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PATENT



SPECIFICATION

Convention Date (United States), May 12, 1917.

Application Date (in the United Kingdom), June 4, 1918. No. 9237/18.

Accepted, May 15, 1919.

COMPLETE SPECIFICATION.

Gas Lighter.

I, CHARLES FREDERICK LARSEN, Inventor, of 702, East 63rd. Street, Chicago, State of Illinois, United States of America, formerly of San Francisco, in the County of San Francisco and State of California, United States of America, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

The device forming the subject matter of this application is adapted to be employed for lighting gas stoves, lamps and the like.

One object of the invention is to provide novel means for securing movement of an actuating member which moves a striker wherewith a pyrophoric element cooperates.

Another object of the invention is to provide a lighter in which the actuating element cooperates in a novel way with the trigger.

A further object of the invention is to provide novel means for securing proper pressure on the pyrophoric element, and for adjusting the pressure thereon.

It is within the province of the disclosure to improve generally and to enhance the utility of devices of that type to which the present invention appertains.

While it is known to construct gas lighters of pistol shape in which an actuating element, upon release, rotates a striker wheel, the present invention includes an actuating element which cooperates in a novel way with the trigger, and the means for pressing the pyrophoric element into engagement with the striker also are distinct from the known arrangement serving the same purpose.

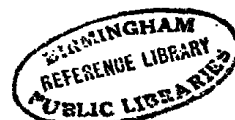
With the above and other objects in view which will appear as the description proceeds the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed can be made within the scope of what is claimed, without departing from the spirit of the invention.

In the accompanying drawings:—

Fig. 1 is a longitudinal section showing a lighter embodying the present invention; Fig. 2 is a top plan of the lighter; Fig. 3 is a cross section on the line 3—3 of Fig. 1; Fig. 4 is a cross section on the line 4—4 of Fig. 1; and Fig. 5 is a fragmental side elevation of the actuating member.

The device forming the subject matter of this application includes a body preferably made of metal and comprising a pair of parallel side members in the form of plates, having the general form of a pistol. The side members are united by a rear cross piece, a front cross piece and an intermediate cross piece. In the butts of the side members, holes are fashioned, so that the body can be hung up when not in use.

[Price 6d.]



The side members 2 are united by a pivot element 7 received in an opening 8 formed in a trigger 11, the trigger 11 being mounted to swing on the pivot element, between the side members 2 and parallel thereto. The trigger 11 has an upstanding finger 9 and is provided with a primary opening 10 extended entirely through the trigger, the axis of the primary opening being parallel to the side members 2. The trigger 10 also has a secondary opening 12 the axis of which is at right angles to the side members 2, the secondary opening 12 being in the form of a key hole slot, the opening 12 communicating with the opening 10.

The forward end of a retractile spring 14 is connected with the upstanding finger 9 of the trigger 10, the rear end of the spring 14 being received in a notch 15 formed in the rear edge of a projection 16 upstanding at the rear end of an actuating member 17 in the form of a bar, the actuating member being located between the side elements 2 and being received slidably in the primary opening 10 of the trigger 11. In front of the projection 16, the actuating member 17 has a depressed edge constituting a track 18, and at the forward end of the track 18, a depressed seat 19 is fashioned in the upper edge of the actuating member. The numeral 20 denotes a roller received in the seat 19 and adapted to traverse the track 18, the roller lying in the opening 10 of the trigger and including trunnions 21 mounted in the reduced portions of the key hole slots 12 in the trigger 9. The roller 20 is adapted to pass into the opening 10 of the trigger 11 through the enlarged portions of the key hole slots 12, the trunnions 21 being received for rotation in the reduced upper portions of the key hole slots. At its forward end, the actuating member 17 is provided with a rack 22, the forward extremity 23 of the part 17 coacting with the cross piece 4, which acts as a stop, limiting the forward movement of the actuating member.

Extended between the side members 2 near to the forward end of the body 1 is a shaft 24 constituting a support for a rotatable element 25 including a pinion 26 meshing into the rack 22 of the actuating member 17, and a finely toothed striker 27 disposed at the side of the pinion 26. The pinion 26 and the striker 27 preferably are formed in one piece, although this construction is not insisted upon.

