

No. 754,286.

PATENTED MAR. 8, 1904

F. DICKINSON.
SPARKER.

APPLICATION FILED JUNE 15, 1903.

NO MODEL.

Fig. 1.

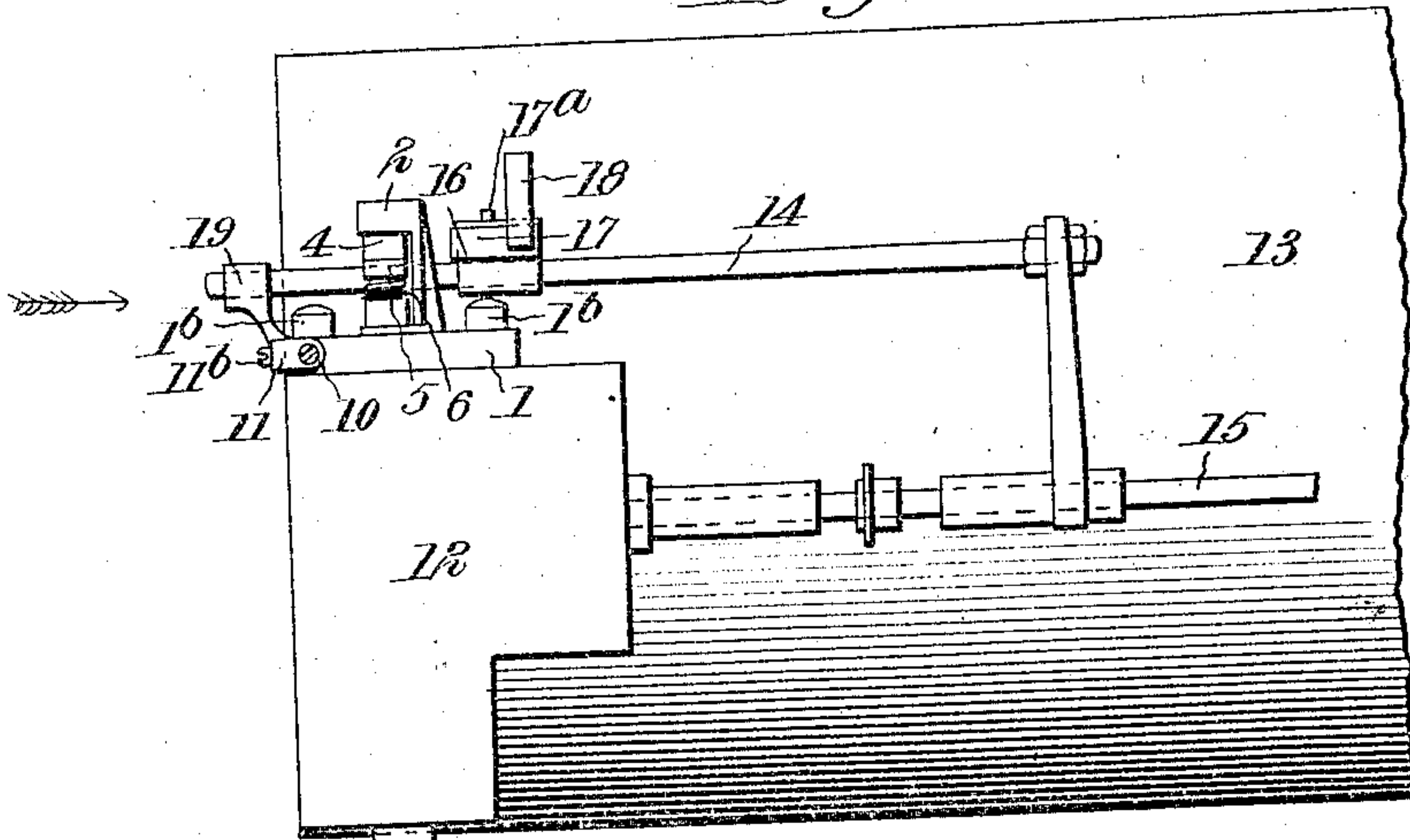


Fig. 2.

