Nov. 29, 1949 P. B. PERSON 2,489,812

AUTOMOBILE DISTRIBUTOR IGNITION ASSEMBLY

Filed May 4, 1946

Fig. 1.

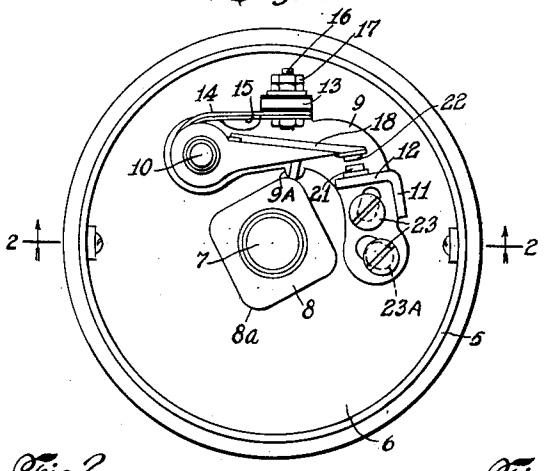


Fig. 2.

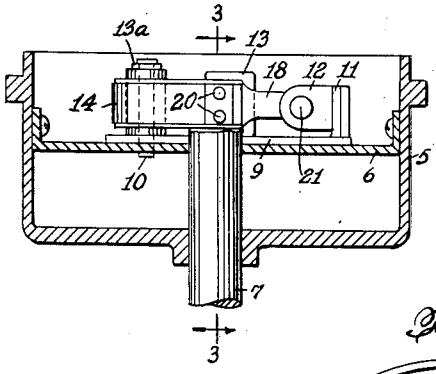


Fig. 3.

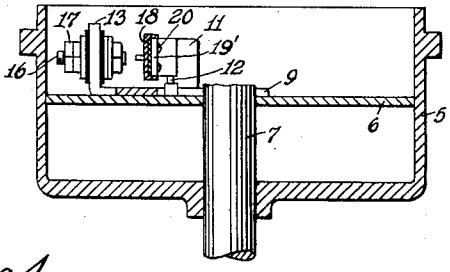
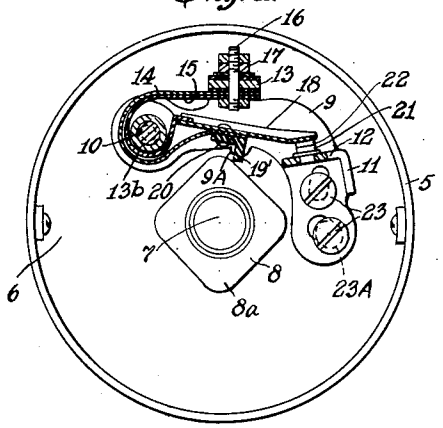


Fig. 4.



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AUTOMOBILE DISTRIBUTOR IGNITION ASSEMBLY

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4 Claims. (Cl. 200—30)

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This invention relates to an improved ignition contact unit for automobile and truck assemblies, and one of its objects is to provide a unit by means of which the working relation between the fixed contact point and the movable contact point may be standardized and maintained in maximum service condition, through factory assembled construction, which will eliminate local repair and replacement service of distributor parts, and insure that the spark gap best suited for an engine may be maintained as predetermined by rigid factory and engineering controls, and inaccurate adjustments prevented.

Another object of the invention is to provide an ignition distributor assembly with a cam follower made of reinforced plastic material, which will prolong the effective life of the distributor cam and give the maximum service in operation.

With the above and other objects in view the invention comprises certain new and useful constructions, combinations and arrangements of parts, clearly described in the following specification, and fully illustrated in the drawings, in which:

Fig. 1 is a top plan view.

Fig. 2 is a vertical sectional view, taken on line 2—2 of Fig. 1, looking in the direction of the arrows.

Fig. 3 is a sectional view taken on line 3—3 of Fig. 2, looking in the direction of the arrows.

Fig. 4 is a sectional view taken through the distributor assembly, on a horizontal line.

Referring to the drawings, which illustrate a practical embodiment of the invention, 5 designates distributor case or housing, of conventional construction, having a horizontal partition or wall 6. The usual shaft 7 is located centrally of the case or housing, and is equipped with a cam 8, in this case shown to be approximately rectangular, with rounded corners 8a.

On the horizontal wall 6 an L-shaped metal arm 9 is arranged. On one end of this arm a stud shaft 10 is fixed. On the other end of the arm an integral lug or bracket 11 is formed. This lug is also L-shaped and thus provides a short arm 12, which extends over the main arm or base 9.

