

(No Model.)

2 Sheets—Sheet 1.

B. G. OLSON.

IGNITING DEVICE FOR GAS OR LAMP BURNERS OR OIL OR GAS STOVES.

No. 512,315.

Patented Jan. 9, 1894.

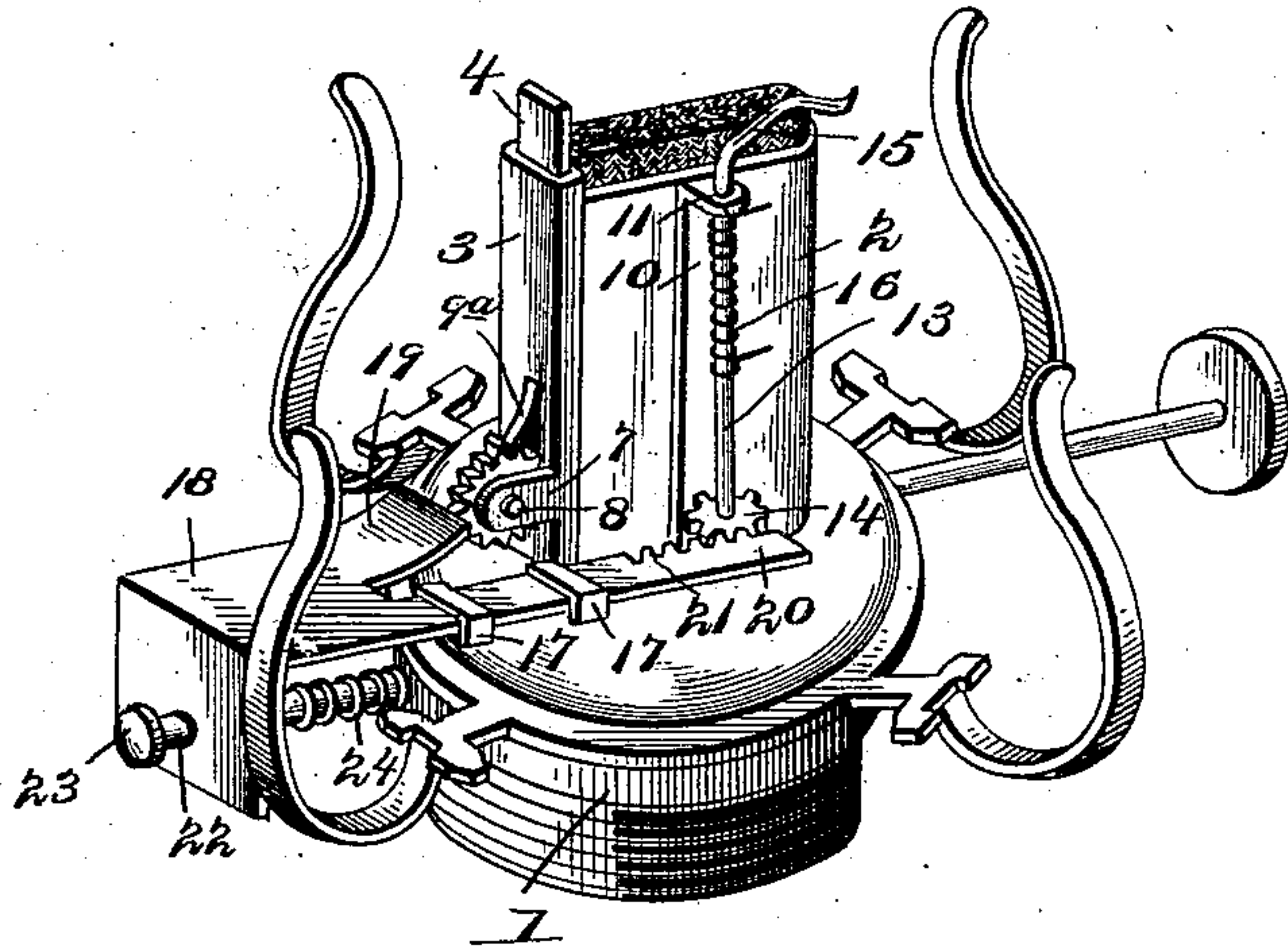


Fig. 1.

