

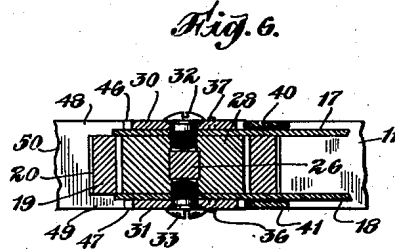
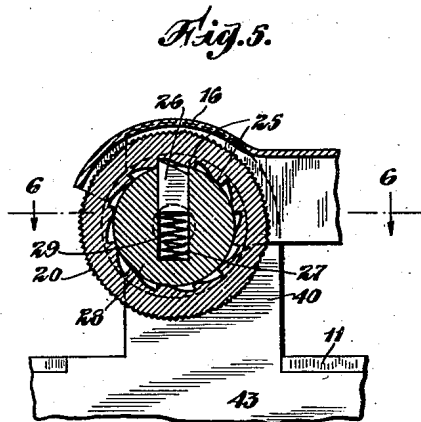
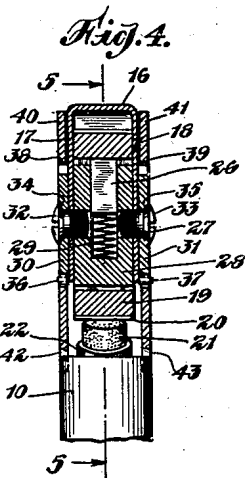
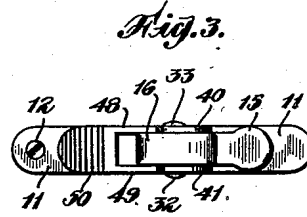
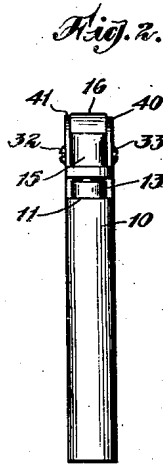
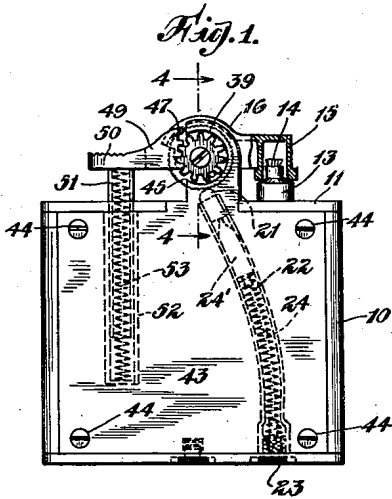
Feb. 10, 1931.

L. V. ARONSON

1,792,350

LIGHTER

Filed June 19, 1928



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UNITED STATES PATENT OFFICE

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LIGHTER

Application filed June 19, 1928. Serial No. 286,579.

This invention relates to cigar lighters or the like, and the main object of the invention is to provide an improved form of lighter in which the construction is simpler and more compact than hitherto, whereby a less bulky article is produced.

Further and more specific objects, features, and advantages will more clearly appear from the detail description given below, taken in connection with the accompanying drawings which form part of this specification, and which illustrate one embodiment of the invention and wherein:

Fig. 1 is a side elevation of the lighter with the snuffer broken away, and with certain interior parts being shown in dotted lines;

Fig. 2 is an end elevation;

Fig. 3 is a plan view;

Fig. 4 is an enlarged section taken on the line 4—4 of Fig. 1;

Fig. 5 is a section taken on the line 5—5 of Fig. 4; and

Fig. 6 is a section taken on the line 6—6 of Fig. 5.

As shown, the device comprises a thin casing or receptacle 10 having a top plate 11 fastened thereto by any suitable means such as a screw 12 (see Fig. 3). From the top plate 11 extends a tube 13 from which a wick 14 projects. This wick 14 extends into the receptacle 10 and becomes saturated with combustible liquid contained therein. Over the wick 14 a snuffer member 15 is normally disposed. Connected to the snuffer member 15, and forming part thereof, is a U-shaped housing comprising a top wall 16 and spaced side walls 17 and 18 which act as guard plates over the top and sides of a sparking device hereinafter described.

