

(No Model.)

J. W. LAMBERT.
IGNITER FOR GAS ENGINES.

No. 582,532.

Patented May 11, 1897.

Fig. 1.

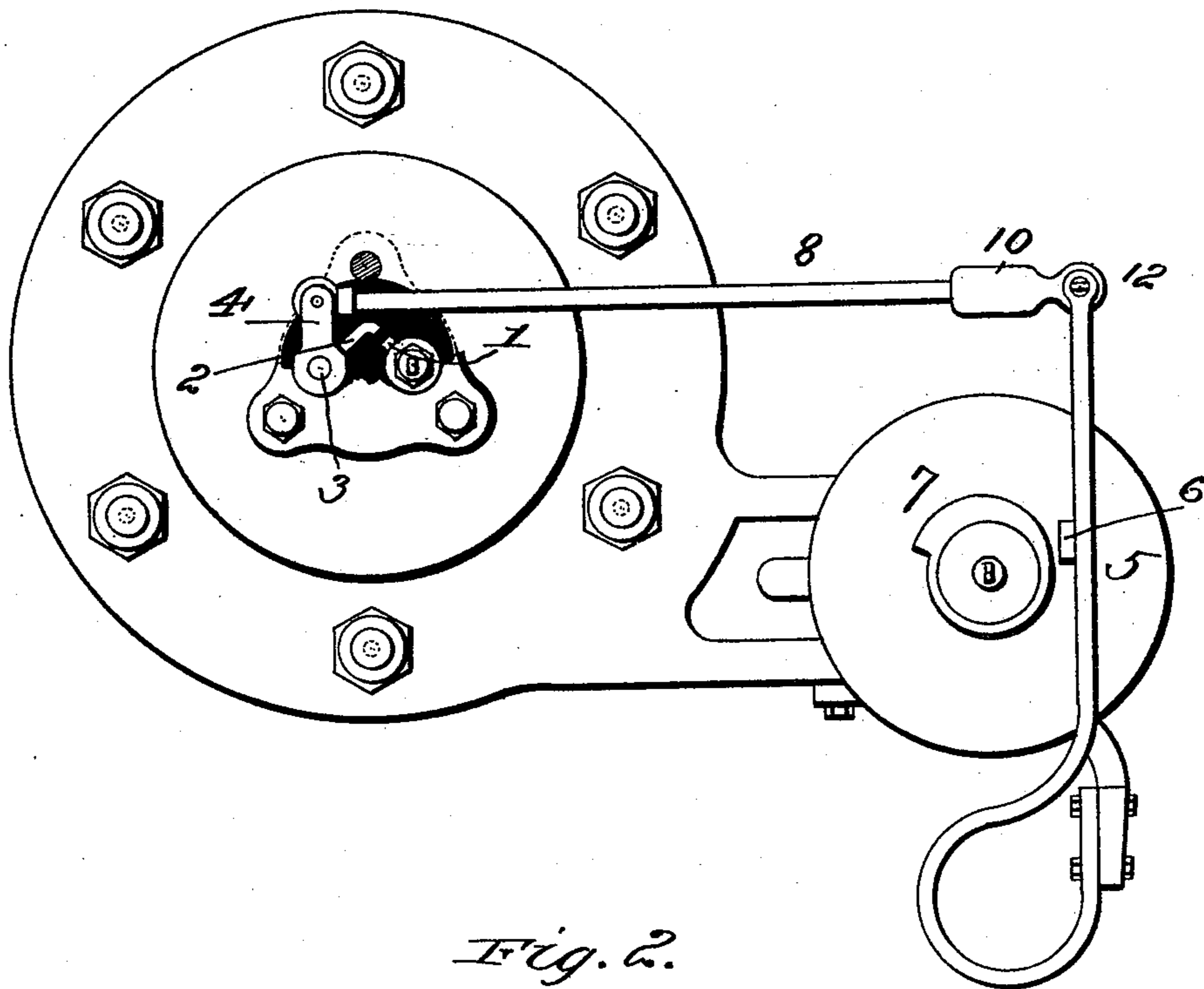
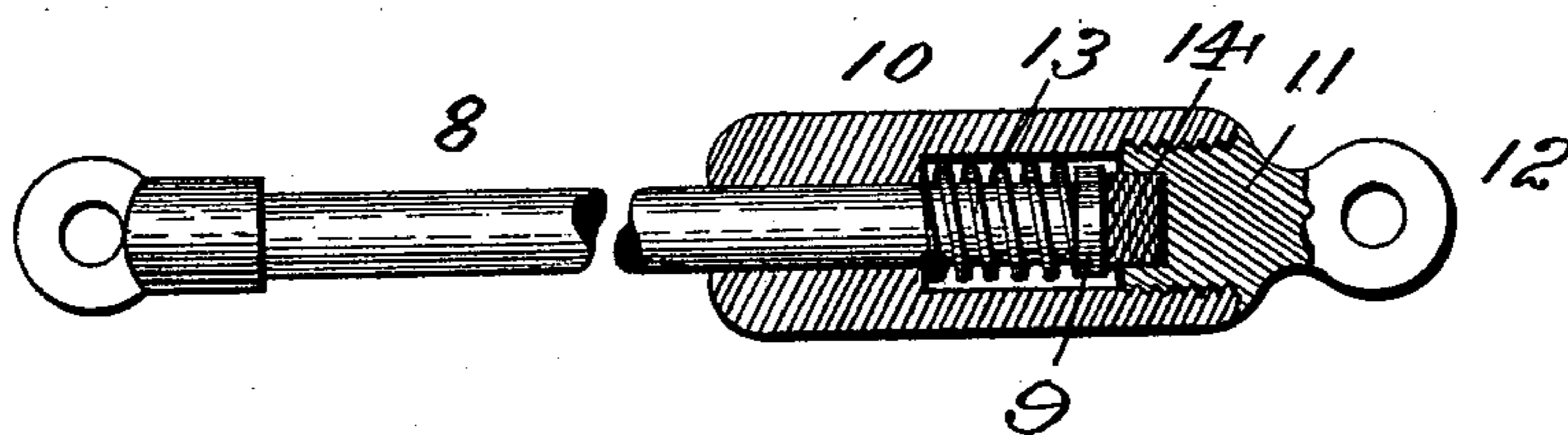


