

No. 811,122.

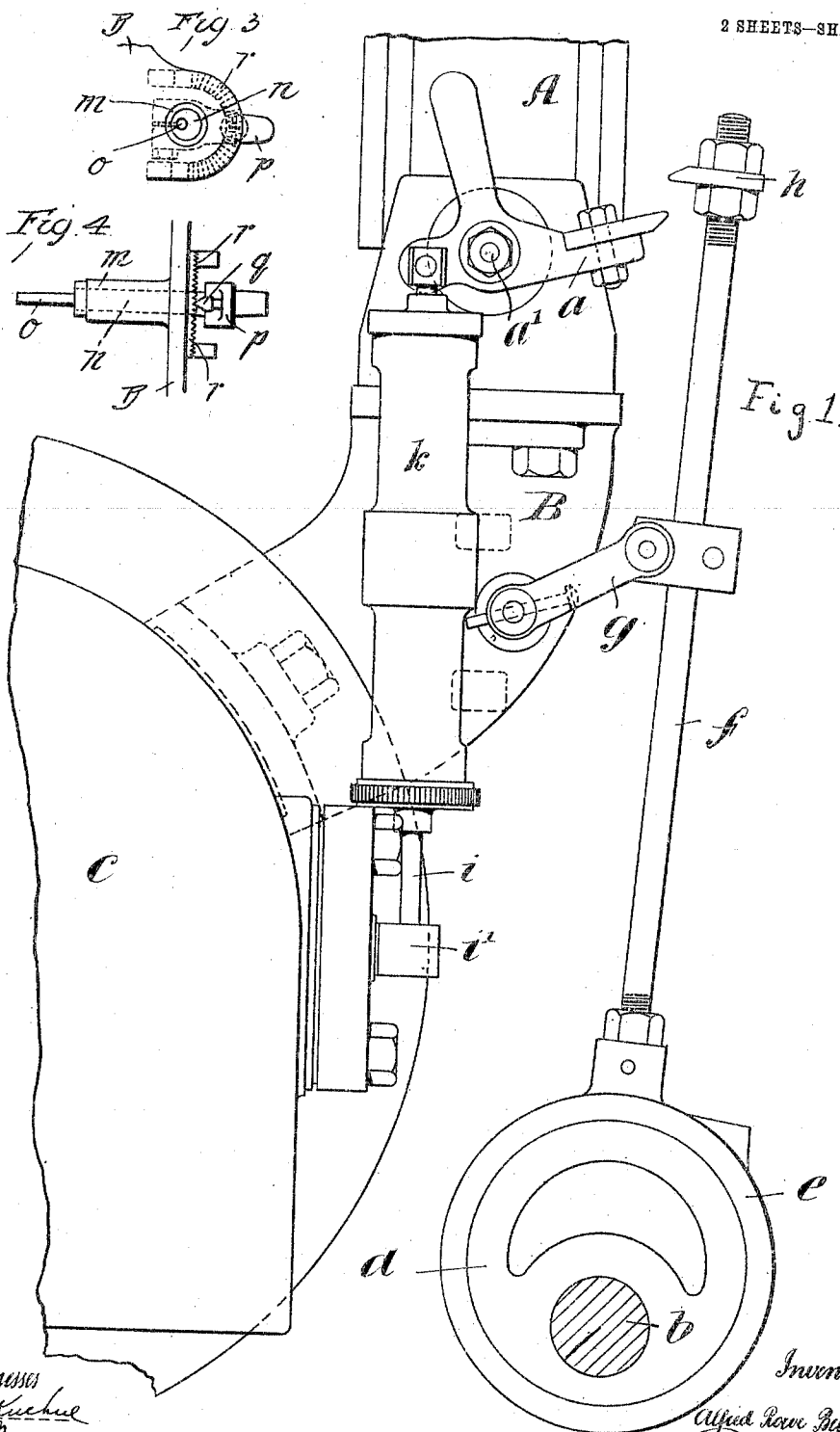
PATENTED JAN. 30, 1906.

A. R. BELLAMY.

SPARKING IGNITER FOR INTERNAL COMBUSTION ENGINES.

APPLICATION FILED SEPT. 27, 1904.