The base arm 9 is also formed with a lug 13, located between the stub shaft 10 and the short lug arm 12. Also across from lug 13 on base arm 9, is a soft metal lug 9A. To the lug 13 the end of a conductor 14 and leaf spring 15 are secured by the binding screw 16 and the nuts 17.

To the stub shaft 10 a make and break lever 18 is mounted and adapted to swing around the

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same, and the conductor 14 and leaf spring 15 are curved around the hub of this lever. The leaf spring 15 being bent over against the inner end of said lever 18. The cam follower 19' is secured by the rivets 20 to the side of the make-and-break lever 18, and these rivets pass through the end of the conductor 14 and thereby connect the conductor to the lever.

The lug arm 12 is provided with a contact element 21, and the free or swinging end of the make-and-break lever 18 is provided with a contact element 22, adapted to have full contacting engagement with the contact element 21.

The cam follower 19' is constructed of laminated plastic material, and is L-shaped. This follower thus engages the edge of the distributor cam 8, and is shifted by the action of this cam so as to move the contact element 22 of the lever 18 away from the contact element 21 of the lug arm 12. The distance travelled by the movable contact element 22 and fixed contact element 21 is determined by the sweep or dwell of the cam, and by the length of the follower from the lever 18 to its outer end. The lever 18 is forced into contact with the fixed contact 21 by the reaction of the spring 15.

The spring and conductor 14 are insulated from the supporting bracket lug 13, by the washers 13a and sleeve 13b. The base L-shaped arm 9 is attached to the horizontal wall 6 by means of the screws 23.

The arm 9 is provided with a soft metal lug 9a, and the outer edge of this lug, which is rounded, is so aligned with the cam follower 19', that when the soft metal lug 9a is brought in contact with the lobe 8a of cam 8, and the cam follower is in contact with lobe 8a of cam 8, the separation of the contact elements 21 and 22 will be established through a gap being formed therebetween. The width of this gap is predetermined by the distance that the cam follower 19', protrudes beyond the lobe contact edge of lug 9a on arm 9.

When one or both of the contact elements become defective through continuous sparking, the entire arm 9, together with the spring, the make-and-break lever, and the two contact elements, is removed from the distributor case and a new assembly unit is installed in position.

The cam follower and the soft metal lug are given precision adjustment in the factory, and when the car owner purchases replacement parts, he has no problem of adapting the unit to the distributor of his car, but is simply required to install the unit in place effecting its proper predeterminable adjustment by placing base arm 9

in such a position that lug 9*a* will just touch cam lobe 8*a* and thus snugly abut against the same and in contact therewith but without obstructing its passing rotary movement. Arm 9 is then fastened in this particular adjustment position by screws 23 which for that purpose are adjustably slidable in slots provided in said base arm 9 and disposed under the heads of these screws which are adapted to threadedly engage horizontal wall 6 so as to tighten base arm 9 thereto when the described adjustment has been made. These lugs 9*a* can be provided on base arms of the type described, in a range of different sizes so as to conform with the dimensions of various types of distributors and will thus standardize this base arm element and make it directly adjustable in one operation. This centralizes the replacement of sparking points under engineering controls in the factory, where perfect face alignment of spark points is established and eliminates the hit-and-miss methods of individual car owners and service stations. The soft metal lug also prevents scoring the cam. It is understood that various changes in the details of construction, their combination and arrangement, may be made, within the scope of the invention, as defined in the claims.

Having described the invention I claim as new:

1. In an ignition distributor, in combination, a housing, a horizontal wall in said housing, a rotatable cam member on said wall, a base arm unit detachably and adjustably secured to said wall, said unit comprising a base arm, a stub shaft on one end of said base arm rectangularly disposed thereto, a make and break lever pivotally swingable on said stub shaft, a movable contact element on the free end of said make and break lever, a fixed contact element on the opposite end of said base arm, said fixed contact element being disposed opposite said movable contact element so as to be abuttingly engageable by same when the said lever is biased towards said fixed contact element, a stud on said lever adapted to ride on said cam member and thereby to actuate said make and break lever, and a lug projecting from said base arm, said lug extending in the same direction as said stud and being disposed in the same vertical plane as said stud, said lug being adapted to abut against any of the lobes of said cam member so as to adjustingly indicate the operative position between said cam member and said base arm.

2. In an ignition distributor the combination according to claim 1 wherein said lug is provided in a predetermined length so as to adjust the depressable distance of said stud thereby determining the width of a gap established between said fixed contact element and said movable contact element when said cam member depresses said stud.

3. The combination according to claim 2, wherein said lug is made of soft metallic material so as to prevent frictional scoring of said cam member.

4. The combination according to claim 1 wherein said unit is adapted to be entirely detachable from said wall and from said housing.

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