A socket 29 is secured to the inner face of one of the side members 2 near to the forward end of the body 1. In the rear side of the socket 29 a slot 30 is formed. A pyrophoric element 31 is mounted to slide in the socket 29 and bears on the striker 27. The numeral 32 denotes a pressure member extended longitudinally of the body 1 and located between the side members 2. The forward end of the pressure member 32 enters the slot 30 in the socket 29 and terminates in a depending finger 33 bearing on the pyrophoric element 31. The pressure member 32 includes a lateral wing 34 constituting a means whereby the rear end of the pressure member may be attached securely to a shaft 35 journaled in the side members 2. The pressure member 32 has a depending extension 36 to which a rearwardly extended rod 37 is pivoted as shown at 38. A rod 37 passes slidably through the intermediate cross piece 5. A compression spring 39 surrounds a portion of the rod 37, the forward end of the spring 39 abutting against the cross piece 5, and the rear end of the spring abutting against a nut 40 threaded onto the rod 37.

In practical operation, when the lower end of the trigger 11 is swung rearwardly, the actuating member 17 is drawn rearwardly, because the roller 20 is engaged in the seat 19, and since the trunnions 21 of the roller are engaged in the reduced portions of the key hole slots 12 in the trigger. By this operation, the spring 14 is put under tension. The trigger swings about the pin 7 in the slot of the trigger and when the trigger is pulled back the roller 20 must leave the seat in the member 17 which is prevented from rising by the shaft 35. As soon as it has left this seat the spring 14 enters into operation.

When the roller 20 rides out of the seat 19, the spring 14 moves the actuating member 17 smartly forward, the roller 20 riding along the track 18 of the actuating member 17, and the forward end 23 of the actuating member ultimately coming into abutment with the cross piece 4. When the actuating member 17 moves forwardly the rack 22 turns the rotatable element 25 rapidly, through the instrumentality of the pinion 26 and the striker 27, rotating in contact with the pyrophoric element 31 in the socket 29, produces a train of sparks. On release of the trigger the roller 20 automatically enters the seat of the actuating member after the advance of the same.

10 The spring 39, exerting a pressure against the nut 40 and the cross piece 5, pulls the rod 37 rearwardly and swings the forward end of the pressure member 32 downwardly, the finger 33 thus being held yieldingly on the pyrophoric element 31, and constituting means for advancing the pyrophoric element against the striker 27. The effort of the spring 39, and consequently  
15 the pressure exerted by the finger 33 on the pyrophoric element 31, may be adjusted by rotating the nut 40. When it is desired to renew the pyrophoric element 31, the nut 40 is backed toward the rear end of the rod 37, and then the forward end of the pressure member 32 may be swung upwardly out of the slot 30, whereupon the pyrophoric element 31 may be renewed.

20 Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:—

1. A gas lighter of the kind in which a striker and a pinion connected for simultaneous rotation are journaled in the body in cooperation with a pyrophoric element, including a trigger which is mounted intermediate its ends to swing in the body, an actuating member slidably supported by the trigger, and means for connecting the trigger and the actuating member releasably whereby, upon pressing rearward on the trigger, the actuating member will first be retracted and will then be advanced through a spring after having been released  
25 from the trigger, the spring being tensioned when the trigger is pressed rearwardly.

2. A gas lighter, as set forth in Claim 1, including as means for associating the trigger with the actuating member, a roller journaled in the trigger and received releasably in a seat of the actuating member, the actuating member  
35 being provided with a track for the roller to permit the retractive and advance movement of the actuating member and the automatic entrance of the roller into the seat of the actuating member after the advance of the same.

3. A gas lighter, as set forth in Claim 1, including a pressure member extended longitudinally of the body and acting at its forward end upon the upper portion of a pyrophoric element which is guided in a socket to force the lower end of said pyrophoric element into contact with the striker wheel actuated by the advancing actuating member, the pressure member being under the adjustable control of a spring.

4. A gas lighter, substantially as described and shown, and for the purpose  
45 set forth.

Dated this 4th day of June, 1918.

