Sept. 26, 1950 G. W. MARTIN 2,523,510

LIGHTER

Filed Nov. 1, 1947

Fig. 1.

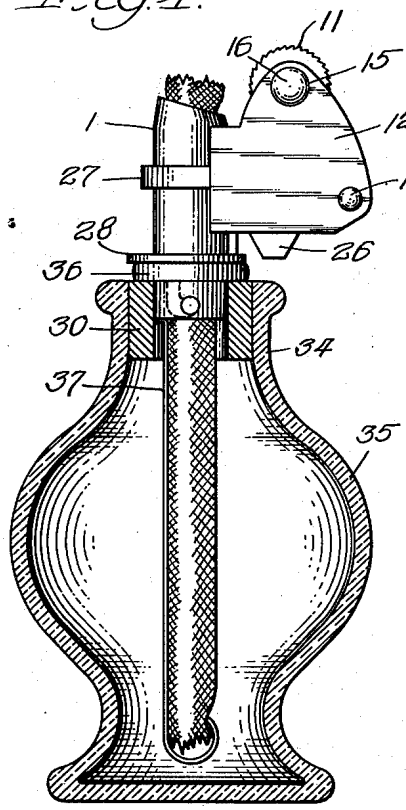


Fig. 2.

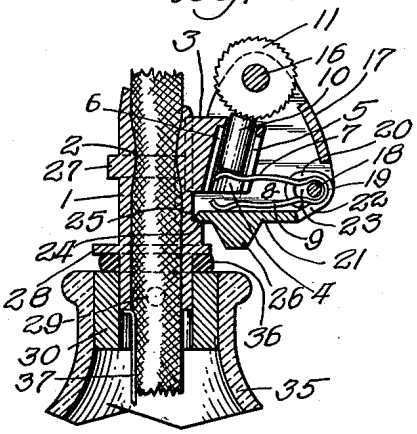


Fig. 3.

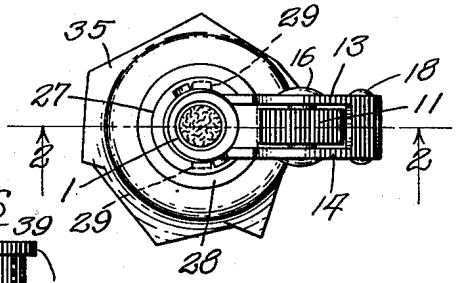


Fig. 6

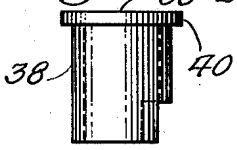


Fig. 5.

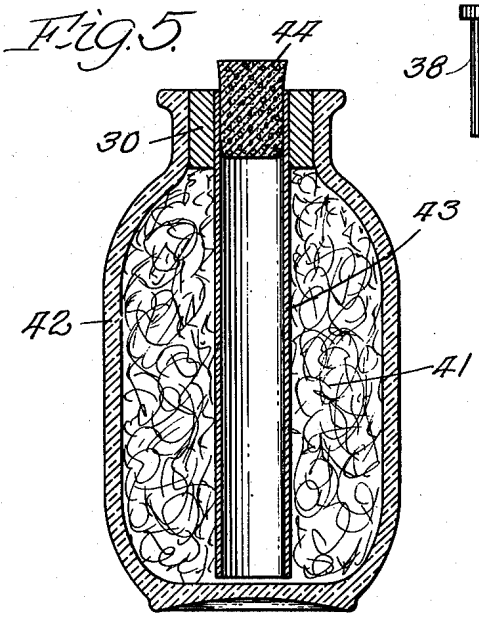
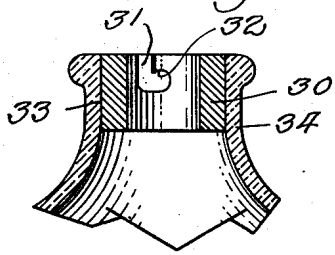


Fig. 4.



