

No. 697,348.

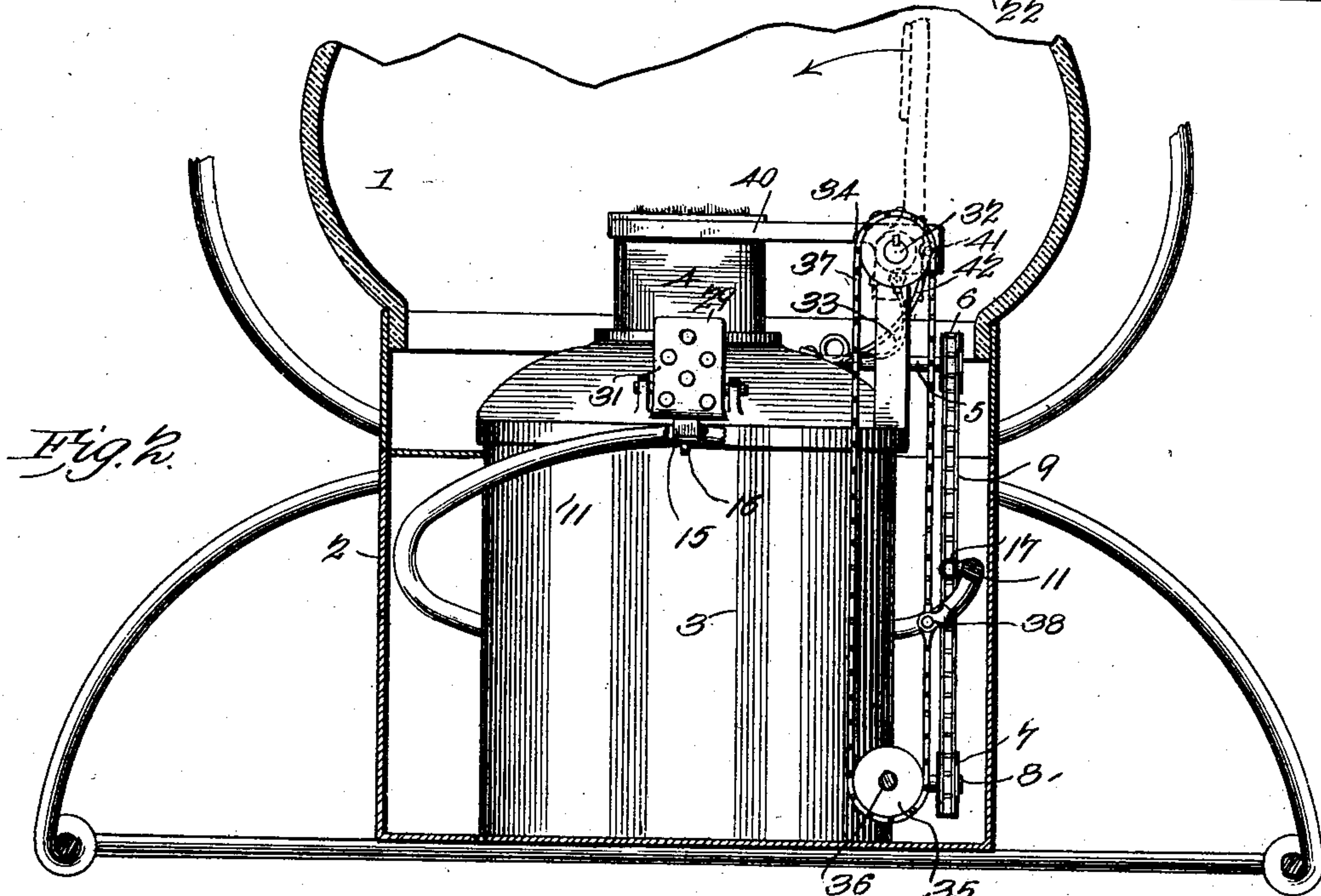
