To all whom it may concern:

Be it known that I, PAUL E. DEMMER, a citizen of the United States, residing at San Jose, county of Santa Clara, State of California, have invented certain new and useful Improvements in Breaker Mechanism for Distributors; and I do declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, and to the characters of reference marked thereon, which form a part of this application.

This invention relates to improvements in the breaker mechanisms of timers and distributors, and particularly represents an improvement over the breaker mechanism shown in my Patent No. 1,501,442, dated July 15th, 1924.

The principal object of the present invention is to provide a breaker mechanism capable of being able to follow up and align itself with the cam shaft regardless of any eccentricity of the casing, as in the previous type, but so constructed that the breaker points will always maintain the same alignment relative to each other. This I found from experiments was not the case with the previous form of mechanism, in which the construction of the breaker arms permitted and caused an undesired weaving between the contact points, preventing them from squarely engaging with each other, as is necessary for efficient ignition. This defect I have eliminated with my present construction.

A further object of the invention is to produce a simple and inexpensive device and yet one which will be exceedingly effective for the purposes for which it is designed.

These objects I accomplish by means of such structure and relative arrangement of parts as will fully appear by a perusal of the following specification and claims.

In the drawings similar characters of reference indicate corresponding parts in the several views:

Fig. 1 is a front view of a distributor or timer showing my improved breaker mechanism, with closed points and with the cam-shaft concentric relative to the timer casing.

Fig. 2 is a cross section on the line 2-2 of Fig. 1, the cam-shaft being removed.

Fig. 3 is a view similar to Fig. 1, but with the contact points separated and the cam-shaft in an eccentric position.

Referring now more particularly to the characters of reference on the drawings, the numeral 1 denotes the timer casing, of circular form, and of a size and general design to particularly adapt it for use on a Ford engine, the transverse wall 2 of the casing having a central orifice 4 concentric with the casing, and of sufficient size to receive the cam-shaft 3 therethrough and also allow for all possible eccentricity of location of said shaft relative to the casing.

Mounted on and projecting outwardly from the wall 2 adjacent the outer edge thereof and parallel to the shaft 3 is a rigid pin 4 forming the pivotal bearing of the ears 5 of a rigid yoke 6, substantially symmetrical on both sides of the pin and ears. The outer ends 7 of the yoke arms are parallel to each other and are spaced apart a distance substantially equal to the diameter of the orifice 4.

Rigidly fixed on one end 7 is a flat spring 8, extending past the orifice 4. The outer end of this spring carries a contact point 9. Rigidly fixed on the other end member 10 but insulated therefrom as shown at 10 is a rigid arm 11, parallel to the spring 8 until past the plane of the orifice 4, and then bending toward the outer end of the spring 8 as shown at 12, and terminating in a short portion 13 parallel to but spaced from said spring.

An adjustable contact point 14 is mounted on said portion 13 in alignment with the point 9, being normally engaged therewith owing to the spring 8 exerting its pressure in that direction.

The spring 8 and arm 11 are adjacent and parallel to the wall 2, with their greatest width at right angles thereto.

Fixed on the inner faces of the members 8 and 11, in diametral alignment with the orifice 4, are lugs 15 of fiber or similar hard insulation material, said lugs being arranged to be simultaneously engaged, to separate the points 9 and 14, by a cam 16 of ordinary character mounted on the shaft 3.

Between the periods of such engagement of the lugs with the cam however, the lugs are entirely clear of the cam, so as to allow the spring 8 to exert its influence in an unrestricted manner to hold the points 9 and 14 engaged.
It will thus be evident that the breaker-arm unit being pivotally mounted on the casing, it can readily accommodate itself to any off-center position the cam may have relative to the casing, so that the contacts will always be separated the same distance regardless of the cam position.

It will also be seen that by reason of the rigid connection between the rigid arm 11 and the spring 8, these two will have at all times the same relation to each other as though the pivotal connection were omitted, and the contact points will make and break squarely and will also be held in definite alignment with each other at all times.

The breaker arms are of course connected or interposed in the circuit of the distributor and ignition system.

In the present showing, the spring 8 is connected through the yoke to the casing through the pin 4, the casing being itself in the circuit as usual.

The arm 11 is connected by a flexible lead 17 to a terminal piece 18 mounted on but insulated from the casing, said terminal piece being connected to a condenser 19 and to a collecting ring 20 in the casing on the inner face of the wall 2 and insulated therefrom.

It is evident however that my breaker construction is not limited in its application to any specific form of timer nor to any specific circuit-arrangement, such features forming no part of my invention.

From the foregoing description it will be readily seen that I have produced such a device as substantially fulfills the objects of the invention as set forth herein.

While this specification sets forth in detail the present and preferred construction of the device, still in practice such deviations from such detail may be resorted to as do not form a departure from the spirit of the invention, as defined by the appended claims.

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

1. A breaker mechanism for distributors, comprising a spring arm and a rigid arm insulated from each other and having normally engaged contact points at their outer ends, said arms being adapted to be pivoted in common on the casing of the distributor, the arms being spaced apart a distance sufficient to enable a separating cam being received therebetween.

2. A breaker mechanism for distributors, comprising a spring arm and a rigid arm insulated from each other and having normally engaged contact points at their outer ends, and a rigid yoke on which said arms are rigidly fixed adapted to be pivoted on the casing of the distributor, the arms being spaced apart a distance sufficient to enable a separating cam being received therebetween.

3. A breaker mechanism for distributors comprising a rigid yoke adapted to be pivoted on the casing of the distributor, a spaced spring and rigid arms fixed onto opposite ends of the yoke in insulated relation to each other, said arms having normally engaged contact points at their outer ends and being arranged to receive a cam therebetween to spread them apart.

In testimony whereof I affix my signature.

PAUL E. DEMMER.