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UNITED STATES PATENT OFFICE

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LIGHTER

Glen W. Martin, Chicago, Ill.

Application November 1, 1947, Serial No. 783,575

3 Claims. (Cl. 67—4.1)

1

The present invention relates to an improved lighter for lighting cigarettes, cigars, pipes and the like.

Among the objects of my invention are: to provide a novel lighter of the type referred to; to provide a lighter having improved means for urging a flint against a friction wheel; to provide a lighter having a swingable and slidable supporting arm for compressing a spring for forcing a flint against a friction wheel; to provide novel means for holding the spring compressing plate or arm in operable position and enabling quick opening of said plate or arm for supplying a new flint, or new spring; to provide novel means for detachably securing the lighter to the neck of a fuel container; to provide novel means for sealing the lighter to the neck of a fuel container; and such further objects, advantages and capabilities, inherently possessed by my invention, as will later more fully appear.

My invention further resides in the combination, construction and arrangement of parts illustrated in the accompanying drawing, and while I have shown therein a preferred embodiment I wish it understood that the same is susceptible of modification and change without departing from the spirit of my invention.

In the drawings:

Fig. 1 is a side elevation, partly in section, of a lighter embodying my invention, and showing the same applied to an ornamental fuel container.

Fig. 2 is a vertical section of the lighter of Fig. 1, taken on line 2—2 of Figure 3, showing the same applied to the neck portion of a fuel container.

Fig. 3 is a top plan view of Fig. 2.

Fig. 4 is a fragmentary vertical section of the neck portion of a fuel container showing an attaching collar secured therein.

Fig. 5 is a vertical section of a modified form of fuel container having the attaching collar secured therein.

Fig. 6 is a side elevation of a snuffing cap adapted to be applied over the wick and top end of the lighter.

My improved lighter, as shown in the drawing for illustrative purposes, comprises a wick tube 1 having in the interior of the wick opening a restriction 2 for preventing too easy removal of the wick, and for slightly compressing the same. The wick of this lighter is preferably of considerable diameter and the restriction 2 insures that the wick will at all times be properly held in position and yet permit the wick to be pulled outwardly a short distance when required. The top

2

end of wick tube 1 is inclined downwardly toward the flint wheel 11 to direct the normal fraying of the wick toward the flint wheel. Fixed to the wick tube 1, to extend laterally therefrom, is a projection 3 formed with an upwardly extending opening 4 preferably at a slight angle with the vertical. Formed in the wall of the opening 4, at its front and rear sides, is a pair of diametrically oppositely positioned slots 5 and 6 closed at their upper ends, these slots being adapted to slidably receive the upper arm 7 of a generally V-shaped spring indicated at 8 and also having a lower arm 9 positioned below upper arm 7 and of substantially the same length.

The upwardly extending opening 4 is adapted to slidably receive a flint 10 with its upper end contacting the roughened friction wheel 11. Fixed either to the wick tube 1 or to the laterally extending projection 3, or both if desired, is a housing 12 having two parallel side walls 13 and 14, which walls at their upper portions each project upwardly at 15 and are provided with alined apertures to receive the short shaft or pin 16 upon which the friction wheel is rotatably mounted.

Housing 12 preferably extends a distance beyond the outer side of projection 3, and is formed with an integral cross bar 17 to brace the outer edges of the side walls. Cross bar 17 terminates at its upper end below the friction wheel so as to leave room for convenient rotation thereof. This cross bar also terminates at its lower end upwardly of the bottom edge so as to leave room for the fulcrum pin 18, the closed end 19 of the spring member, and the curled-over ears 20 formed at the rear end of the supporting arm or plate 21.

Pin 18 is fixed at its opposite ends in the side walls 13 and 14 just inside of the open space 22 between the lower edge of rear wall or cross bar 17 and the supporting arm 21, to enable access to, and observation of, the V-shaped spring 8. As will be noted the ears (one on each side of spring 8) are each formed with a somewhat elongated slot 23 to permit the ears 20 to have a slight forward and rearward movement so that supporting arm 21, which is integral with said ears, will have a corresponding movement.