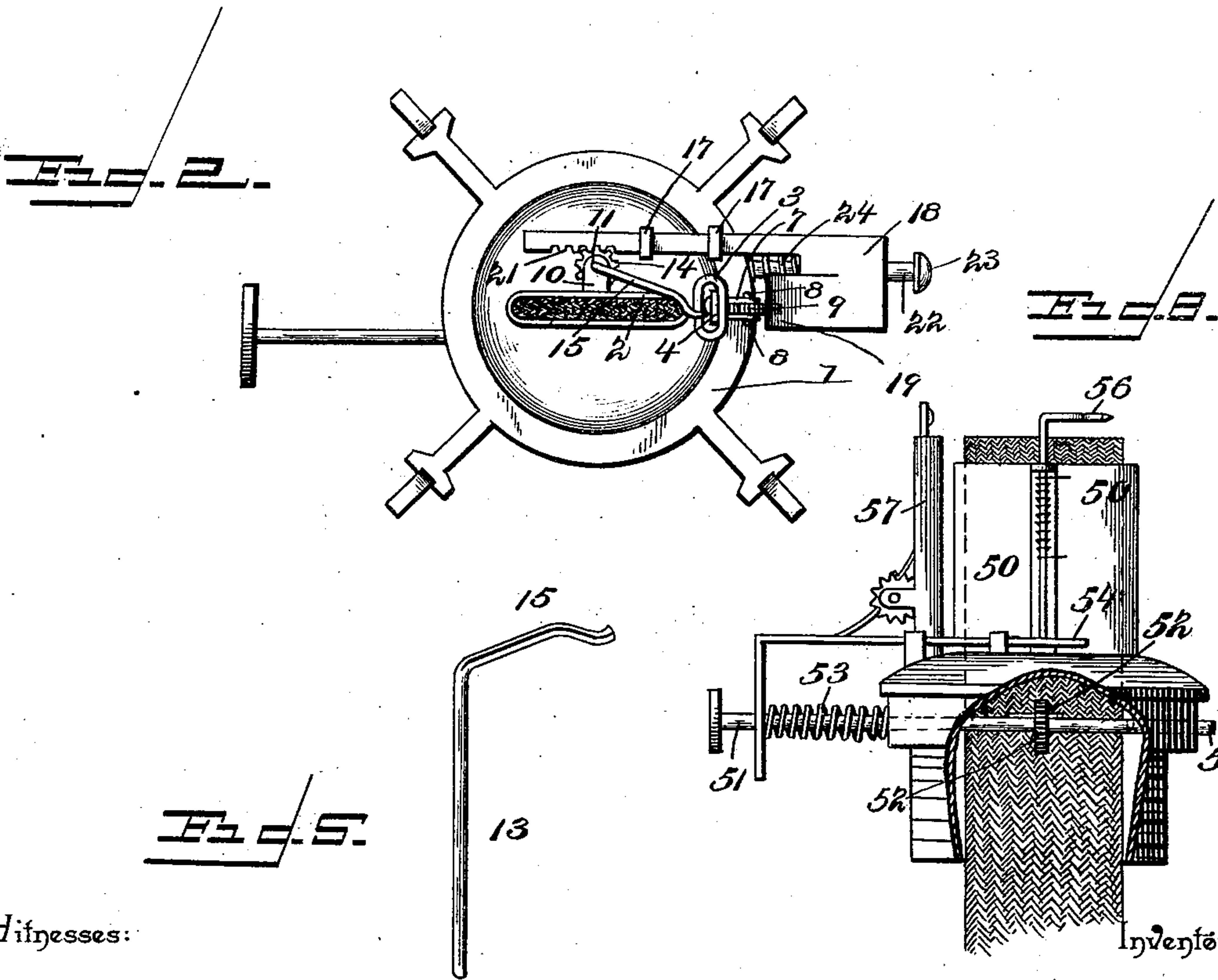


Fig. 2.