Fig. 2.



Witnesses
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IGNITER FOR GAS-ENGINES.

SPECIFICATION forming part of Letters Patent No. 582,532, dated May 11, 1897.

Application filed June 23, 1896. Serial No. 596,611. (No model.)

To all whom it may concern:

Be it known that I, JOHN W. LAMBERT, a citizen of the United States, residing at Anderson, in the county of Madison and State of Indiana, have invented certain new and useful Improvements in Igniters for Gas-Engines, of which the following is a specification, reference being had therein to the accompanying drawings.

10 This invention relates to that class of igniters in which the sparking-contacts are normally held apart and are drawn together and then quickly separated to produce the spark, the quick separation of the contacts producing the spark. One form is shown in a patent to myself, No. 536,287, dated March 26, 15 1895, in which the electrodes are extended into the explosion-chamber, the movable one being carried by a rock-shaft or rod adapted to be rocked by means of an endwise-movable rod, this rod being normally pressed endwise to keep the contacts apart by means of a leaf-spring, and this spring being pressed against its tension by means of a suitable cam, the 25 cam being shouldered to release the spring quickly at the proper moment to produce the spark. The difficulty with that device has been that the frequent and forcible bringing together of the contacts not only produces 30 undesirable noise, but also hammers and injures them.

It is the object of this improvement to avoid the hammering of the contacts, at the same time holding them firmly together and releasing them quickly to produce the strong spark so desirable, as more fully hereinafter set forth.

