

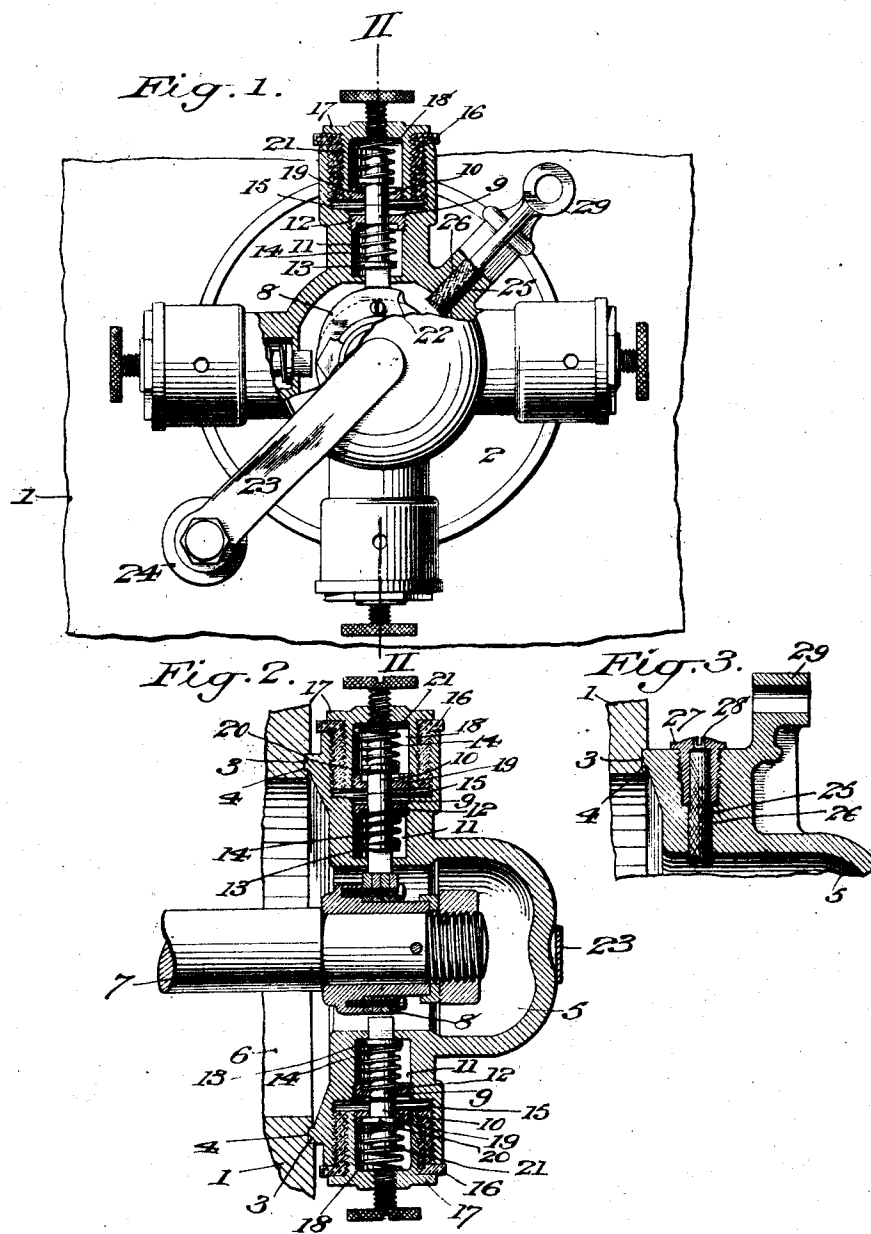
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G. L. HERZ

SPARK TIMER

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UNITED STATES PATENT OFFICE.

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SPARK TIMER.

Application filed June 22, 1921. Serial No. 479,532.

To all whom it may concern:

Be it known that I, GUSTAVE L. HERZ, a citizen of the United States, and resident of the borough of Manhattan, city and State of New York, have invented a new and useful Improvement in Spark Timers, of which the following is a specification.

The object of my invention is to provide certain improvements in a spark timer whereby its efficiency will be materially increased as will also its durability.

A further object is to provide a timer in which the parts may be very readily assembled, the rotatively adjustable timer housing being mounted directly on the engine casing and the rotor being mounted entirely independently of the housing.

A practical embodiment of my invention is represented in the accompanying drawings, in which,

Fig. 1 represents a front view of the timer applied to the engine casing, a portion of the rotatively adjustable housing being broken away to more clearly illustrate the parts within the same.

Fig. 2 represents a section taken in the plane of the line II—II of Fig. 1.