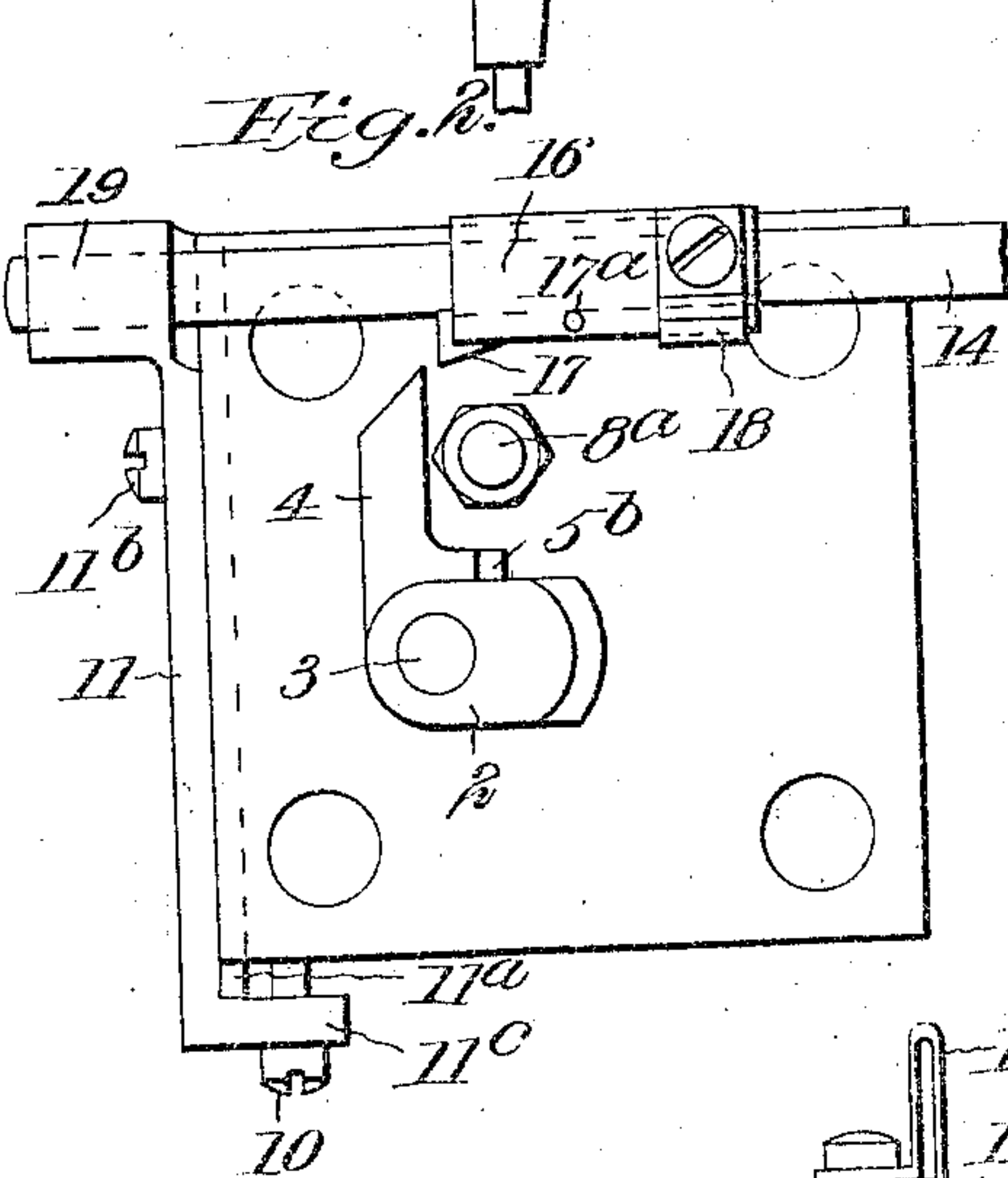


Fig. 3.