Formed on the adjacent side of wick tube 1 is a shoulder 24 over which the free end 25 of the supporting arm 21 may be positioned when the supporting arm is slid thereover. As will be seen in Fig. 2 the spring member 8 has its upper leg 7 pressing upwardly against the flint and its lower leg 9 pressing downwardly against supporting

arm 21. This simultaneously accomplishes two purposes, first, it presses the flint against the friction wheel and, second, it keeps the spring in position which presses the free end 25 of the supporting arm against shoulder 24 and frictionally holds it thereon. Formed on the lower face of supporting arm 21 is a projection 26 which may be readily grasped by the fingers of the operator to move the supporting arm inwardly or outwardly as desired. By virtue of the mounting of the laterally spaced ears 20 on the fulcrum pin 18, the supporting arm, when moved rearwardly to clear shoulder 24 will swing downwardly to expose the hollow interior of housing 12 to enable a new flint 19 to be inserted therein and/or a new spring, as desired. As seen in Fig. 2, the upper leg 7 of the spring moves upwardly along the slot 5 as the flint is slowly consumed during use. Also as the upper leg 7 of the spring moves further upwardly because of extreme shortness of the flint, the free end of said upper leg will enter slot 6.

Preferably the wick tube 1 is formed directly opposite the intermediate portion of the inner edges of the side walls 13 and 14 of the housing, with an annularly extending rib 27 to support the snuffing cap as later explained. The wick tube is also formed slightly above its lower end with an outstanding annular flange 28. Fixed to protrude on each side of the bottom end portion of the wick tube is a short pin 29, these pins being diametrically opposite each other. Adapted to have the bottom end of the wick tube slidably inserted thereinto is a collar 30 (see Figs. 1, 3 and 4) which collar has a central cylindrical opening and is formed on each of its diametrically opposite inner sides with a bayonet slot 31 having a laterally extending end 32 to receive said pins 29 when they are inserted downwardly in slots 31 and rotated into slots 32. Collar 30 is adapted to be fixed in any desired manner at 33 within a neck 34 of a fuel container 35, which may be of any ornamental material and design. Provided around the wick tube just below the annular flange 28 is a sealing ring 36 preferably of neoprene, but which may, if desired, be formed of any other sealing material suitable for the purpose.

Assuming the collar 30 to be fixed in the neck of the fuel container, the lower end of the wick tube may be inserted into the collar with pins 29 in alinement with slots 31 and the wick tube and its associated parts of the lighter pushed downwardly to compress the sealing ring 36, after which the wick tube and lighter may be rotated to bring pins 29 into fastened engagement with the slots 32. Neoprene being of such nature as not to be detrimentally attacked by lighter fluid, forms a very successful seal for this purpose, and prevents leakage of the liquid fuel.

As seen in Fig. 1 a wire or other metal stiffening strip 37 may be fixed to the lower end of the wick tube and extend downwardly along the side of the wick with any suitable connection between the wick and the wire at or near the bottom, so as to more suitably maintain the wick in a straight condition. The fuel container 35 may comprise any suitably shaped ornamental container of glass, plastic or the like, which, when the lighter is attached thereto as shown in Figs. 1–3, may be placed upon the living room table or other support, and form an ornament for the home, and at the same time with the lighter will be of useful nature, pleasing in appearance, and handy for lighting cigarettes, cigars and the like.

As shown in Fig. 6 I have provided a cap 38 which may be easily and quickly placed over the top end of the wick tube to extinguish or snuff the flame, which cap will be appropriately formed to pass over the adjacent portion of the housing 12 and lateral projection 3, and rest at its bottom end on the shoulder 27. This cap will be of an interior size to be easily and quickly applied to and removed from the wick tube, and is formed at its top with a disk cover 39 extending at 40 beyond the side walls to be easily grasped, and provide an ornamental appearance.