Fig. 3 represents a detail section through the oiling device.

The engine casing is denoted by 1. The rotatively adjustable timer housing is denoted by 2 and it is shown as provided with a circular flange 3 which is seated in a circular groove 4 on the face of the engine casing. The housing has a centrally arranged chamber 5, the outer end of which is closed and the inner end of which opens toward a hole 6 through the face of the engine casing.

The rotary shaft 7 which is mounted entirely independently of the timer housing 2 projects into the central chamber 5 of the housing and is there provided with a rotary cam 8 for controlling the operation of the contact pieces to be immediately described.

I provide any number of sets of normally separated aligned contact pieces. In the present instance I have shown four sets, each set comprising an inner contact piece 9 and an outer contact piece 10. The contact pieces of each set are disposed radially

with respect to the axis of the rotary cam 8 and in the plane of the cam. The timer housing is provided with an inner recess 11, provided with a screw plug 12 for closing the outer end of said recess. The inner contact piece 9 is slidably mounted in the plug 12 and the bottom wall of the recess 11. This inner contact piece is provided within the recess 11 with a shoulder 13 between which shoulder and the plug 12 I locate a spring 14, tending to hold the contact piece 9 at the limit of its inward movement, bringing the inner end of the contact piece into the path of the raised portion of the cam 8 whereby the engagement of the said raised portion of the cam with the inner contact piece 9 will move the contact piece outwardly against the tension of its spring 14.

The timer housing 2 is further provided with an enlarged recess 15 into which is screwed a sleeve 16 of insulating material. A hollow cap 17 is screwed into the sleeve 16, the mouth of the recess 18 in said hollow cap being closed by a screw plug 19.

The outer contact piece 10 is slidably mounted in the plug 19 and the said contact piece is provided with a shoulder 20 within the recess 18 and between which shoulder and the bottom of the recess I locate a spring 21 which yieldingly holds the contact piece 10 at the limit of its inward movement.

The relative positions of the shoulders 13 and 20 on the inner and outer contact pieces 9 and 10 are such that when the contact pieces are held at the limits of their movement, they will be normally separated.

In the rotary movement of the cam 8, the raised portion of the cam by its engagement with the inner contact piece 9, to move it outwardly, will move the contact piece 9 into engagement with the contact piece 10 and then move both contact pieces slightly so as to eliminate entirely all "hammering". The raised portion of the cam 8 is provided with an abrupt shoulder 22 so as to permit a quick separation of the contact pieces after the cam leaves the inner contact piece.

The timer housing is removably positioned on the engine casing by providing

a spring arm 23, the outer end of which presses against the front of the timer housing and the inner end of which is pivoted on a post 24 projecting from the engine casing.

Means are provided for oiling the face of the cam, which means is herein shown as comprising a wick 25 which is located in a radial hole 26 extending through the casing, the inner end of the wick projecting into the timer housing chamber 5 in position to wipe the raised surface of the rotary cam 8. The outer end of this wick is secured within a screw cap 27, removably secured in the outer end of the bore 26, which cap has an oil hole 28 there-through so that oil may be supplied to the wick as desired.

This wick 25 serves not only to oil the raised surface of the rotary cam to keep it free from rust, but also serves to wipe any foreign matter therefrom so that a perfect contact is established between this raised surface of the cam and the coacting end of the inner contact piece 9. The timer housing may be provided with the usual arm 29 for the attachment of the timer operating rod, not shown herein.

It is evident that various changes may be made in the construction, form and arrangement of the several parts without departing from the spirit and scope of my invention; hence I do not wish to limit my-

self to the particular embodiment herein shown and described, but

What I claim is:—

1. In a spark timer, a rotary cam, a rotatively adjustable housing, normally separated reciprocating radially alined outer and inner contact pieces carried thereby, and means for yieldingly holding both of the contact pieces at the limits of their inward movements with the inner contact piece spaced from the lower surface of the cam, said cam having a raised surface arranged to engage the inner contact piece and move it outwardly into contact with the outer contact piece.

2. In a spark timer, a rotary cam, a rotatively adjustable housing, reciprocating radially alined outer and inner contact pieces carried thereby, a spring for yieldingly holding the outer contact piece at the limit of its inward movement, and a spring for yieldingly holding the inner contact piece at the limit of its inward movement spaced both from the outer contact piece and from the lower surface of the cam, said cam having a raised surface arranged to engage the inner contact piece and move it into contact with the outer contact piece.

In testimony, that I claim the foregoing as my invention, I have signed my name this 21st day of June, 1921.

GUSTAVE L. HERZ.