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62, Saint Vincent Street, Glasgow,  
Agents for the Applicant.

Fig. 1.

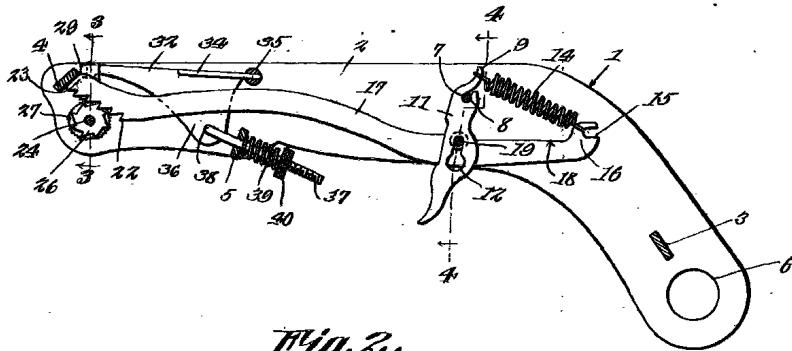


Fig. 2.

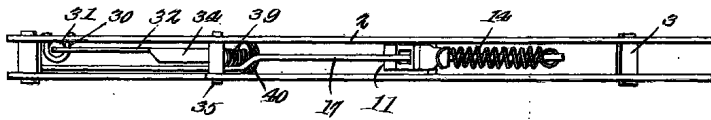


Fig. 3.

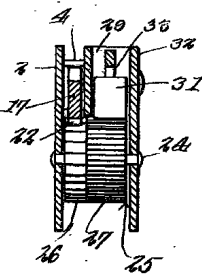


Fig. 4.

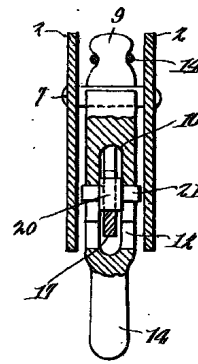
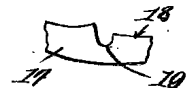


Fig. 5.



[This Drawing is a reproduction of the Original on a reduced scale]

Fig. 1.

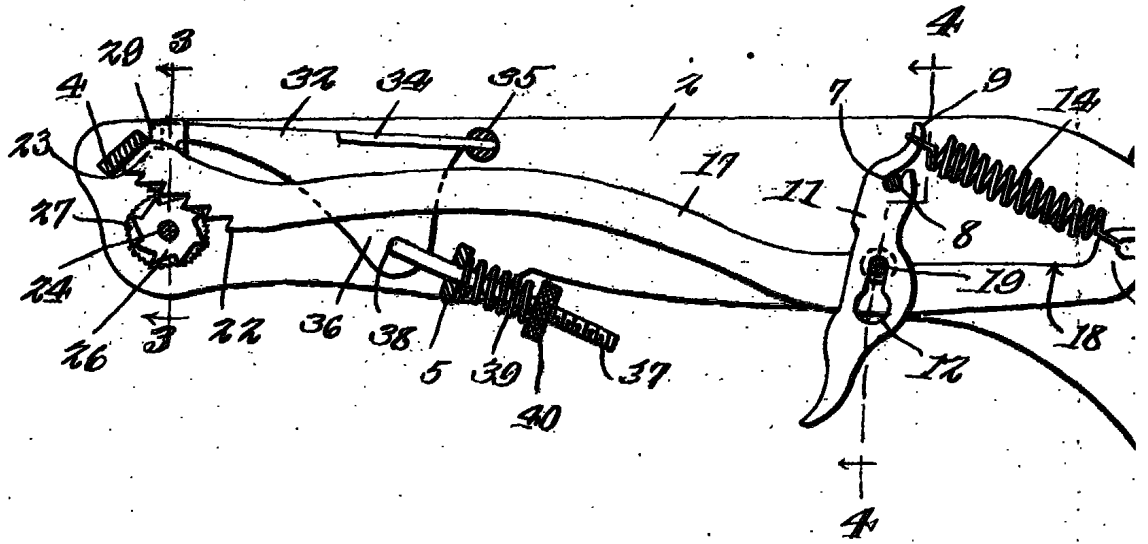


Fig. 2.