40 In the drawings, Figure 1 is an end elevation of a part of the gas-engine provided with my improvements, and Fig. 2 a detail section showing the cushioning device carried by the connecting-rod.

Referring to the drawings by numerals, 1 designates the stationary contact-point and 45 2 the movable one, this latter being carried by a short rock-shaft 3, extending through the cap on the end of the cylinder and provided with an upwardly-extending arm 4. The upright spring 5 is mounted on a suitable part of the frame and is provided with a 50 suitable shoe 6, which is adapted to be engaged by the cam 7, the rotation of the cam

bringing its periphery against the shoe and forcing the spring outward, the spring being suddenly released when the shoulder of the 55 cam passes the shoe. A connecting-rod 8 is pivotally connected to the upper end of arm 4 at one end and at its other end to the upper end of the upright spring. This rod is virtually made in two parts or sections, one 60 part consisting of the rod proper provided with an annular head or shoulder 9 at its free end and the other part of a sleeve 10, fitting over and adapted to slide on the headed end of the other section, this tubular section having its end closed by a screw-plug 11, which is 65 provided with a ring 12 to pivotally connect it to the upright spring-arm. Inclosed within the tubular section and surrounding the end of the other section is a coiled spring 13, one 70 end of which presses against the headed end of the rod-section and the other end against a shoulder on interior of the tubular part, the expansive action of the spring tending to normally draw the sleeve in upon the rod, 75 thereby keeping the end of the rod-section pressed against the closure-plug 11. This construction therefore makes the connection 8 resiliently extensible.

In operation it will be observed that the 80 rotating cam bearing against the shoe forces the upright arm away against its tension and draws the contacts positively together and releases them when the shoulder of the cam passes the shoe, thereby producing the electric 85 spark, the electric circuit being maintained in the usual way. The expansible coil-spring inclosed within the tubular part of the connecting-rod serves to cushion the blow produced by bringing contacts quickly together, 90 as is evident, the spring being compressed each time the rod is drawn upon, and to cushion the blow of the headed end of the rod-section against the inner end of the plug 11 (which occurs every time the upright spring- 95 arm flies back after being released from the cam) a buffer 14 is set in a recess in said plug.

It is of course evident that this cushioning device may be located at any point along the connecting-rod, but I prefer to locate it as 100 shown, namely, at the point where the rod connects with the upright arm of the spring, it being most cheaply made for use at that point.

Having thus fully described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The combination, with a gas-engine, of
5 an electric igniter consisting of a movable
and a stationary contact, and devices adapted
to bring the movable contact against the sta-
tionary one, said devices consisting of an ac-
tuating-cam, a spring-arm, and a resiliently-
10 extensible rod connecting the spring-arm to
the movable contact, said rod consisting of a
tubular part and another part embraced there-
by and sliding within the tubular part, a buf-
fer carried at one end of the tubular part,
15 and a spring within the tubular part and nor-
mally tending to draw said tubular part onto
the other part and to cause the buffer to con-
tact with the end of said other part, substan-
tially as described.
- 20 2. The combination, with a gas-engine, of
an electric igniter consisting of a movable

and a stationary contact, devices adapted to
bring the movable contact against the station-
ary contact said devices consisting of an ac-
tuating-cam, a spring-arm, and a resiliently- 25
extensible rod connecting the spring-arm
to the movable contact, said rod consisting of
a tubular part 10, a rod 8 extending into said
tubular part, a head 9 being formed on its
inner end, a spring 13 surrounding rod 8 and 30
confined between said head 9 and the end of
the tubular part 10, plug 11 closing the end
of the tubular part, and a buffer carried by
said plug at its inner end, its outer end being
connected to the spring-arm, substantially 35
as and for the purpose described.

In testimony whereof I affix my signature
in presence of two witnesses.

JOHN W. LAMBERT.

Witnesses:

PET PARENT,
F. L. MARSHALL.