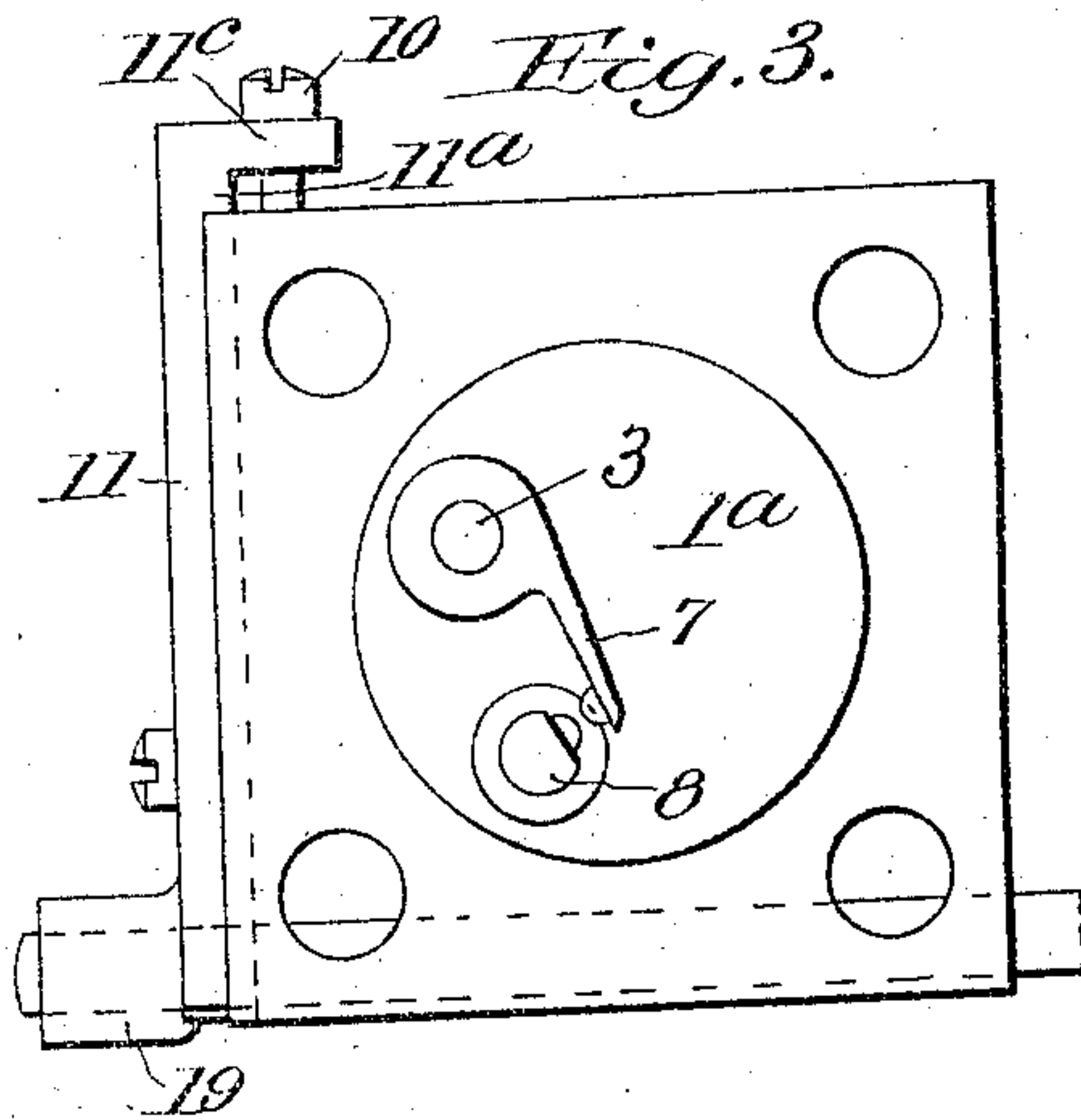