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Bernard G. Olson,

Inventor:

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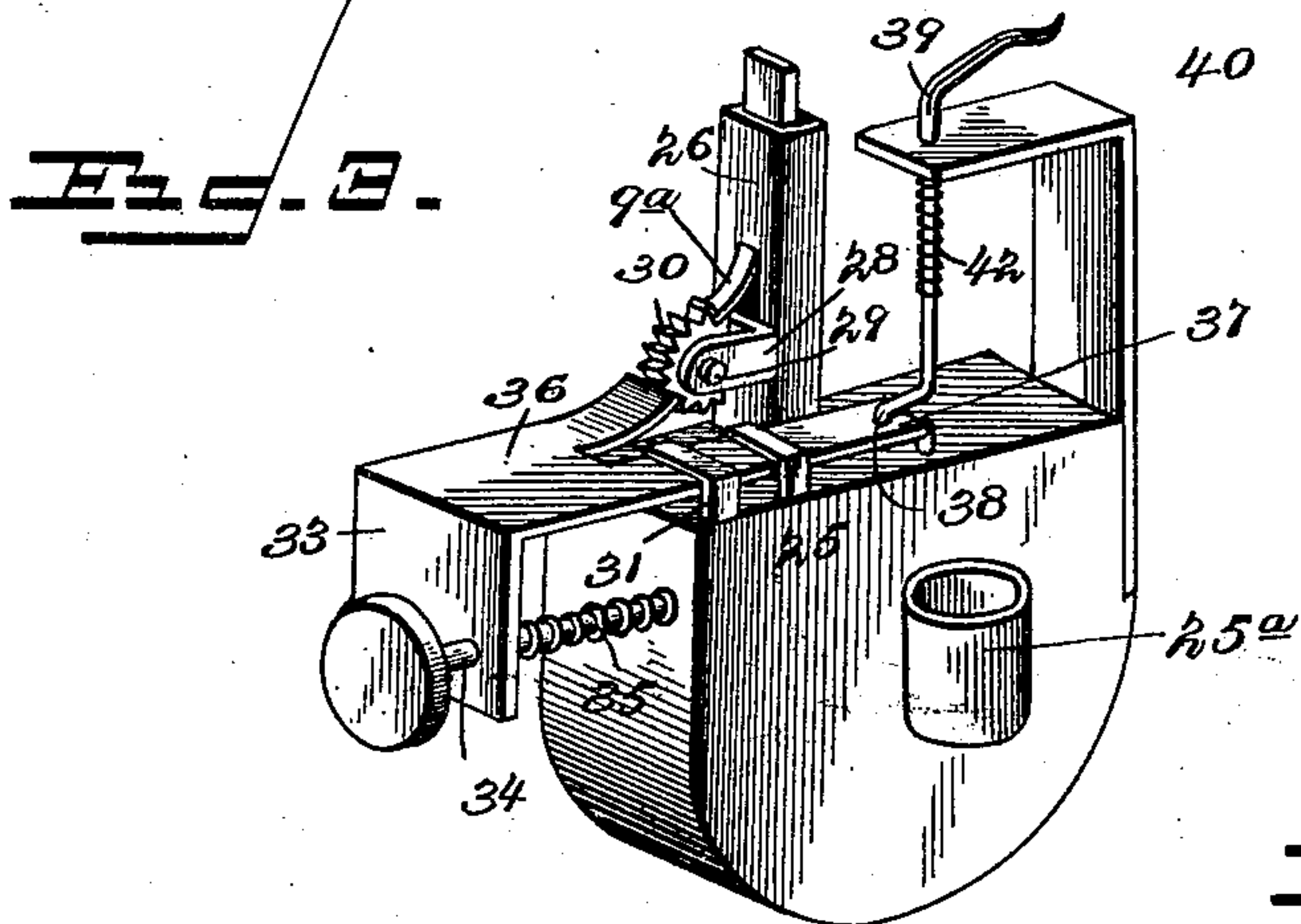


Fig. 4.