Disposed within the housing 16, 17 and 18 of the snuffer member 15 is a hollow abradant member such as the wheel or ring 19 having teeth 20 adapted to strike sparks upon being rotated in contact with a pyrophoric member 21 slidably disposed in and projecting from a tube 22 extending from the top of the plate 11 to the bottom of the receptacle 10 and closed at its lower end by a screw cap 23. A spring 24 acting on a head 24'

in tube 22 forces the pyrophoric member 21 against the teeth 20, and the inclination of the top of the tube 22 is such as to cause the pyrophoric member 21 to contact with the wheel 20 on one side of a vertical line drawn through the axis of the ring 19 and between said line and the wick 14. The ring 19 is rotated to throw sparks along a line toward the wick 14.

On the inner face of the abradant ring 19 are ratchet teeth 25 engaged by a beveled pawl 26 slidably disposed in a recess 27 in a rotatable member such as the cylinder 28 located within the ring 19 and backed by a spring 29 tending to hold it in contact with teeth 25. The teeth 25 and the beveled face of pawl 26 are so related that rotation of member 28 in one direction will rotate the ring 19 with it, but rotation of member 28 in the opposite direction will not move the ring 19 which will then remain stationary in frictional contact with the pyrophoric member 21. The member 28 is loosely housed within the ring 19, the thickness of which is slightly less than the distance between the lateral plates 17 and 18 of the snuffer member 15 so that it is freely rotatable therebetween.

Outside the lateral plates 17 and 18 are disposed pinions 30 and 31. In order to hold the pinions 30 and 31, the lateral plates 17 and 18, and the rotatable member 28 rigidly together as a unit, they are provided with aligned bores to receive screws 32 and 33, the heads of which are disposed in counter-sinks 34 and 35 on the faces of the pinions 30 and 31. As an additional means to tie the lateral plates 17 and 18 to the pinions 30 and 31 and to cause them to rotate therewith, ears 36 and 37 are struck from these plates and lie between the teeth of the pinions 30 and 31.

This unit formed by the snuffer member 15 with its lateral plates 17 and 18, the ring 19, the rotatable member 28, and the pinions 30 and 31, is pivotally supported in circular bearing openings 38 and 39 formed in upward extensions 40 and 41 of side plates 42 and 43 of receptacle 10 and fastened thereto by screws 44. The pinions 30 and 31

act as journals for the unit and lie in the circular openings 38 and 39 which act as bearings and which are just large enough to receive the pinions 30 and 31. The thickness of the pinions 30 and 31 and the extensions 40 and 41, are substantially the same. By this manner of arranging and supporting the unit the width of the device can be reduced so that it can be made thinner and less bulky than hitherto. One side of each of the bearing openings 38 and 39 is cut away as at 45, to expose a portion of the teeth on pinions 30 and 31. Meshing therewith are teeth 46 and 47 on spaced rack plates 48 and 49 on an operating member 50. Member 50 is mounted on a tube 51 telescopically engaging a tube 52 within the receptacle 10 and held upward by a spring 53.

In the operation of the device, the parts are normally in the position shown in Fig. 1, and when it is desired to ignite the lighter, the member 50 is depressed against the action of spring 53, thus moving the rack teeth 46 and 47 downwardly, thereby rotating the pinions 30 and 31 in the bearing openings on plates 40 and 41. These pinions act as journals for the sparking and snuffing unit of which they form a part. This unit is therefore rotated upon the depression of member 50 to lift the snuffer member 15 from the wick 14 and at the same time to rotate the abradant ring 19 causing its teeth 20 to strike sparks in the direction of the wick 14. The ratchet and pawl connection between the abradant ring 19 and the rotatable member 28 will cause the ring 19 to be moved when the member 50 is so depressed. After the depression of this member and when it is released, the spring 53 will throw it upwardly thus causing the pinions 30 and 31 to be rotated in the opposite direction to return the snuffer member 15 to its normal position to extinguish the lighter. In this movement of the parts, the abradant ring 19 will not be moved, the pawl 28 in this case sliding over the teeth 25.

By arranging the pawl 26 and ratchet teeth 25 within the abradant ring 19 and by providing the extension plates 40 and 41, mounted on the plates 42 and 43, in the same plane with the sides of the receptacle 10, and by providing these extensions with bearing openings, and then utilizing the operating pinions 30 and 31 as journal members for the unit with which they are associated, the construction is simplified and the width of the assembled parts can be considerably reduced, whereby the device can be made simple, compact and considerably thinner than heretofore. To disassemble the device merely requires removing the screws 32 and 33, whereupon the pinions 30 and 31 will drop off, the member 50 will be released and the snuffer member 15 with its lateral plates 17 and 18 can be separated from the abradant ring 19

and the rotatable member 28. When this takes place the rotatable member 28 can be slipped laterally out of the ring 19 and thus the entire operating assembly above the top of the receptacle 10 can be inspected, cleaned, and repaired.