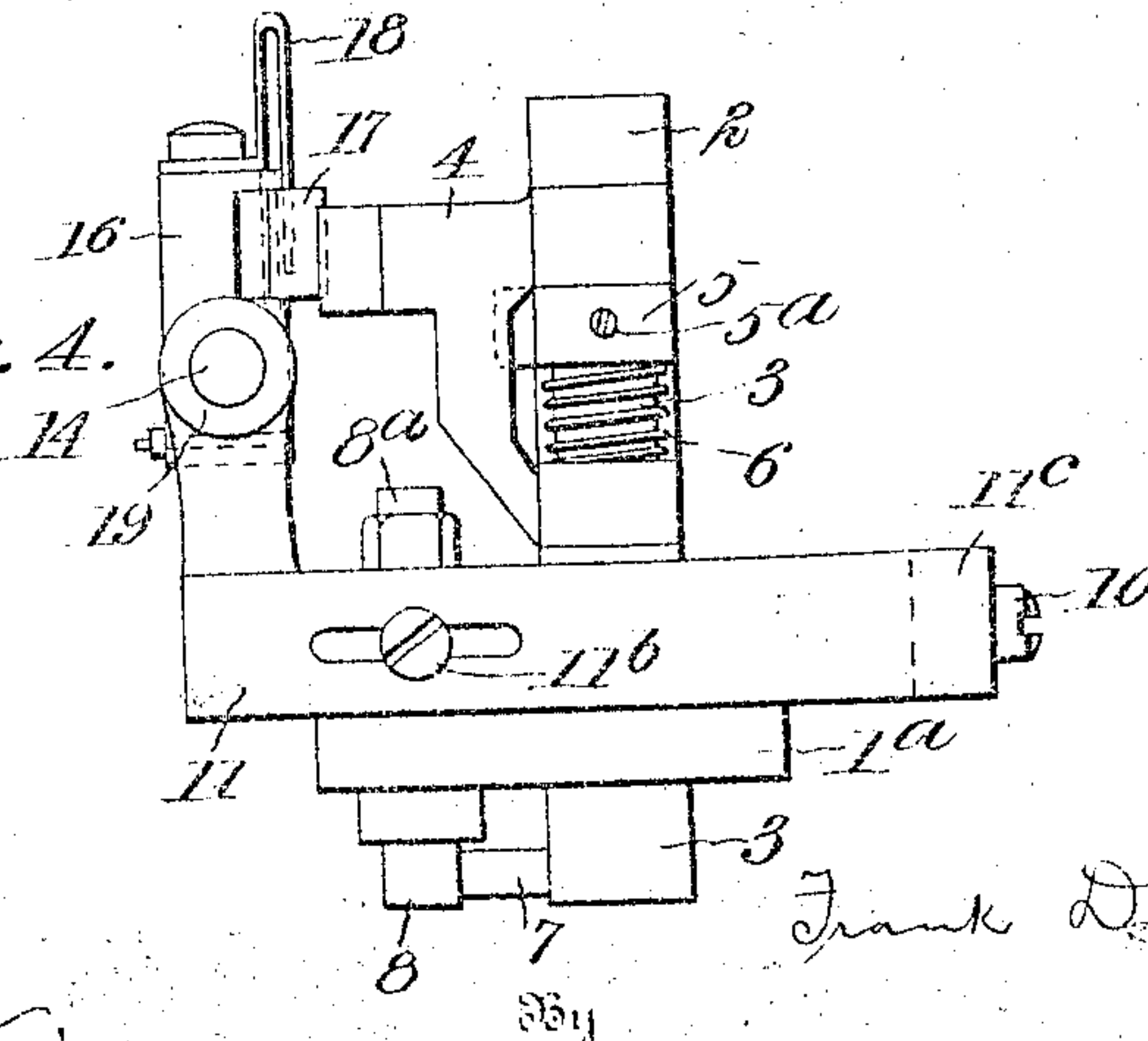