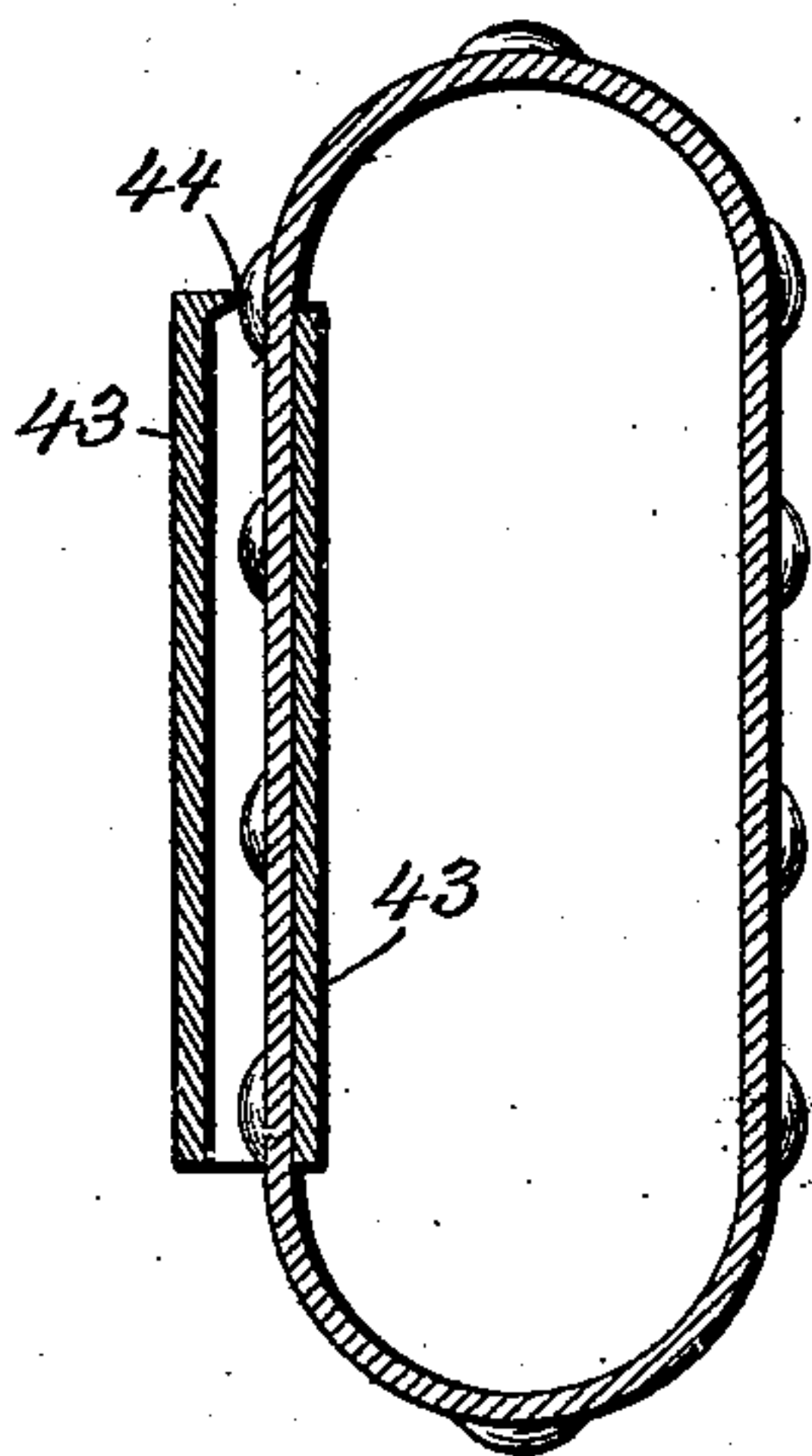
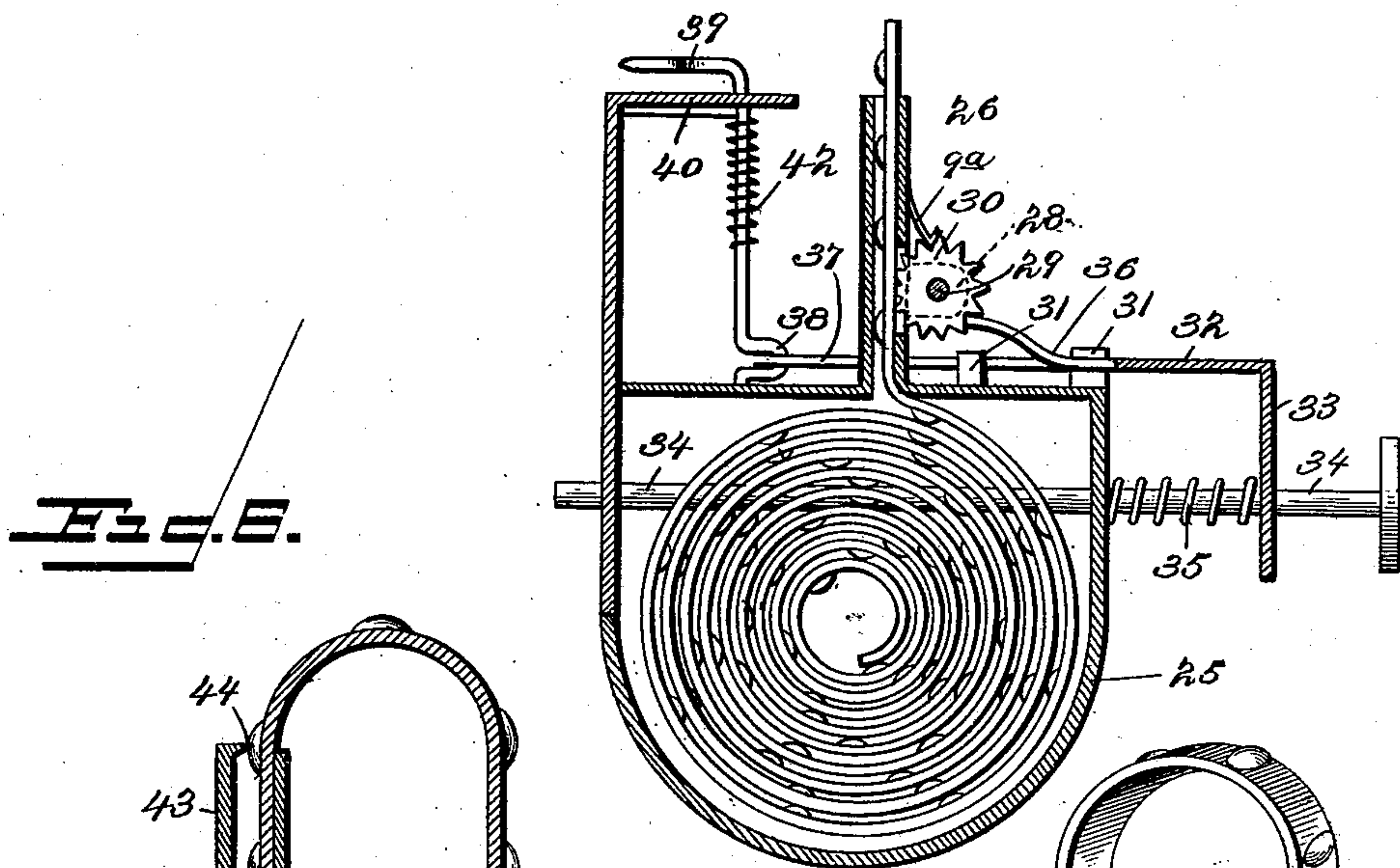