Various other forms and other features of my invention are disclosed and claimed in my Patent No. 1,673,727, dated June 12, 1928, and in my copending applications Ser. No. 176,159, filed March 17, 1927, and in Ser. No. 196,255, filed June 3, 1927 (the latter being now involved in interference proceedings).

While I have described my improvement in detail and with respect to a preferred form thereof, I do not desire to be limited to such details or form since many changes and modifications may be made and the invention embodied in other forms without departing from the spirit and scope of the invention in its broader aspects. Hence, I desire to cover all modifications and forms coming within the language or scope of any one or more of the appended claims. What I claim as new and desire to secure by Letters Patent, is:

1. A lighter having a snuffing and sparking unit comprising a snuffing member, plates extending therefrom, an abradant ring disposed between said plates, a rotatable member disposed within said ring, means forming a unidirectional drive between the ring and the rotatable member, pinions disposed laterally of said plates, means for fastening said pinions, said plates, and said rotatable member together, and means on the plates engaging said pinions respectively to cause them to move together.

2. A lighter having a snuffer and sparking unit comprising a snuffing member, a sparking means, and means for operating the sparking means, plates extending from said snuffing member and embracing said operating means, pinions disposed laterally of said plates, means for fastening said plates, said operating means, and the pinions together, a casing, spaced bearing plates extending upwardly therefrom and having bearing openings therein, said pinions lying in said openings and acting as journals for said unit, and means engaging said pinions to operate said unit.

3. In a lighter, a casing, bearing plates extending above the top of the casing and having bearing openings therein, a sparking unit above said casing, pinions fastened to the sides of said unit, said pinions being disposed in said bearing openings and acting as journals for said unit, and operating means engaging said pinions to rotate said unit.

4. In a lighter, a casing, bearing plates extending above the top of the casing and having bearing openings therein, a sparking unit above said casing, pinions fastened to the sides of said unit, said pinions being disposed

in said bearing openings and acting as journals for said unit, and operating means engaging said pinions to rotate said unit, a portion of said bearing plates being cut away to expose the teeth of the pinions for engagement with the operating means.

5 5. A lighter having a pivoted snuffing member, an abradant ring rotatable about the axis of said snuffing member, a rotatable member within said ring, means whereby rotation of said rotatable member will cause rotation of the ring in only one direction, a pinion on each side of said rotatable member, and means to fasten the pinions and the rotatable member together.

15 6. A lighter having an abradant ring, a rotatable member within said ring, means whereby rotation of said rotatable member will cause rotation of the ring in only one direction, a snuffer having plates on each side of the rotatable member, a pinion on the outside of each plate, means to fasten the pinions, the plates, and the rotatable member together, each plate having an ear turned between the teeth on its adjacent pinion to cause the plates to move with the pinions.

20 7. A lighter having a casing with side and top walls, bearing plates extending above the top wall substantially in the plane of the side walls, said plates having bearing openings therein, a sparking unit pivotally mounted above said top wall, and pinions fastened to the sides of said unit and lying in said openings and acting as journals for said unit.

25 8. A lighter having a casing with side and top walls, bearing plates extending above the top wall substantially in the plane of the side walls, said plates having bearing openings therein, a snuffer and sparking unit pivotally mounted above said top wall, pinions fastened to the sides of said unit and lying in said openings and acting as journals for said unit, portions of said bearing plates being cut away to expose the teeth of said pinions, and means engaging said teeth to rotate said pinions.

30 9. A lighter comprising a casing, a pivoted snuffing member having depending spaced plates, an abradant ring disposed between said plates and rotatable about the axis of said snuffing member, a member rotatable within said ring, means forming a uni-directional drive between said ring and said rotatable member, a knob manually operable above the top wall of said casing for oscillating said snuffing member and said rotatable member, and means forming a connection between said knob and said snuffing member.

35 10. A lighter comprising a casing and having a snuffing and sparking unit comprising a snuffing member, plates extending therefrom, an abradant ring disposed between said plates, a rotatable member disposed within said ring, means forming a uni-directional drive between the ring and the rotatable member, pinions having operating sections

disposed laterally of said plates, said pinions, said plates and said rotatable member being fastened together for oscillatory movement as a unit, and a knob manually operable above the top wall of said casing to oscillate said pinions, said plates and said rotatable member, said knob having sections connected to the respective pinions.

In testimony whereof I have signed my name to this specification.

LOUIS V. ARONSON.

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