

No. 620,149.

Patented Feb. 28, 1899.

J. G. A. KITCHEN.

ACETYLENE LAMP.

(Application filed Dec. 22, 1897.)

(No Model.)

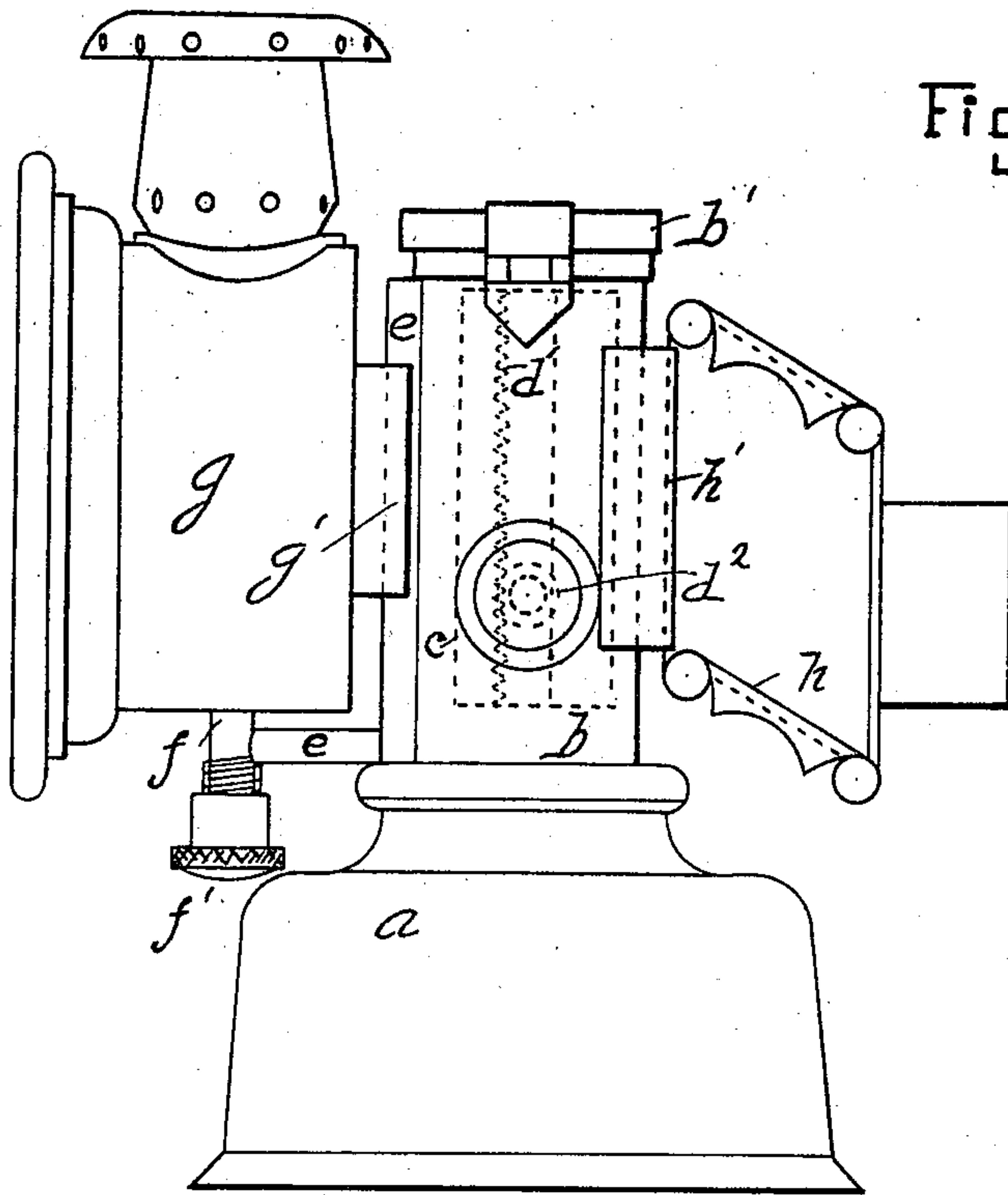


Fig. 1

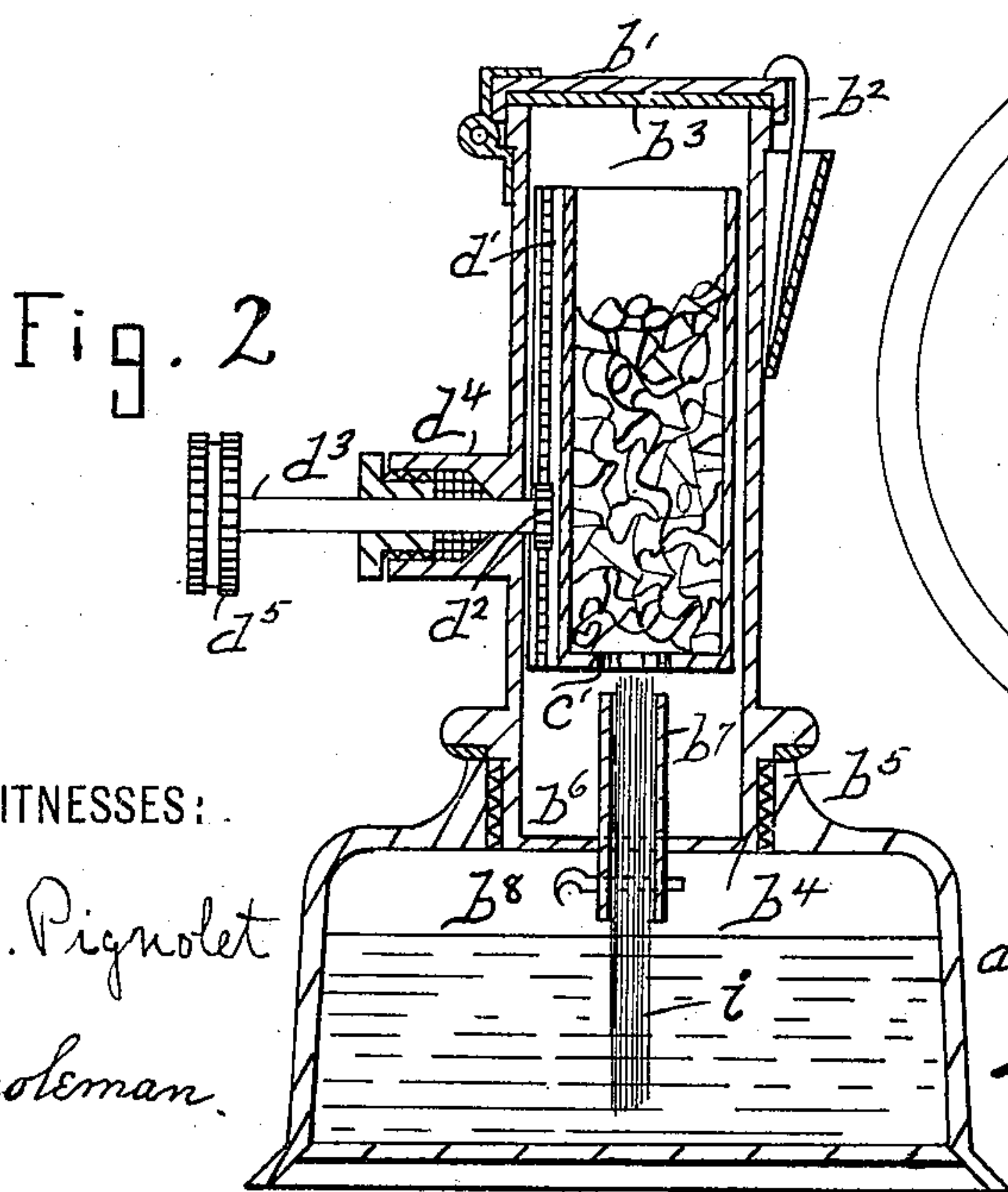


Fig. 2

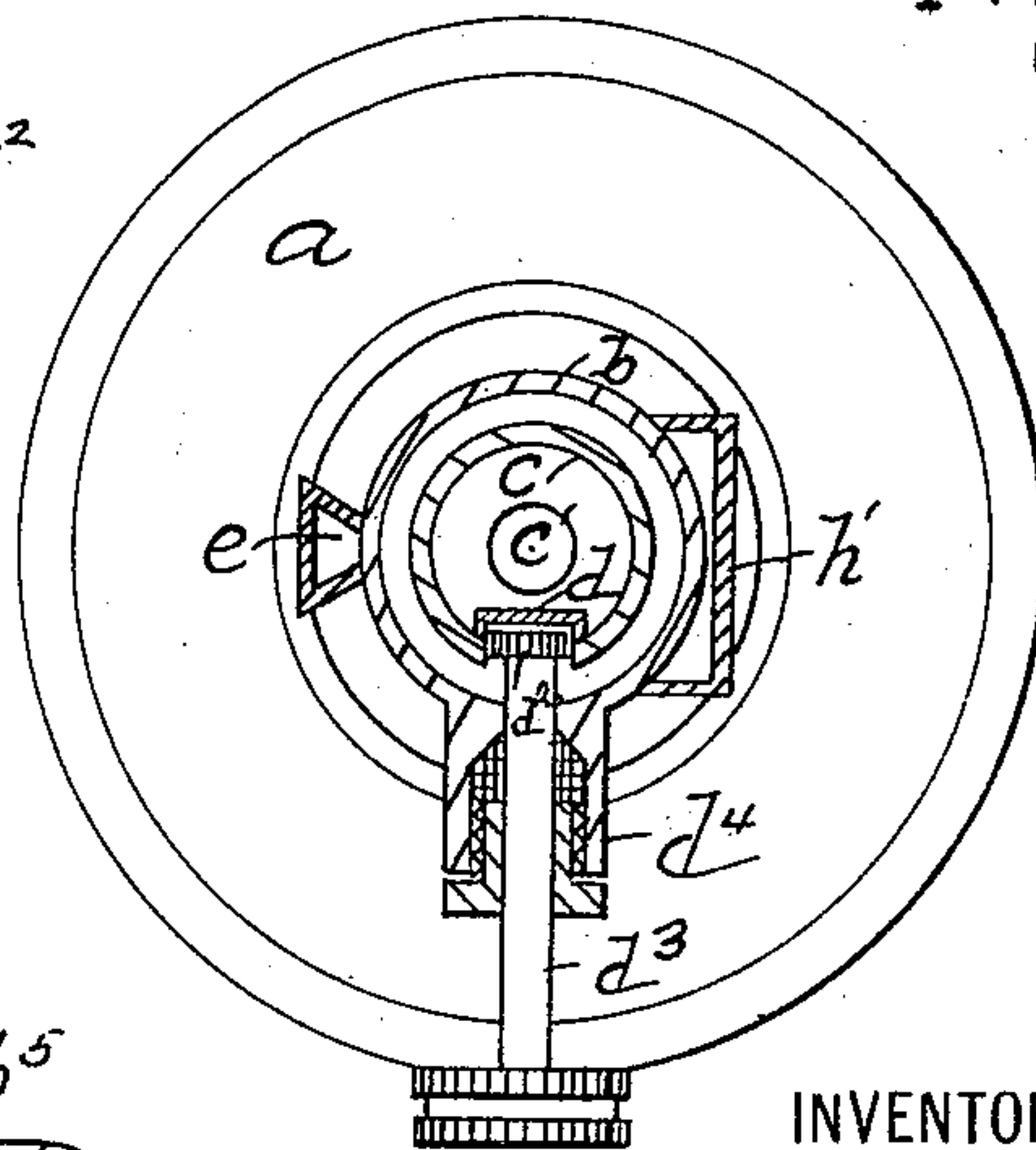


Fig. 3

WITNESSES:

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JOHN GEORGE AULSEBROOK KITCHEN, OF MANCHESTER, ENGLAND,
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LIMITED, OF SAME PLACE.

ACETYLENE-LAMP.

SPECIFICATION forming part of Letters Patent No. 620,149, dated February 28, 1899.

Application filed December 22, 1897. Serial No. 663,407. (No model.)

To all whom it may concern:

Be it known that I, JOHN GEORGE AULSEBROOK KITCHEN, a subject of the Queen of Great Britain, residing at Manchester, in the
5 county of Lancaster, England, have invented certain new and useful Improvements in Acetylene-Lamps, of which the following is a specification.

This invention relates more particularly to
10 portable acetylene table and vehicle lamps; and it consists in an improved construction of generator for producing acetylene from calcium carbid and water, the chief objects of the improvements being to obtain better
15 control over the production of gas and safety from explosion.

My improved generator is constructed in accordance with that system in which the carbid is contained in a vessel above the vessel
20 containing the water and the necessary moisture to cause decomposition of the carbid and the production of the acetylene is conducted to the carbid on the principle of capillary attraction by means of some absorbent ma-
25 terial.

The drawings attached hereunto illustrate the carrying out of my invention.

Figure 1 represents a side elevation of a vehicle-lamp with the improved generator;
30 Fig. 2, a sectional elevation of the generator as seen from the back with the lamp removed, and Fig. 3 a sectional plan of the generator sectioned at the operating-shaft.