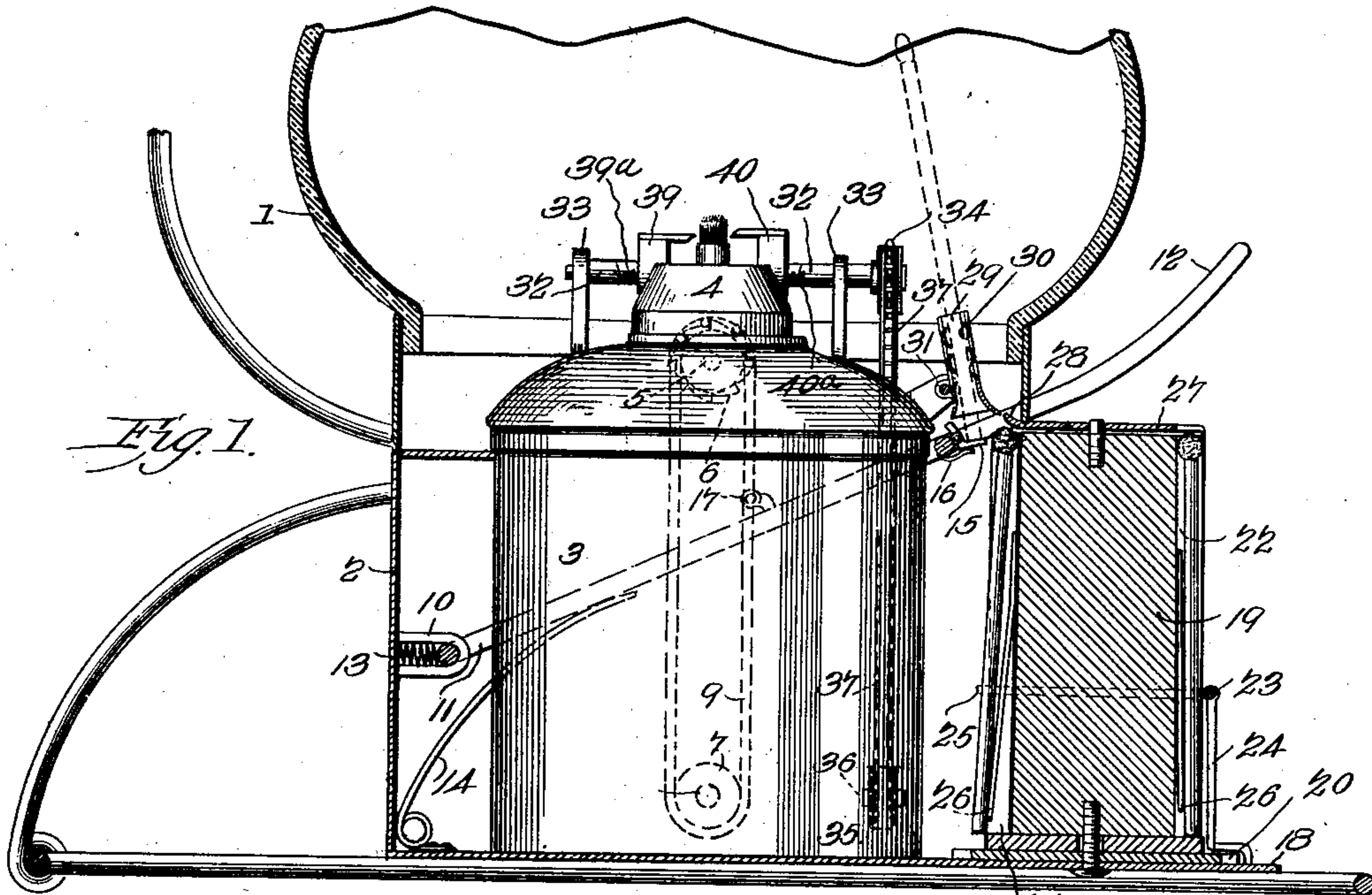
Patented Apr. 8, 1902.