2 SHEETS—SHEET 1.



Witnesses
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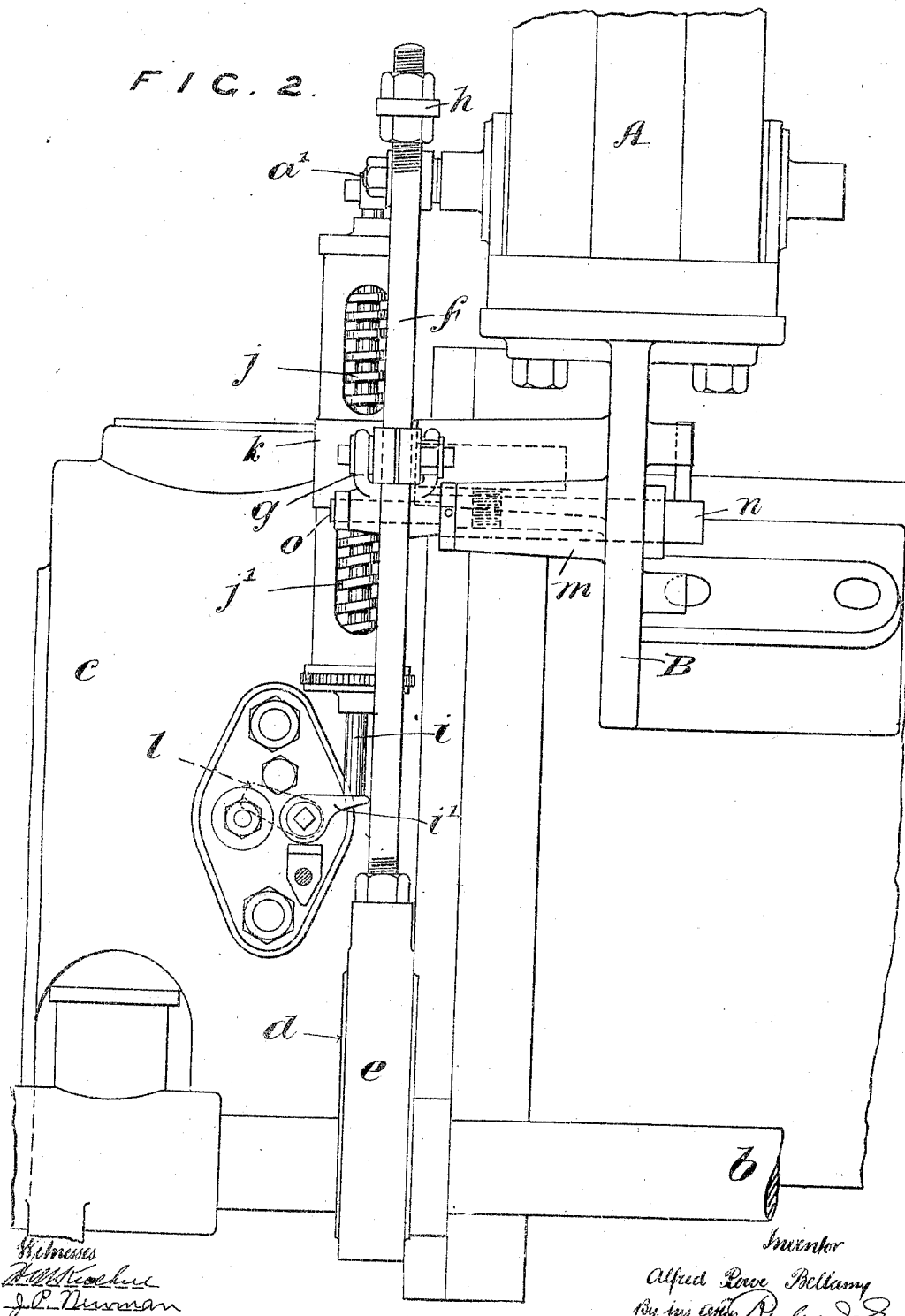
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UNITED STATES PATENT OFFICE.

ALFRED ROWE BELLAMY, OF EDGELEY, STOCKPORT, ENGLAND.

SPARKING IGNITER FOR INTERNAL-COMBUSTION ENGINES.

No. 811,122.

Specification of Letters Patent.

Patented Jan. 30, 1906.

Application filed September 27, 1904. Serial No. 226,192.

To all whom it may concern:

Be it known that I, ALFRED ROWE BELLAMY, engineer, a subject of the King of Great Britain and Ireland, residing at Fordsburg, Edgeley, Stockport, in the county of Chester, England, have invented certain new and useful Improvements in or Relating to Sparking Igniters for Internal - Combustion Engines, (for which I have made an application in Great Britain, No. 19,428, dated the 9th day of September, 1904,) of which the following is a specification.