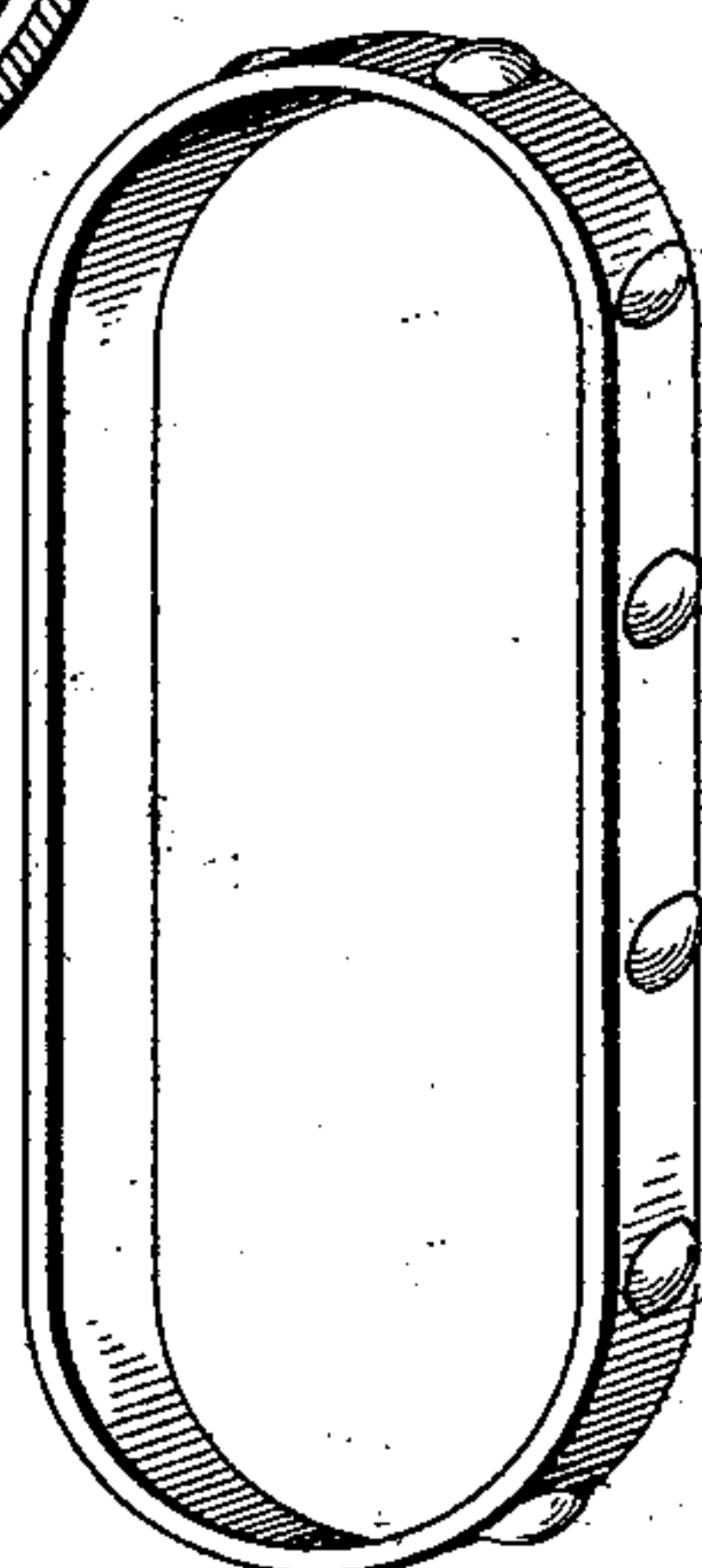


