

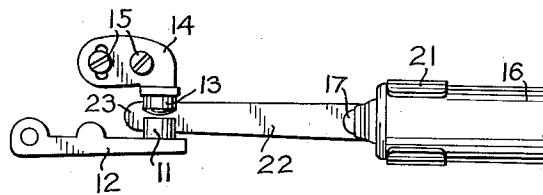
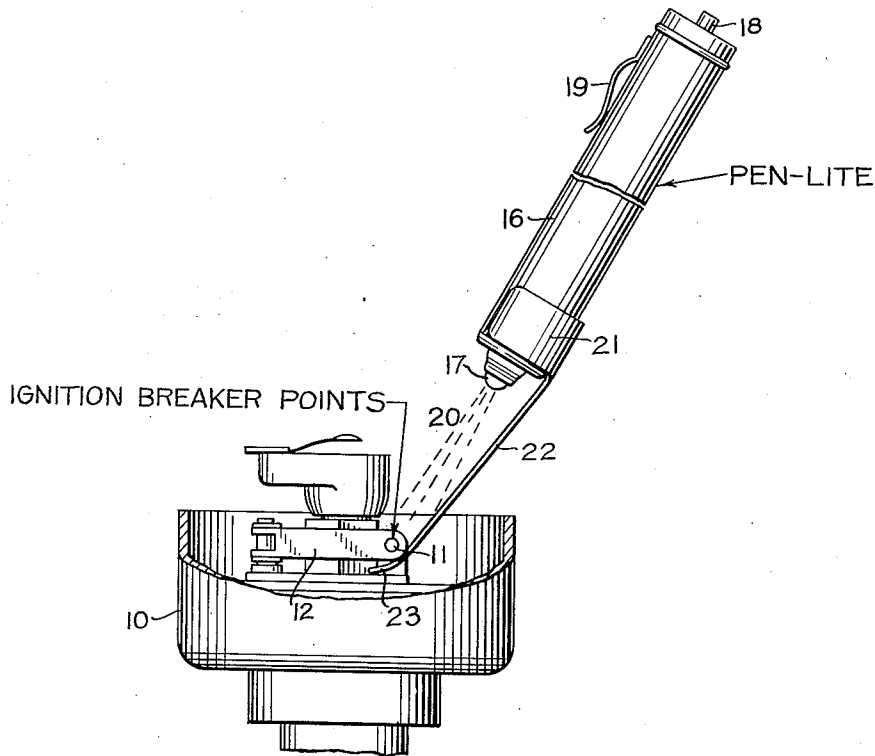
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IGNITION POINT CHECKING DEVICE

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IGNITION POINT CHECKING DEVICE

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1 Claim. (Cl. 240—2.18)

This invention relates to improvements in special tools and has reference more particularly to a tool or device for use in checking breaker points on automobiles for correct alignment.

Breaker points on cars comprise a stationary and movable contact element, the movements of the latter being controlled by means of a cam mechanism. The contact side of the stationary breaker point is usually spherical, while the co-operating contact surface of the movable contact is flat. In order to give the best operation, the contact point should be so adjusted that the flat surface is tangent to the spherical surface at its center point.

Owing to the fact that these breaker points are located in such a place that it is difficult to properly illuminate them, they are frequently left in improperly adjusted positions with the result that they do not wear or function properly.

It is the object of this invention to produce a tool or device comprising a small incandescent lamp and an elongated reflector element so interconnected and related to each other that when the lamp is lighted, it will throw a conical beam of light forwardly in such a direction that a portion of it will strike and illuminate the adjacent surface of the elongated reflector element. The reflector element can be positioned at the side of the breaker points opposite from that from which they are viewed and the illuminated reflector element will form a luminous background which makes the contour of the breaker points clearly visible and in this way the mechanic will be in position to make the necessary adjustments to obtain the most desirable relationship of the breaker points.

Having thus generally outlined the objects of the invention and the general construction of the device to which this invention relates, the invention will now be described with greater detail and for this purpose reference will be had to the accompanying drawing in which the invention and the manner in which it is employed have been illustrated, and in which:

Figure 1 is a view partly in elevation and partly in section, showing the invention in use for inspecting the position of the breaker points; and

Figure 2 is a view looking downwardly onto the breaker points and shows the illuminated element in position below the breaker points, the latter being shown in proper adjusted relation.