I. LOVE & W. RAY.
RAILROAD LANTERN.

(Application filed July 8, 1901.)

(No Model.)

2 Sheets—Sheet I.



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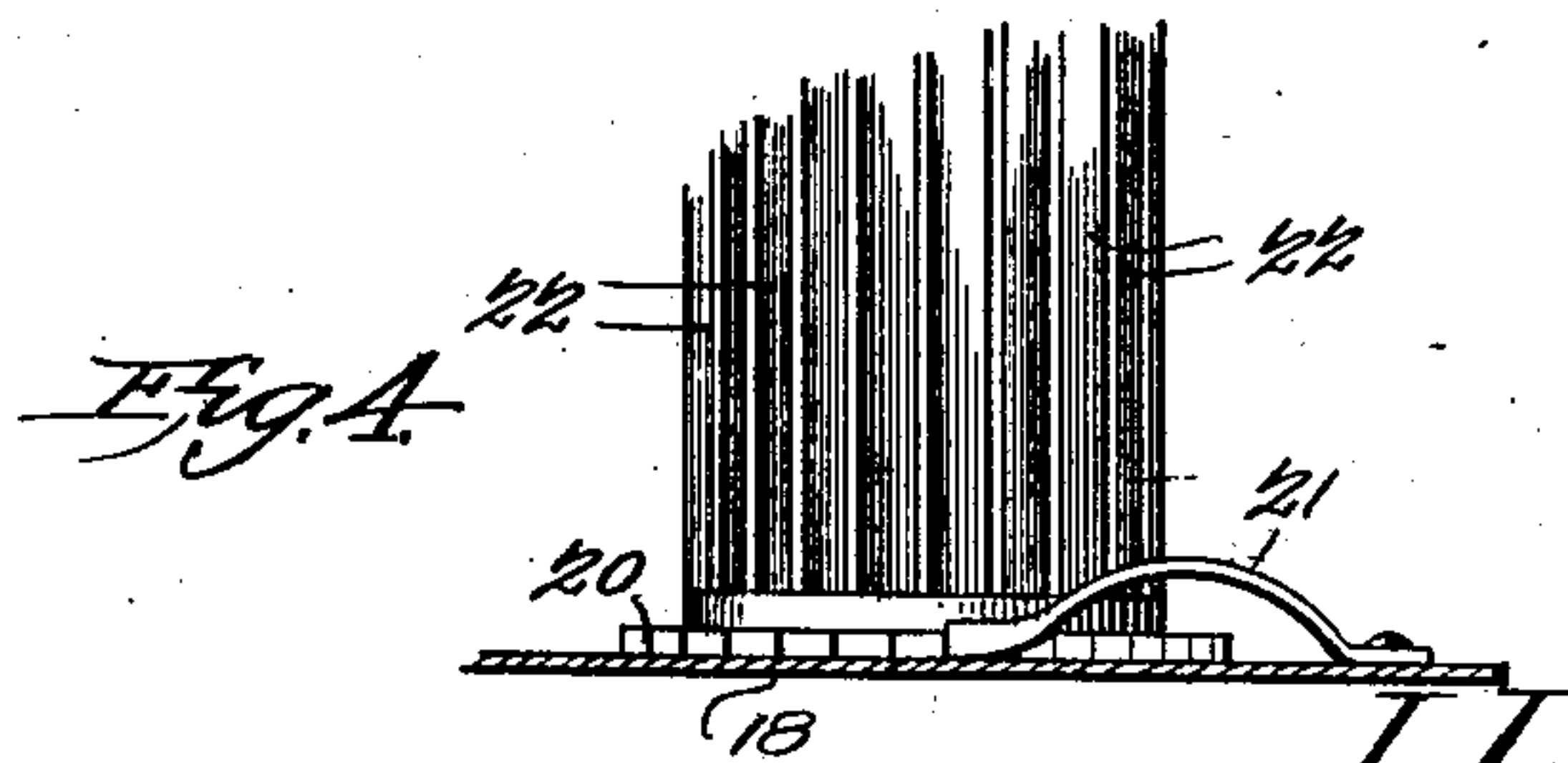
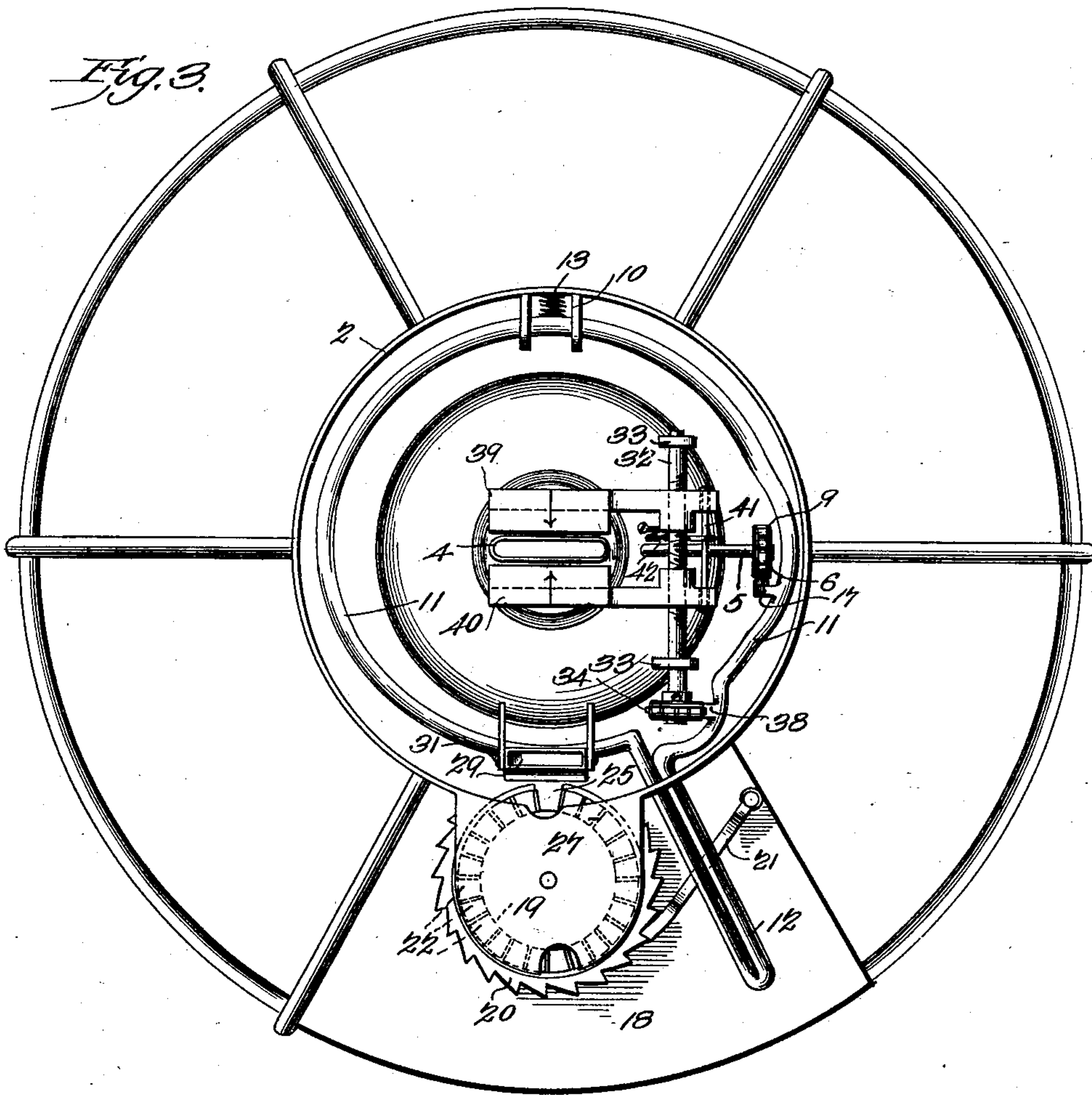
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2 Sheets—Sheet 2.