Fig. 7.



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UNITED STATES PATENT OFFICE.

BERNARD G. OLSON, OF CHINOOK, MONTANA.

IGNITING DEVICE FOR GAS OR LAMP BURNERS OR OIL OR GAS STOVES.

SPECIFICATION forming part of Letters Patent No. 512,315, dated January 9, 1894.

Application filed May 25, 1893. Serial No. 475,503. (No model.)

To all whom it may concern:

Be it known that I, BERNARD G. OLSON, a citizen of the United States, residing at Chinook, in the county of Choteau and State of Montana, have invented a new and useful Igniting Device for Gas or Lamp Burners or Oil or Gas Stoves, of which the following is a specification.

My invention relates to igniting devices for gas and lamp burners or oil and gas stoves; the objects in view being to produce a cheap and simple attachment that may be manufactured in connection with the burner or stove or readily applied thereto and adapted to ignite the same by the explosion of fulminating caps applied to strips of metal, paper, or other material; to support said strips adjacent to the burner; to provide means for feeding the caps successively to a point adjacent to the burner, and for subsequently exploding the same.

With these and other objects in view the invention consists in certain features of construction hereinafter specified and particularly pointed out in the claims.

Referring to the drawings:—Figure 1 is a perspective view of a lamp burner, the same being constructed in accordance with my invention. Fig. 2 is a plan view of Fig. 1, the device having been operated and about to explode the fulminating cap. Fig. 3 is a perspective view of an attachment to be used in connection with gas or oil stoves. Fig. 4 is a vertical longitudinal sectional view of the same. Fig. 5 is a detail in perspective of the oscillating exploder shaft. Fig. 6 is a modified construction of attachment that may be employed. Fig. 7 is a fulminating strip adapted especially to be used in connection with the latter. Fig. 8 is a perspective view of a modified construction of attachment.

Like numerals of reference indicate like parts in all the figures of the drawings.

