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MOTOR TIMING AND CORRECTING DEVICE

Filed Jan. 26, 1931

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Fig. 1.

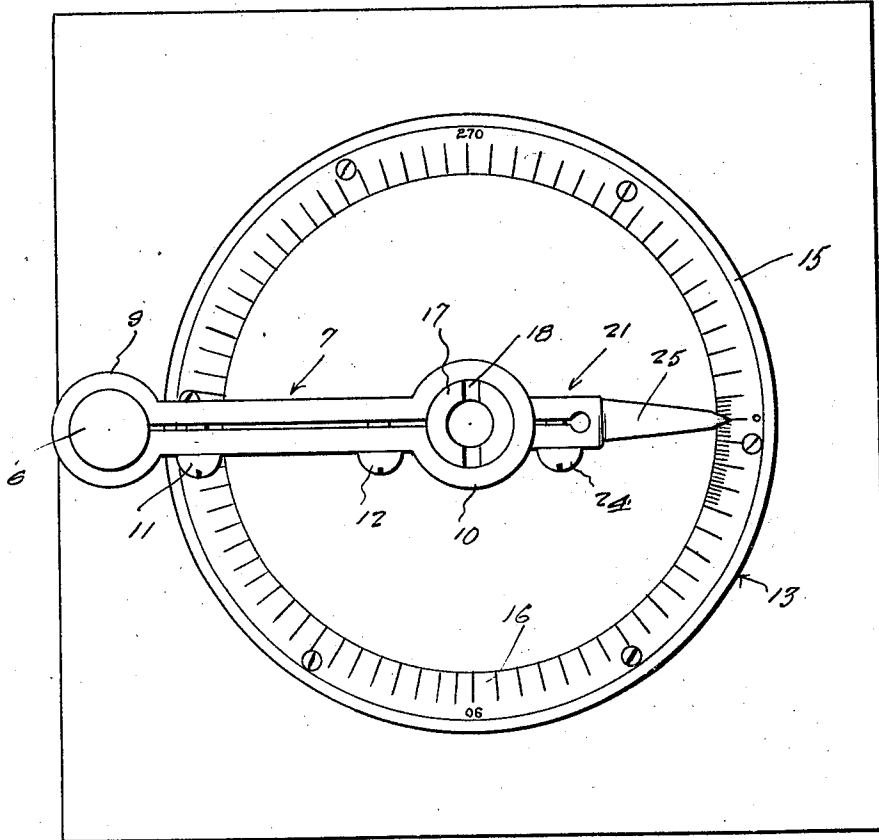
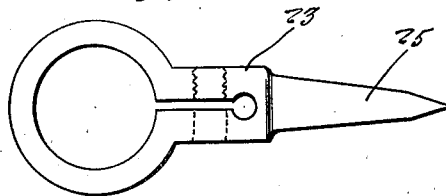


Fig. 4.