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UNITED STATES PATENT OFFICE.

ISOM LOVE AND WILLIAM RAY, OF PANAMA, MISSOURI.

RAILROAD-LANTERN.

SPECIFICATION forming part of Letters Patent No. 697,348, dated April 8, 1902.

Application filed July 8, 1901. Serial No. 67,489. (No model.)

To all whom it may concern:

Be it known that we, ISOM LOVE and WILLIAM RAY, citizens of the United States, residing at Panama, in the county of Vernon and State of Missouri, have invented a new and useful Railroad-Lantern, of which the following is a specification.

Our invention is an improved railroad-lantern provided with devices to automatically raise, ignite, and snuff or trim the wick; and it consists in the peculiar construction and combination of devices hereinafter fully set forth and claimed.

In the accompanying drawings, Figure 1 is a vertical sectional view of the lower portion of a lantern constructed in accordance with our invention. Fig. 2 is a similar view of the same, taken on a plane at right angles to Fig. 2. Fig. 3 is a top plan view of the same. Fig. 4 is a detail elevation of the revoluble match-magazine and the step-by-step mechanism to rotate the same.

The lantern may be of any suitable construction. In the form here shown the globe 1 is supported by a cylindrical casing 2, in which is located the removable font 3. The said font is provided with a burner (indicated at 4) and having a suitable wick-raiser, the revoluble shaft 5 of which is here shown and is provided at its outer end with a ratchet sprocket-wheel 6. A guide-wheel 7 is journaled on a suitable stud 8, that projects from one side of the font, near the lower end thereof, and the said wheels 6 7 are connected together by an endless chain 9, which is adapted to slip on the wheel 6 when moved in one direction and to rotate said wheel 6, and thereby raise the wick, when moved in the opposite direction.

In one side of the casing 2 or at any other suitable point is a guide 10, in which is fulcrumed a lever-ring 11, which passes around the font and is provided on one side with a finger-piece 12. A spring 13 bears against the said lever-ring and normally moves the same or retains the same at the inner end of the guide 10, while permitting of movement of said lever-ring in said guide. A spring 14 normally raises said lever-ring. The latter is provided on the side opposite its fulcrum with a pivoted engaging finger 15, which is pressed outwardly by a spring 16. The said lever-

ring is connected to the endless chain 9, as at 17, and hence the said lever-ring is adapted to operate the said chain. From the foregoing it will be understood that by depressing the lever-ring by means of the finger-piece power will be communicated from said lever-ring to the wick-raiser. On the ensuing ascent of the lever-ring the chain 9 will slip with reference to the wick-raiser, and hence leave the wick in a raised position, ready for burning. On a suitable base 18 with which the lantern-frame is provided is mounted a vertically-disposed revoluble cylindrical match-magazine 19. At the base of the same is a ratchet-wheel 20. We provide a spring-dog 21, which is here shown as disposed and secured at its outer end on the base 18. The inner end of said spring-dog is in engagement with the ratchet-wheel 20, and said spring-dog is in the path of the finger-piece 12 of the lever-ring 11. When the said lever-ring is depressed, the finger-piece thereof engages the said spring-dog and causes the latter by means of the ratchet-wheel 20 to rotate the match-magazine a distance equal to the width of one of the teeth of said ratchet-wheel. Hence the said ratchet-wheel, spring-dog, and lever-ring constitute a step-by-step mechanism to rotate said match-magazine. The latter is provided with a series of peripheral vertical pockets 22, which are opened on their outer sides and each of which is adapted to contain a match. A retaining-ring 23 surrounds the said magazine and is held by a suitable support 24. The said retaining-ring is split or open on the inner side thereof which is opposed to one side of the font, and the said opening 25 in the said retaining-ring constitutes a clearance-opening through which the matches may be successively ejected from the pockets of the magazine during the step-by-step rotation of the latter. In each of the pockets of the magazine is a spring 26. Said springs press outwardly against the lower ends of the matches, and as each of the pockets of the magazine becomes disposed opposite the opening 25 the spring 26 moves the lower end of the match in the said pocket outwardly from the bottom of the pocket, as shown in Fig. 1. When the lever-ring is depressed, as hereinbefore described, the engaging finger 15 thereof engages the lower overhanging end of the match,

so that the match on the ensuing upstroke of the said lever-ring will be carried upwardly by the said engaging finger, as will be understood.