In the several views the like parts are indi-
35 cated by similar letters of reference.

Referring to the figures, my improved generator has a lower compartment *a*, formed to contain the reactionary liquid, an upper compartment *b*, which is preferably made detach-
40 able, and a loosely-fitting vessel *c* to contain the calcium carbid. The compartment *b* is fitted with a lid *b'*, preferably hinged, having a spring-catch *b²*, and is made gas-tight by a flexible packing or washer *b³*. It is secured
45 to the lower compartment *a* preferably by means of the screw-joint *b⁴*, (illustrated in Fig. 2,) having a packing *b⁵* therebetween. In the preferably flat bottom of the vessel *c* there is a central orifice *c'*. Along one side of this

vessel there is formed a groove *d*, into which
50 is fixed a rack *d'*, there being sufficient width in the groove for a pinion *d²* to travel up and down. The pinion *d²* is mounted in position upon a spindle *d³*, which is carried in a bearing formed by the stuffing-box *d⁴* upon the
55 exterior of the compartment *b*. The outside end of the spindle *d³* is provided with a milled disk *d⁵*, by which the vessel *c* can be lowered and raised. There is a gas-outlet conduit *e* leading from the upper part of the compart-
60 ment *b* to the burner-socket *f*, which in the case of a vehicle-lamp is mounted in front, say, of the compartment *b*. That part of the conduit *e* lying against the compartment *b* is undercut, forming a dovetailed ridge, as
65 shown in Fig. 3. The hood *g* of the lamp is formed with a groove *g'* to fit the dovetailed ridge and the hood is held in position by passing the groove on the dovetailed ridge. Any
70 other suitable means may, however, be employed for securing one part to the other. The burner-socket *f* has a screwed cap *f'* fitted beneath, by which the burner can be easily cleaned by blowing through or by passing a
75 wire through.

The lamp illustrated in Fig. 1 is provided
with a spring-carrier *h* of well-known construction, which is attached to a saddle-piece
80 *h'*, fixed to the compartment *b*. Any other suitable carrier may be similarly attached.

The compartment *b* is provided with a bot-
tom *b⁶*, in the center of which there is a tube
85 *b⁷*. The bottom of the vessel *c* or carbid-receptacle is preferably flat and its orifice *c'* large enough to pass over the edge of the tube *b⁷*. Into the tube *b⁷* is fitted a wick *i*, which projects above the edge and depends into the vessel *a* and may be fixed in position by a pin *b⁸*.

The production of gas is commenced in this
90 apparatus by lowering the vessel *c* until the wick passes through the orifice *c'* in the vessel *c* and comes in contact with the carbid, when gas is produced due to the moisture communicated by the wick from the water in
95 the vessel *a*. The production of gas is practically stopped by raising the vessel *c* by means of the spindle *d³* clear of the wick *i*.

When the carbid in the lower part of the vessel *c* is exhausted and the resulting lime-dust does not carry the moisture in a sufficient quantity for maintaining the generation of gas to the carbid in the upper part of the vessel *c*, the latter can be lowered till the top of the wick-tube is pushed through the lime-dust and the wick comes into contact with the upper layers of carbid.

10 According to requirements, the relative lengths of the wick-tube and carbid vessel may be varied from the proportions shown on the drawings.

I claim as my invention—

15 A vehicle acetylene-lamp consisting of the combination of a lower liquid-containing compartment, an upper compartment, attachable and detachable therefrom, and communicating by means of a wick-tube with the lower
20 compartment, the upper compartment having at its upper end a hinged lid and catch therefor, a loosely-fitting carbid-containing vessel

within the upper compartment and provided with a longitudinal groove on one side thereof, in the groove there being located a rack, a 25 pinion gearing with the rack and operative from the outside of said upper compartment, a dovetailed-shaped exit-tube for the gas passing from the upper part of the upper compartment downward along the upper compartment 30 to a gas-burner socket *f*, a hood having a dovetailed groove slidable upon said dovetailed tube, and a packing surrounding the shaft *d*³ which holds the pinion and passes from the same to the outside of said upper 35 compartment, substantially as and for the purpose described.

In testimony I have hereto affixed my signature in the presence of two witnesses.

JOHN GEORGE AULSEBROOK KITCHEN.

Witnesses:

CARL BOLLÉ,

RIDLEY JAMES URQUHART.