The lamp burner consists of the usual threaded cap 1, from which rises the wick-tube 2 carrying the wick. At one side or near one edge of said wick-tube the cap of the burner is provided with an opening, and from the same rises a flat and in cross section elongated tube 3, which is designed to accommodate and form a vertical way and support for the fulminating strip 4, which as shown is provided at intervals with fulminates. The

inner side of the strip-carrying tube is cut away so that a fulminate of the strip may be presented in juxtaposition to the wick. The outer side or wall of the strip-carrying tube is slotted and bearing-ears 7 are arranged at opposite sides of the slot in transverse alignment for the support of a transverse shaft 8, which carries a feed-wheel 9. This feed-wheel 9 is of the pattern usually employed in wick-tubes, that is, it is toothed. If desired, however, two of such wheels may be employed at opposite sides of the strip-tube, or a frictional wheel may be substituted, all of which are the well known equivalents of the others. A holding-pawl 9^a prevents the wheel from retrograding. A bearing-ear 10 extends laterally from the flat side of the wick-tube and is vertically opposite a bearing opening or perforation 11 formed in the cap of the burner. Mounted for oscillation in the bearing-ear and the said perforation is an exploding shaft 13, which near its lower end is provided with a small cog-wheel 14, and at its upper end is laterally bent to form a horizontal arm 15, or if desired, the arm may be secured to the upper end of the shaft, but in either instance is designed to travel between the tubes 2 and 3. The arm is preferably resilient, for which purpose the said shaft may be reduced and terminates in a point adapted to contact with and operate to explode the fulminates as they are successively brought in the path of the arm. A coiled spring 16 entwines the shaft and serves to retract the same after each passage of the exploding arm across a fulminate.

In a pair of horizontal ways 17 with which the cap may be provided, or in any other suitable support there is located an L-shaped plate 18 having a long and a short terminal 19 and 20, respectively. The long terminal is provided at its inner edge and between its ends with a series of cog-teeth 21, which after the plate has moved a certain distance engage with the cog-wheel of the exploding shaft and serve to oscillate the same sufficiently to cause the exploding arm to operate upon the fulminate. The short terminal of the plate is upwardly bent to form a pawl which engages with the teeth of the feed-wheel of the fulminating disk tube. The outer bent end of the plate is perforated and through it and a corresponding perforation formed in the cap

is inserted a plunger rod 22, which terminates at its outer end beyond the plate in a button or head 23. Between the bent end of the plate and the cap there encircles the said rod a coiled spring 24, the tendency of which is to force the rod outward together with the plate, and against such tendency the plate and rod are operated when it is desired to ignite the wick.

The operation of this attachment is as follows: By pressing inwardly upon the plunger or rod the feed-wheel is moved sufficient to elevate the fulminating strip, and thus expose a fulminate to the path or action of the exploding arm. By this time the cog-teeth have engaged with the teeth of the cog-wheel on the exploding shaft and have oscillated said shaft, such oscillation, it will be seen, occurring after the feeding of the fulminating strip. As soon as released the operating rod returns and the exploding shaft is retracted.

The fulminating strip may be metal, paper, or other material and may be endless or otherwise formed, and is designed to extend down into the oil-fount of lamp.

When the device is applied to gas or oil stoves I prefer to employ for the reception of the fulminating strip a circular casing 25, the same having a removable cover at one side and provided upon its upper end with an opening from which rises vertically a tube 26. This tube is arranged adjacent to the burner of a gas-bracket, oil stove or gas stove, as the case may be, in any suitable manner, as, for instance, by a clip 25^a located at one side of the casing 25 and designed to fit over the burner. Any other means, however, may be employed, such forming no part of my present invention, and is designed to receive the fulminating strip, the remainder of the strip being coiled compactly within the casing. One side of the tube is slotted and provided with the bearing-lugs 28 in which is located the journal or shaft 29 of the feed-wheel 30. In a pair of ways 31 arranged at the opposite sides of the casing the L-shaped plate 32 is mounted for reciprocation. The outer end of the L-shaped plate depends as at 33, and through it passes the plunger-rod 34. Between the plate and the casing a coiled spring 35 passes, which performs the same function as that heretofore described, namely, of forcing the plate and plunger outward. The plate at its inner end is provided with long and short terminals 36 and 37, respectively, the latter operating upon the feed-wheel in the manner heretofore described, while the former is loosely connected with a cranked portion 38 with which the lower part of an oscillating exploding shaft 39 is provided. This cranked portion serves the same function as the cog-wheel in the former construction, the cog-wheel being preferred. The shaft is journaled at its lower end in a perforation in the casing, and at its upper end in an inverted L-shaped bracket 40 and above

said bracket is laterally bent to produce the resilient exploding arm. The shaft is retracted after each operation through the instrumentality of the coiled retracting spring 42. The operation of this slightly modified construction is the same as that heretofore described and requires no explanation.