5 On the upper end of the revoluble match-magazine is a non-revoluble head 27, which is provided on its inner side with an upwardly-inclined deflecting-flange 28, which is engaged by the head of the match as the latter is moved upwardly by the means and in the manner hereinbefore described, and the said deflecting-flange directs the head of the match into a match guide and igniter 29. The said match guide and igniter is here shown as of tubular form, is roughened on its inner surface, as at 30, to ignite the match-head as the latter passes through it, and the said match guide and igniter is here shown as pivotally supported, as at 31, on the upper portion of the font of one side thereof. The upstroke of the lever-ring causes the match to pass almost entirely through the match guide and igniter, so that the lower end of the match will when said lever-ring reaches the upper limit of its movement be in the said match guide and igniter. Hence the leverage of the upper portion of the match will cause the said match guide and igniter to turn inwardly on its pivot, and thereby the ignited head of the match will fall across the upper end of the wick and hence ignite the same. The match will be consumed, and thereby disposed of, or if the lower end of the match remains unconsumed in the match guide and igniter the same will be ejected therefrom when the lever-ring is next operated to withdraw another match from the magazine.

We will now describe means whereby the wick may be readily snuffed or trimmed automatically after being raised and immediately prior to being ignited. A shaft 32 is journaled in suitable bearings 33 on the upper side of the font at a suitable distance to one side of the burner. On one end of the said shaft is a ratchet-wheel 34. A similar wheel 35 is journaled on a suitable support 36, which is here shown as disposed on one side of the font, near the lower end thereof. An endless chain 37 connects the wheels 34 35 and is connected to the lever-ring 11, as at 38. When the said lever-ring is operated in the manner and for the purpose hereinbefore described, the same through the chain 37 and wheels 34 35 will oscillate the shaft 32. The latter carries snuffer-arms 39 40, which are engaged, respectively, by reversely-screw-threaded portions 39^a 40^a of the shaft and adapted to move thereon toward and from each other. It will be understood and observed by reference to the drawings that the said snuffer-arms are parallel with the greater diametric axis of the wick-tube and that the said snuffer-arms when turned to a horizontal position by said shaft will be disposed on opposite sides of the upper end of the wick and when moved toward each other will operate to cut off the carbon deposit on the upper end

of the wick and trim the same, as will be understood. The outer ends of said snuffer-arms are connected together by a rod 41, said snuffer-arms being movable on said rod. The latter is attached to the free outer end of a spring 42, which spring is secured on the font, and said spring serves to normally maintain the snuffer-arms in a horizontal position.

When the lever-ring 11 is depressed to engage a match in the magazine and turn up the wick, as before stated, the chain 37 and sprocket-wheel 34 rotate the screw-shaft 32 in one direction and the engaging screw-threads thereof move the snuffer-arms toward each other over the wick and trim the same. This is accomplished before the lever-ring completes its downstroke. As the snuffer-arms are thus run inwardly toward each other the friction between them and the threaded rock-shaft increases, as will be understood, and becomes so great as to countervail the power of the spring 42, and as the rock-shaft continues to rotate until the completion of the downstroke of the lever-ring the snuffer-arms after they have been operated to trim the wick are raised therefrom to a vertical position, carrying the carbon deposits from the wick with them. On the ensuing upstroke of the lever-ring the shaft 32 is rotated in the reversed direction. The spring, owing to the position of its free end directly under the shaft 32, where it was carried as the snuffer-arms were raised to a vertical position, acts upon the rod 41 to retain said snuffer-arms in such position while the match is being drawn from the magazine, ignited, and applied to the wick, the reverse rotation of the shaft 32 serving meanwhile to move the snuffer-arms outwardly from each other, said movement clearing them of the carbon trimmed from the wick, and when the said snuffer-arms are thus moved apart the friction between them and the screw-shaft increases, and as the lever-ring completes its upstroke the final partial reverse rotation of the shaft 32 moves the upper ends of said snuffer-arms inwardly toward the lamp the free end of the spring 42 is moved from its dead-centered position under the shaft 32, and said spring then serves to restore the snuffer-arms to their initial horizontal position.

It will be understood from the foregoing that our improved lantern is adapted to be instantly automatically ignited, thereby rendering it unnecessary to open the lantern in order to ignite the same, and it will be further understood that our improved lantern is also provided with means for automatically raising and snuffing or trimming the wick. Hence our improved lantern is particularly adapted for use on railways by conductors, trainmen, and others.