In the drawing reference numeral 10 designates the distributor housing within which the breaker points are positioned. The movable

breaker point has been designated by reference numeral 11 and the arm to which it is attached has been designated by reference numeral 12. Since the distributor and the construction of the breaker points are well known and form no part of this invention, their construction will not be described in further detail.

In Figure 2 the breaker points have been shown in top plan view and more or less diagrammatically. The stationary breaker point has been designated by reference numeral 13 and this is attached to an adjustable bracket 14 that is held in place by screws 15. The contact end of the stationary breaker point 13 is spherical and is positioned to cooperate with the flat surface of the movable contact 11. For the best operation, the surface of contact 11 should be tangent to the center of the spherical contact surface of the stationary contact as above mentioned.

In order to make the contact points clearly visible to the mechanic so as to facilitate the adjustment, I have provided a special tool which comprises a flashlight of the pencil type having a battery housing 16 which is provided at one end with a lamp 17 and at the other with a switch 18. A clip 19 is generally provided for the purpose of securing the tool to the mechanic's pocket. Flashlights of the type here illustrated are in common use and when the lamp 17 is lighted, a narrow conical beam of light 20 is projected from the lamp. In order to provide a luminous background positioned beneath the breaker points, I have provided the flashlight with a reflector element which will now be described.

The reflector element consists of a circular clip 21 of somewhat less than 360 degrees extent and of such size that it will fit the outer surface of the battery housing 16. These battery housings are nearly always circular, in which case the clip 21 is also circular, but if the battery housing has some other transverse cross section the clip should be correspondingly shaped. Secured to the clip and extending from one edge thereof is a narrow elongated flexible resilient reflector element 22 of approximately the length shown on the drawing. This reflector element is inclined towards the center axis of the clip and terminates in an upwardly curved end portion 23. In the preferred embodiment, the elongated member 22 is made from white Celluloid, but it may be made from any other suitable material, such as metal or any other synthetic material which is flexible and resilient, like Celluloid. The upper surface of the refractory ele-

ment should, however, be of a light color and the best results are obtained when the surface is white. It will be readily seen from Figures 1 and 2, that the conical beam of light emerging from the lamp strikes the adjacent surface of the reflector element at an angle of incidence decreasing towards the tip of the curved end portion 23. The result of this construction is that whenever the lamp is lighted, the adjacent surface of the reflector element will be illuminated and when it is positioned beneath the breaker points in the manner shown in Figures 1 and 2, the latter will be shown in silhouette against the white luminous surface of the reflector element. Due to the curved end portion 23, a luminous background can be provided in any space large enough to receive the tip of the reflector element.

Since the reflector element is narrow, flexible and resilient, it can be inserted into narrow openings, and bent when in use so as to adjust the angle of incidence and its relation to the object to be outlined.

Particular attention is called to the fact that the reflector element is preferably white and that the contacts are shown in silhouette against the illuminated surface. The object is not to illuminate the contacts so that they will be made visible by light reflected from the white Celluloid surface but rather to provide a luminous mat background as shown in Figure 6. A polished metal reflector or a glass reflector or mirror would not serve the purpose as such a surface would not provide the luminous background that is essential to a successful operation.

From the above description, taken in connection with the drawing, it will be apparent that by means of this simple device, the relationship of the breaker points can be readily determined

as they will stand out sharply against the white background thus provided. With the breaker points thus clearly outlined, the mechanic will have no difficulty in effecting the most desirable adjustment and as a result of this the ignition will always function at its maximum efficiency and the contact points will wear in such a manner that their life and effectiveness will be greatly increased in comparison with the improper adjustments that are nearly always present, due to the difficulty in viewing the parts during adjustment.

Although the invention has been described in connection with the adjustment of breaker points, it is evident that it is not limited to this use and that it can be employed in any place where an illuminated background is desirable. The tool can, for example, be used to check the contacts of the rubbing block of the distributor arm against the cam in the same manner in which the breaker points are checked and in addition to the uses pointed out, others may be found.

Having described the invention what is claimed as new is:

An article of manufacture comprising an elongated, substantially cylindrical clip, for slidably embracing an elongated flash light housing, an elongated reflector element of readily bendable, resilient material, projecting from one end of the clip, the reflector element being outwardly tapered and having a maximum width less than the diameter of the clip, the surface facing the axis of the clip having a light colored mat finish, the reflector element being inclined towards and intersecting the axis of the clip, the extreme end being inclined at a greater angle than the remainder of the reflecting surface.

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