My invention has reference to electrical igniters applied to gas and similar internal-combustion engines in which a current of electricity is intermittently generated by the abrupt oscillation of a trip-lever connected to the armature of the magneto-electric generator. When applied to a stationary gas-engine, the trip-lever in recent practice is connected to a plunger or rod acting against a spring, the rod being arranged to momentarily withdraw a finger from the terminal or sparking plug within the combustion-chamber of the cylinder of the engine at the exact moment that a current of electricity has been induced within the circuit by the oscillation of the trip-lever, and thus cause the current to leap the gap so formed, producing a spark which fires the compressed charge.

In the accompanying drawings, Figure 1 shows in side elevation so much of an electrical igniting device as is necessary for a comprehension of my invention with my improved means for actuating the trip-lever. Fig. 2 is an elevation of the same at right angles to Fig. 1. Figs. 3 and 4 are separate detail views of one of the parts of my invention.

My invention refers to means for effecting the oscillation of the trip-lever *a* of the generating-machine at the required time, which consists as follows: On the side shaft *b* of the stationary gas-engine, part of the cylinder *c* only of which is shown in the drawings, I mount an eccentric *d* and strap, the strap *e* having a rod *f*, which is connected at some part of its length to a link *g*, pivoted to a suitably-shaped bracket *B* or fixed part of the engine. The upper end of the eccentric-rod *f* carries a tappet *h*, adjustable on the rod. As the sheave of the eccentric revolves with the side shaft *b* the upper end of the rod, owing to its connection with the link, describes a closed curve, the curve being toward the trip-lever *a* on its downward stroke and away

from it on the upward stroke. The eccentric and rod are so adjusted with respect to the trip-lever of the magneto machine *A* that on the downward stroke of the rod the tappet *h* comes into contact with the trip-lever *a*, vibrating it in a downward direction until released by the tappet. This movement of the trip-lever *a* raises the plunger *i* against the action of the upper spring *j* in the casing *k*. Immediately the tappet *h* is withdrawn from the trip-lever *a* the upper spring *j*, which has been compressed, gives a rapid reverse movement to the trip-lever *a* and the spindle *a'*, thereby generating a current of electricity within the circuit. The lower spring *j'* acts as a buffer on this reverse stroke of the plunger *i*. On the consequent descent of the plunger *i* the lever *i'* is depressed, withdrawing the attached finger *l* from the terminal in the combustion-chamber of the engine, thus making a brake-spark and igniting the combustible mixture. To regulate the oscillation of the trip-lever *a*, the link *g* may be mounted in bearings in the frame of the engine adjustable toward or from the eccentric-rod, so as to bring the tappet *h* nearer to or place it farther away from the trip-lever *a*. This could be conveniently effected by pivoting the link to an eccentric, the rotation of which would give the required adjustment. The means of accomplishing this is shown in detail in Figs. 3 and 4.

The bracket *B* or suitable fixed part of the engine is provided with a bearing *m* for a rotatable stud *n*, which carries an eccentrically-mounted pin *o*, upon which is pivoted the end of the link *g*. By rotating the stud *n* the requisite adjustment can be obtained. The rotation of the stud *n* is effected by means of a handle or lever *p*, secured to the stud *n* and normally locked in position by means of a wedge *q*, carried by the lever *p*, and thrust by means of a spring into one of a series of notches or teeth *r*, carried by the bracket *B*. By withdrawing the spring-actuated wedge *q* the handle or lever *p* and with it the stud *n* can be rotated to the desired extent.

I declare that what I claim is—

In combination a magneto-electric generator, a trip-lever mounted on the axis of the armature of the generator, a plunger connected to one end of such trip-lever, sparking mechanism connected to the other end of the plunger and means for oscillating the trip-lever in one direction consisting of a tappet car-

ried by an eccentric-rod vibrated by an eccentric mounted on the side shaft of the engine the eccentric-rod being connected to a link pivoted onto a bracket or fixed part of the
5 frame of the engine and means for adjusting such link toward or from the eccentric-rod substantially as described.

In witness whereof I have hereunto set my hand in presence of two witnesses.

ALFRED ROWE BELLAMY.

Witnesses:

JOSHUA ENTWISLE.

NORMAN KIERNAN.