Having thus described our invention, we claim—

1. In a lantern, the combination of a revoluble match-magazine having a ratchet-wheel, a spring-dog engaging said ratchet-

wheel, a wick-raiser, a lever to operate said dog and said wick-raiser, a match guide and igniter, and means, carried by said lever to feed the matches successively from said magazine to said match guide and igniter, substantially as described.

2. In a lantern, the combination of a revoluble match-magazine, having a ratchet-wheel, a bowed spring-dog fast at one end, adapted to lengthen to engage and rotate said ratchet-wheel and said magazine by a step-by-step movement, a lever to operate said spring-dog, a match guide and igniter and means carried by said lever to feed the matches successively from said magazine to said match guide and igniter, substantially as described.

3. The combination of a revoluble match-magazine having a series of peripheral match-retaining pockets and springs to displace the lower ends of the matches outwardly from said pockets, a match guide and igniter and a lever having an engaging finger to successively engage the lower displaced ends of the matches and feed the latter successively from said magazine to said match guide and igniter, substantially as described.

4. The combination with a burner, of a wick-raiser, a pivotally-supported match-igniter, a match-magazine and means to simultaneously feed a match from the magazine to the igniter, and operate the wick-raiser, substantially as described.

5. The combination with a burner, of a wick-raiser, a pivotally-supported match-igniter, a match-magazine means effective when moved in one direction to simultaneously feed a match from the magazine to the igniter, and operate the wick-raiser, and a snuffer, operated by the initial movement of the wick-raiser operating means, to trim the wick, and moved by the reverse movement of said wick-raiser-operating means, clear of the wick, substantially as described.

6. The combination with a lantern, of a tubular match guide and igniter pivotally mounted, a match-holder and means to feed a match therefrom to said match guide and igniter, the latter being arranged to topple to one side by the leverage of the match; to apply the match to the wick, substantially as described.

7. The combination with a burner, of a tubular match guide and igniter pivotally mounted, and means to feed a match, longitudinally into and partly through said match guide and igniter, whereby the match will be ignited, and whereby the leverage of the match will cause the match guide and igniter to topple to one side to apply the ignited match to the wick, substantially as described.

8. The combination with a lantern of a match guide and igniter mounted for axial movement, and means to feed a match thereto,

said match guide and igniter being adapted to topple to one side by the leverage of the match to dispose the latter across the wick, substantially as described.

9. The combination of a revoluble match-magazine having peripheral match-receiving pockets, a fixed match-retainer, in which said magazine rotates, said retainer having an opening in one side, springs to displace the lower ends of the matches outwardly from said pockets, through said opening, a lever having means to engage the lower ends of the matches successively as they are presented to said opening, and raise the matches from said magazine, and means operated by said lever to rotate said magazine by a step-by-step movement, substantially as described.

10. The combination of a reversely-threaded screw-shaft, snuffer-arms thereon, engaged thereby and movable by said screw-shaft toward and from each other, a rod connecting said snuffer-arms and on which rod said snuffer-arms play, a spring secured at a fixed point and having its free end attached to said rod, and means to rotate said screw-shaft, in reverse directions alternately, substantially as described.

11. In a lantern, the combination of a screw-shaft, a snuffer operated thereby, a spring connected to the snuffer to normally depress the latter, a lever connection between the latter and said screw-shaft to rotate said screw-shaft in reverse directions alternately, a match guide and igniter, and means, operated by said lever, to feed a match to said match guide and igniter, substantially as described.

12. The combination of a burner, a wick-raiser, a match guide and igniter pivotally mounted for oscillatory movement, and means to operate said wick-raiser, and to feed a match to said match guide and igniter, substantially as described.

13. The combination of a burner, a wick-raiser, a match guide and igniter, a lever, and means connected thereto, to operate said wick-raiser and feed a match to said match guide and igniter, substantially as described.

14. The combination of a burner, a wick-raiser, a match guide and igniter, a match-magazine, a lever and means, connected to said lever, to operate said wick-raiser and feed a match from said magazine to said match guide and igniter, substantially as described.

In testimony that we claim the foregoing as our own we have hereto affixed our signatures in the presence of two witnesses.

ISOM LOVE.
WILLIAM RAY.

Witnesses:

J. C. REINHARD,
CHAS. MCCLURE.