In the third modification illustrated in Fig. 6, the tube 43 for carrying the fulminating strip may be applied to the burner-cap of a lamp or to the casing heretofore described, but the remaining mechanism is omitted. This tube is provided at its upper end immediately below its cut out portion or opposite the same with an inwardly disposed finger or point 44. As before indicated, in this form of lighting attachment, the fulminate is preferably located upon light metal strips, endless or otherwise, and the feeding of the strips is accomplished by hand, which may be achieved, inasmuch as the strips when formed of metal are strong enough to resist breaking. As each fulminate is brought against the exploding finger it is exploded and ignites the wick, gas-jet, or gas or oil stoves, as the case may be.

Various changes in the details of the construction may be made without departing from the principle of my invention or sacrificing any of the advantages thereof, and I therefore do not limit the invention to those herein shown and described.

If desired, the wick-raising shaft may be utilized for operating the attachment, in which case no change in the construction would be made, but simply the shaft be mounted to reciprocate as well as rotate. I have illustrated this modification in Fig. 8 of the drawings, in which 50 designates a lamp burner, in which there is loosely mounted the horizontal feed-shaft 51, the feed wheel 52 of which is splined thereon. A spring 53 normally forces the feed-shaft out. A rack-bar 54 projects from the shaft alongside the burner and operates the oscillatory exploding shaft as before described. This shaft carries the arm 56 and the same operates against the fulminates carried by the strip as the latter is fed upward in the tube 57.

Having described my invention, what I claim is—

1. An igniting device having a fulminating strip receiving tube and adapted to be applied to a burner, combined with means for feeding a fulminate strip, and a vertical oscillating exploding shaft carrying a horizontal arm adapted to sweep across the burner and against the fulminates of the strip, substantially as specified.

2. In an igniting device, the combination with a fulminating strip carrying tube, means for feeding said strip, of a vertical oscillating exploding shaft carrying a horizontal arm for contacting with the fulminates of the strip, means for operating the shaft, and swinging the arm across the wick-tube and a spring for

returning the same after such operation, substantially as specified.

3. In an igniting device, the combination with a fulminating strip carrying tube having
5 a feed wheel at one side projecting through a slot in the tube, of an oscillating shaft carrying an exploding arm, a spring for retracting the shaft, an L-shaped plate mounted in ways and having a bifurcation at one end and
10 at its opposite end bent downwardly, one of said bifurcations engaging the feed-wheel and the other provided near one end with teeth, a cog-wheel carried by the shaft and engaging the teeth, and a spring-pressed plunger
15 passed through an opening in the outer bent end of the plate, substantially as specified.

4. In an igniting device, the combination with a strip carrying fulminating tube, a feed-
20 wheel arranged in a slot therein, and an oscillating shaft carrying an arm, of a spring for retracting the shaft, a bifurcated plate, one bifurcation of which loosely engages with the shaft and operates the same, and the other
25 one of which engages with the feed-wheel and operates it, and a spring for normally press-

ing the plate outward, substantially as specified.

5. The combination with a lamp-burner cap, and a wick tube, of a fulminating strip carrying tube arranged adjacent to the narrow
30 edge of the wick tube and over an opening therein, a feed-wheel arranged in the strip-tube, a pair of bearings at the flat side of said wick-tube, an oscillating shaft carrying an ex-
35 ploding arm mounted in the bearings, a spring for retracting the shaft, a bifurcated bent plate mounted in ways upon the cap, one bifurcation being loosely connected with the shaft and the other with the feed wheel, the
40 outer end of said plate being bent downwardly and perforated, and a spring-pressed plunger mounted in a perforation in the plate and cap, substantially as specified.

In testimony that I claim the foregoing as
45 my own I have hereto affixed my signature in the presence of two witnesses.

BERNARD G. OLSON.

Witnesses:

L. V. BOGY,

THOS. O'HANLON.