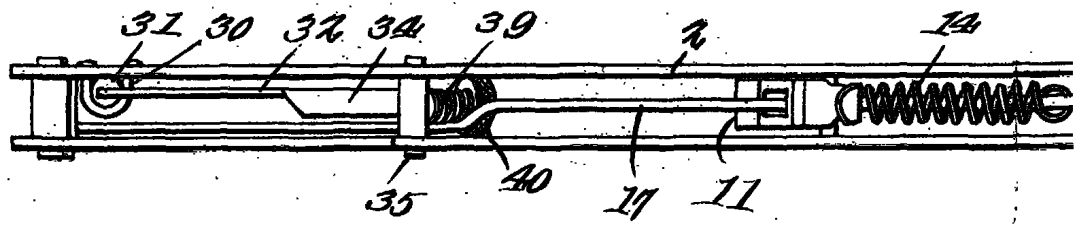
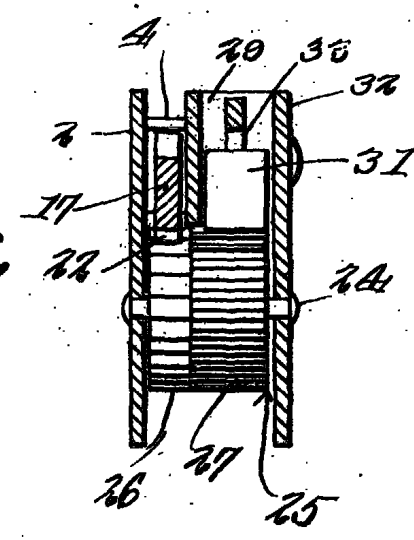


Fig. 3.



[This Drawing is a reproduction of the Original on a reduced scale.]

Fig. 4.

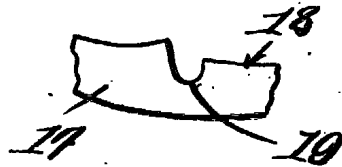
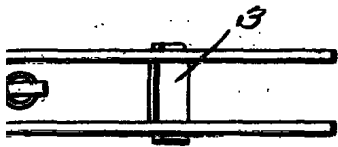
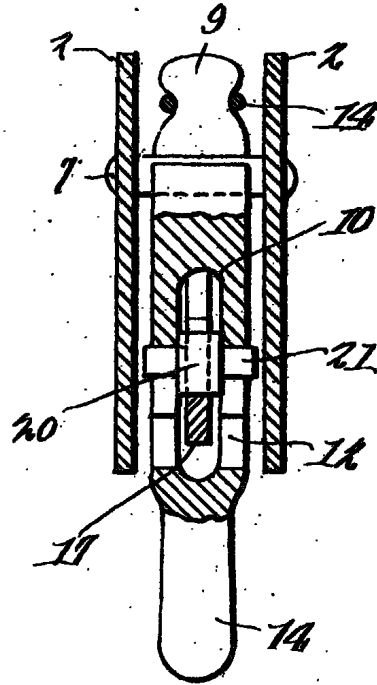
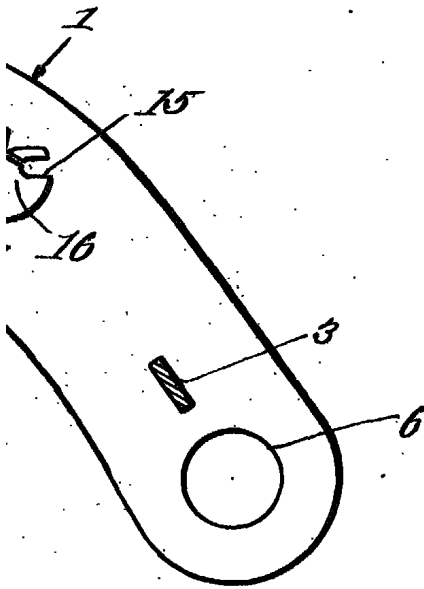


Fig. 5.