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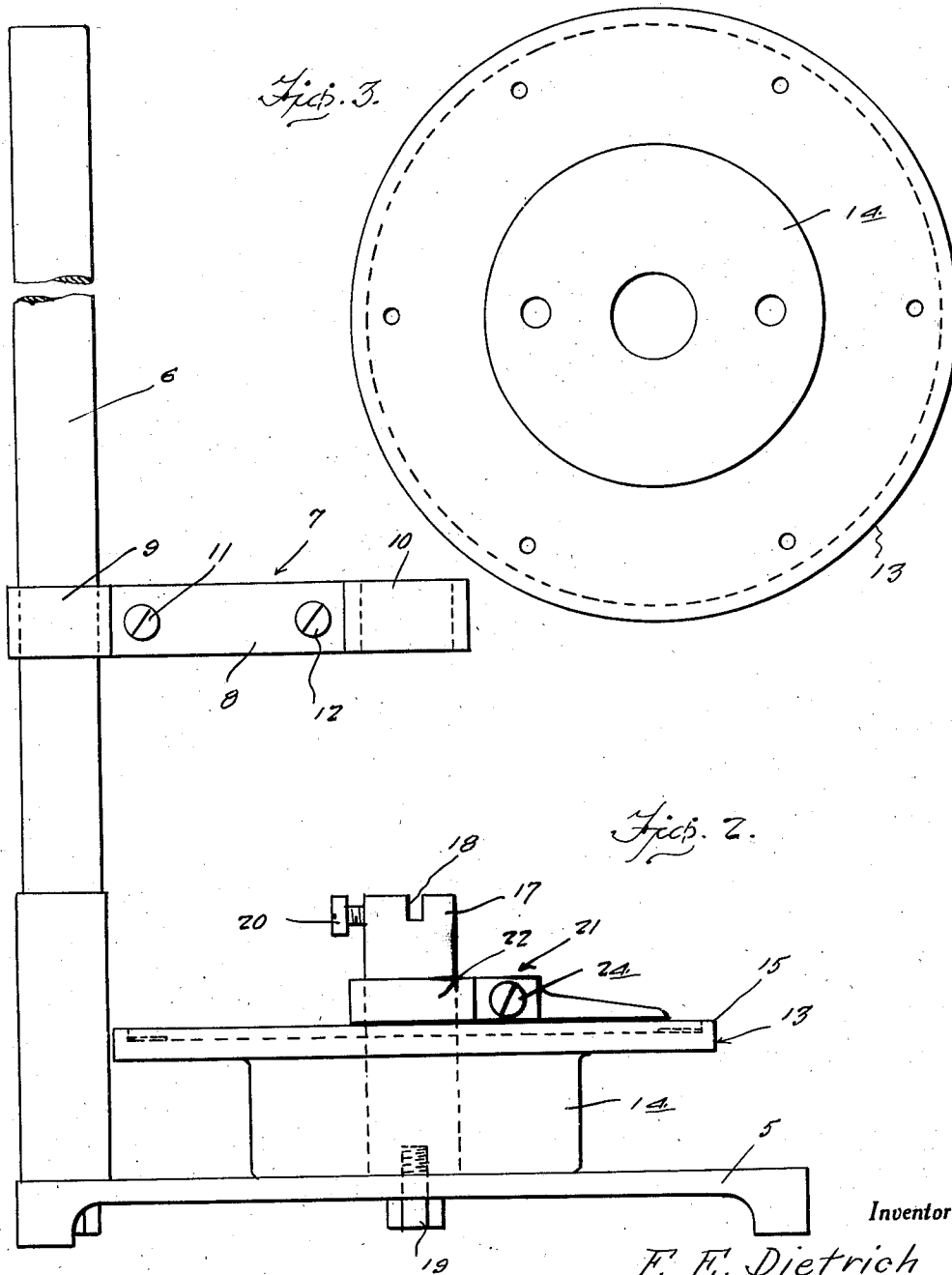
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UNITED STATES PATENT OFFICE

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MOTOR TIMING AND CORRECTING DEVICE

Application filed January 26, 1931. Serial No. 511,363.

This invention relates to an automotive appliance in the nature of a gauge and correcting device for use in association with an automobile timer, and the purpose of the invention is to provide a simple, economical and expedient device which may be employed by either skilled or unskilled hands in testing and adjusting the mechanism of a conventional type of internal combustion engine timer.

It is a matter of common knowledge to those skilled in the art to which the invention relates, that the ordinary timer can be removed from its support without difficulty, and the present invention covers a structure which permits the existing parts of the timer to be mounted thereon in such a way as to permit the contacts and rotary brushes or shoes to be synchronized in absolutely correct circuit closing relationship, according to the number of cylinders embodied in the motor.

Briefly stated, the inventive novelty is predicated upon a device characterized by a base, and standard having an adjustable clamping device thereon to hold the relatively stationary parts of the timer casing, there being a circular scale mounted on said base and a rotary indicator and means for operatively connecting the indicator with the rotary mechanism of the timer in such a way as to permit an accurate test and adjustment of said mechanism to be made, thus insuring proper timing of the ignition system with respect to the pistons when in firing position. The particular structural arrangement for accomplishing this result will become more readily apparent from the following description and drawings.

In the drawings:

Figure 1 is a top plan view of a device constructed in accordance with the present invention.

Figure 2 is a side elevational view of the same.

Figure 3 is a bottom plan view of the scale mounting.

Figure 4 is a plan view of the indicator or pointer.

The general assembly may well be observed in Figure 2. Here the reference character

5 designates the base. This is of appropriate configuration and construction. Rising from one side of this is a perpendicular standard 6 in the nature of a cylindrical post. On this post is an adjustable retaining bracket 7. This bracket is formed from strap metal having its central web portions 8 disposed in spaced parallelism and having its end portion fashioned to provide retaining collars 9 and 10.