Fig. 4.



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FRANK DICKINSON, OF SPRINGPORT, MICHIGAN.

SPARKER.

SPECIFICATION forming part of Letters Patent No. 754,286, dated March 8, 1904.

Application filed June 15, 1903. Serial No. 161,535. (No model.)

To all whom it may concern:

Be it known that I, FRANK DICKINSON, a citizen of the United States, residing at Springport, in the county of Jackson and State of Michigan, have invented new and useful Improvements in Sparkers, of which the following is a specification.

This invention relates particularly to sparkers for igniting gas-engines, and has for its object to provide an improved construction whereby the time of sparking may be varied and this while the engine is in motion.

A further object is to produce a very quick separation of the electrodes and consequent fat spark.

In the accompanying drawings, Figure 1 is a side elevation of the igniter, in connection with a portion of the engine-cylinder. Fig. 2 is a top plan view of the igniter detached. Fig. 3 is an inside or bottom plan thereof, and Fig. 4 is an end elevation thereof looking in the direction of the arrow in Fig. 1.

The sparker herein described is mounted on and produces a spark in the valve casing or chamber 12, fixed to the side of the cylinder 13, and 1 indicates the base-plate having a reduced portion 1^a fitted in and through an opening in the top of the valve-casing, to which the plate is secured by screws 1^b. The rock-shaft 3, which carries the movable electrode 7, extends through this plate and finds its bearings therein and in a bracket 2, projecting from the upper side of the plate. The stationary electrode is indicated at 8, having a stem 8^a extending through and insulated from the plate.

Closely mounted upon the shaft 3 is a yoke-hammer 4, the arms of which have eyes through which the shaft 3 extends. Between the arms of the lever the anvil 5 is sleeved upon the shaft and is made fast thereto by a set-screw, (indicated at 5^a.) The anvil has a projection or head 5^b, which is adapted to be struck by the engaging hammer 4, as more fully hereinafter described. At 6 is indicated a spring coiled around the shaft and having its ends attached, respectively, to the anvil 5 and one arm of the lever 4. The spring acts to make the hammer hit the anvil and also by its upward or outward pressure against the anvil, which is fast

to the shaft, to maintain a gas-tight joint between the shaft and the plate 1^a.

The push-rod for operating the sparker is indicated at 14, and it may receive its motion from any suitable source. It is shown connected by an arm to the valve-rod 15. The rod 14 carries a head 16, having a catch 17, pivoted by a pin 17^a to the head. The engaging hammer 4 projects in the path of the catch in the reciprocation of the rod. Pressing against the rear end of the catch is a flat spring 18, which yields to permit the catch to snap back over the end of the hammer on the back motion. The free end of the push-rod 14 is carried in a guide-bearing 19, projecting from a timing-slide 11. This slide is movable sidewise with respect to the line of the push-rod and has a guide-rib 11^a, which works in a groove in the edge of the plate 1, where it is retained by a screw 11^b, which extends through a slot in the slide. The end of the slide is offset around the corner of the plate, as at 11^c, to give a bearing for the adjusting set-screw 10, the foot of which is tapped into the edge of the plate 1. By adjusting the screw the slide is moved back and forth, thereby changing the lap of the engaging hammer 4 with respect to the catch 17, and consequently the time of the release of the rock-shaft and sparking points.

In operation the thrust of the push-rod causes the catch 17 to engage the end of the hammer 4 and turns the same and with it the shaft 3 through the spring 6 and anvil 5 until the electrode 7 comes in contact with the electrode 8. Further movement of the push-rod and hammer is absorbed by the spring 6, and the hammer leaves the anvil-head 5^b. When the point of release is reached, the hammer 4 flies back and hits the head 5^b, throwing the anvil back and with it the rock-shaft. This gives a very quick separation of the electrodes and a bright fat spark, because the hammer 4 hits the anvil 5 while in motion. On the back stroke of the push-rod the catch 17 snaps over the beveled end of the hammer 4 and resumes its position for the next stroke. As above indicated, the time of firing may be varied by shifting the slide 11 to change the

lap and time of release of the catch and the hammer, and this can be done while the engine is in motion.

It is to be understood that the scope of the invention is not limited further than is indicated in the accompanying claim.

What I claim as new, and desire to secure by Letters Patent, is—

In a sparking mechanism, the combination
10 with a plate carrying the electrodes, of a push-

rod actuating the movable electrode, and an adjustable slide mounted on the plate and having a guide-bearing for the rod.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

FRANK DICKINSON.

Witnesses:

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