cross bar or bridge 24 is provided and has the narrow center portion 25 and the downwardly turned feet 26 spaced to sit on the upper end 13 of the cap 6 and the adjacent edge of the disk 23, the extremities of the feet 26 also having downturned hooks 27 to overhang the outer periphery of the cap. This bridge 24 is pressed down in place also holding the disk 23 on its gasket 22 by upper hooks 28. These hooks 28 are

similar to the aforesaid hooks 7, being made of spring strip and pivoted at their lower ends on pins 29 extended between ears 30 which are turned outward from the hooks 7 midway of their length. The upper hooks 28 have the inturned loops 31 which overlie the feet 26 and rest in sockets 32 in the upper faces thereof to hold the cover assembly in place as shown in Figure 1.

A center contact receptacle 32 is imbedded in a boss 33 formed centrally in the bridge 24 and a contact pin 34 depends from this receptacle 32 down into electrical engagement with the rotor spring G. The cover disk 23 has a central aperture 35 to clear the pin 34. The upper end of the receptacle 32 has a threaded bore 36 to receive the usual center wire (not shown).

The receptacle 32 is extended downward somewhat and a boss 37 is extended upward from the disk 23 around the aperture 35. A short length of soft rubber tubing 38 is then slipped over these parts sealing the aperture around the pin 34 and preventing water or other foreign matter from entering around the pin and hindering the operation of the distributor.

The operation of the distributor is identical to that of the present forms. By loosening the upper hooks 28 the bridge 24 may be removed, the disk 23 removed, and then by replacing the bridge and hooks the pin 34 will still make contact with the rotor spring G thus allowing the distributor to continue to operate while permitting a view of the parts as they operate. This is of great advantage in adjusting the distributor for proper operation and locating the cause of any trouble which may arise.

The cap 6, disk 23 and bridge 24 are all moulded of Bakelite or similar material for purposes of insulation.

While I have herein set forth a certain preferred embodiment of my invention, it is understood that I may vary from the same in minor structural details so as best to provide a practical device for the purposes intended, not departing from the spirit of the invention and within the scope of the appended claims.

I claim:

1. A cap assembly for mounting atop a conventional form of distributor body, the same including an open cylindrical housing for seating upon the distributor body, a cover disk removably fitted to the predetermined upper edge of the housing, an arched bridge piece removably seated over the cover disk with its ends bearing upon the disk, releasable means for securing the housing to the distributor body, and releasable means for securing the bridge piece in place upon the cover disk.

2. A cap assembly for mounting atop a conventional cylindrical form of distributor body, the same including an open cylindrical housing for operatively seating upon upper edge of the distributor body, a cover disk removably seated upon the predetermined upper edge of the housing, an arched bridge piece removably mounted over the cover disk with the feet thereof bearing upon the margins thereof to hold same in place, the said feet on the removal of the cover disk being arranged to likewise operatively engage the said upper edge of the housing, releasable means for securing the housing to the distributor body, and releasable means for securing the bridge piece in place either upon the cover disk or upon the upper edge of the housing when the cover disk is removed.

3. In an assembly as defined in claim 6, an electrical contact element operatively seated centrally in the bridge piece and extended down through the cover disk, the latter being apertured for that purpose, and whereby the cover disk may be removed and the bridge piece then replaced and supported upon the upper edge of the housing with the contact element in operative position.

JOSEPH G. KUBELUS.