The numerals 11 and 12 designate the adjusting and retaining screws. The collar 9 adjustably embraces the standard 6. The collar 10 adjustably embraces an existing part of the relatively stationary section of the timer casing (not shown). This is for holding the device set while making the test.

The numeral 13 designates the indicator mounting. This comprises an annulus 14 having a disc-like plate or head 15 provided with the marginal circular groove to accommodate the graduated metal band 16 constituting the scale. This scale is marked to provide the graduations from zero to three hundred and sixty, this being a perfect circle.

Extending down through a central hole in the plate and through the central bore of the annulus 14 is a tubular post 17 having diametrically opposite kerfs or notches 18 at its top. This post is maintained in place by a retaining bolt 19 carried by the base 5. The numeral 20 designates a set screw to aid in holding the relatively movable part of the timer attached to the post while making the test.

The indicator is generally denoted by the numeral 21 and this comprises a ring 22 embracing the post and having a split intermediate portion 23 to accommodate the binding screw 24 to hold the indicator in place. The numeral 25 designates the pointer which is co-operable with the graduations on the scale.

The gist of the idea, it is understood, is in the provision of a practical, simple and economical device susceptible of usage by both skilled and unskilled persons and constructed to facilitate synchronization of the firing points of each cylinder when the piston

is exactly at the top center and so that each cylinder fires exactly at the proper timing of the fire, the basis of the device being predicated on the usage of a circular scale of 360 degrees.

5 The dial or scale is divided in the present showing in four distinguishable sectors; ninety, one hundred and eighty, two hundred and seventy, and three hundred and sixty (or zero).

10 After the timer (not shown) is attached to the bracket 7 through the medium of the ring 10, the shaft of the timer is placed in the position of "no fire". The indicator 6 is then placed at zero on the dial by appropriate adjustment and is then fastened to the post 17 by the set screw 24. If desired, an indicator light is grounded on the timer and the device itself may be employed in conjunction with the device.

20 The device when used to correct the timer on a four cylinder motor is used as follows: The timer is placed on the testing device with the indicator pointing at zero. With the points of the timer in contact, the first cylinder should fire when the indicator reaches the degree ninety; the second cylinder should fire when the indicator reaches one hundred and eighty; the third cylinder when the indicator reaches two hundred and seventy, and the fourth cylinder should fire when the indicator arrives back at the zero or three hundred and sixty degrees.

30 The least variation in the firing of any cylinder can be detected and corrected with this device, whether it be a four cylinder, six cylinder, eight cylinder, or twelve cylinder motor.

35 It is thought that the description taken in connection with the drawings will enable a clear understanding of the invention to be had. Therefore, a more lengthy description is thought unnecessary.

40 While the preferred embodiment of the invention has been shown and described, it is to be understood that minor changes coming within the field of invention claimed may be resorted to if desired.

I claim:

50 1. In a timer testing and correcting device of the class described, a relatively stationary dial graduated to embody 360 degrees, a rotary pointer cooperable with the graduations, means for connecting the relatively rotatable parts of the mechanism of the timer with said pointer, and means for maintaining the timer shell and its contact points relatively stationary with respect to said pointer.

60 2. In a timer testing and correcting device of the class described, a fixed graduated circular dial, a stationary standard associated with said dial, a retaining clamp on said standard designed for connection with the relatively stationary shell of the timer, a rotatable indicator associated with said dial,

and means connected with said indicator to attach the relatively rotatable portion of the timer with said indicator.

3. A motor timer testing and synchronizing device of the class described comprising a base, a perpendicular standard rising from said base, an adjustable retaining bracket on said standard for holding the timer shell in place, a circular graduated dial fixedly mounted on said base, a rotary pointer operable with said dial, and means associated with said pointer for connecting the relatively rotatable part of the timer with said pointer for the purposes specified.

4. In a timer testing and correcting device of the class described, a base, an eccentric perpendicular standard rising from said base, a vertically adjustable timer retaining bracket on said standard, a mounting on said base including a disc-like plate having a circular graduated dial band attached thereto, a rotary post associated with said mounting and base, means on said post for attachment to the relatively rotatable part of the timer, and an indicating pointer on said post co-operable with the graduations on said dial band.

In testimony whereof I affix my signature.
FRED E. DIETRICH.

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