The fuel container 35 may be of any desired shape and may if desired have cotton or other absorbent material positioned inside thereof as shown at 41 in Fig. 5. A container of different shape than that shown in Fig. 1 is shown at 42 in Fig. 5 and if desired may have a tube of metal, plastic or other suitable material extending downwardly through the collar 30 to near the bottom of the interior of the container, and receive at its upper end a cork 44 while the container is being displayed in stores or elsewhere as desired. Assuming the container to be filled with lighter fluid, all that is necessary is to remove the cork 44, pull out the tube 43, and insert the bottom end of the wick into the hole in the absorbent left by the tube, and then insert the pins 29 into the bayonet slots. Use of the tube 43 while the fuel filled container is being handled in the stores for sale, maintains a cylindrical opening in the center of the absorbent material 41 so that when tube 43 is removed at the time of use, said central hole will be preserved, and the absorbent material will be prevented from being crowded into said opening to embarrass the insertion of the wick therein when applying the lighter to the container. When the fuel container 42 is filled with lighter fluid without any absorbent material, the tube 43 may be omitted as suggested in Fig. 1.

Having described my invention I claim:

1. A lighter having a wick tube and a laterally extending projection formed with a flint-receiving opening, a hollow housing fixed with relation to said projection and extending laterally therebeyond, said housing having upwardly extending side walls in the upper end portions of which is rotatably mounted a friction wheel, a fulcrum pin extending between said side walls in the lower outer corner of the housing, a supporting plate member having a pair of fulcrum ears seated over said pin to swingably support the supporting plate member, each of said ears having an elongated slot to enable longitudinal sliding movement of the supporting plate member, and a V-shaped spring having its closed end seated over said pin, the wall of said flint-receiving opening having a slot within which one of the legs of said spring moves to press against a flint, a shoulder on the wick tube on which the free end of the supporting plate member seats when said supporting plate member is slid toward the wick tube, the other leg of the spring bearing against the supporting plate member to releasably hold said free end on the shoulder and permit it to be slid away from the wick tube to swing the supporting plate member away from the bottom of the housing.

2. In a lighter including a wick tube adapted to hold a wick with one end of the wick projecting therefrom, a flint tube adjacent the wick tube adapted to hold a flint for sliding movement therein with one end of the flint exposed adjacent the projecting end of the wick, and an abra-

sive wheel rotatably mounted adjacent the wick tube and normally in contact with the exposed end of the flint, apparatus comprising: a plate member adjacent the end of said flint tube that is opposite said abrasive wheel; a fulcrum pin spaced from said end of the flint tube that is opposite said wheel, said plate member being hingedly mounted at an end thereof about said pin and having a lost motion connection on said pin to permit longitudinal movement of said plate member with respect to said pin; a support adjacent the end of said plate member that is opposite said pin and also adjacent said opposite end of the flint tube, said plate member being normally held against said support but being movable out of engagement with said support on longitudinal movement of the plate member and then rotational movement of the plate member away from the flint tube to expose said opposite end of the flint tube; and a spring normally bearing against said flint to hold it against said wheel and normally bearing against said plate member to hold it in engagement with said support, said spring being released from said flint and said plate member on movement of the plate member out of engagement with said support.

3. In a lighter including a wick tube adapted to hold a wick with one end of the wick projecting therefrom, a flint tube adjacent the wick tube adapted to hold a flint for sliding movement therein with one end of the flint exposed adjacent the projecting end of the wick, and an abrasive wheel rotatably mounted adjacent the wick tube and normally in contact with the exposed end of the flint, apparatus comprising: a plate member adjacent the end of said flint tube that is opposite said abrasive wheel, said plate member having a pair of fulcrum ears; a hinge pin engaged by said ears with each ear having an elongated slot surrounding said pin to permit longitudinal sliding movement of said plate member with respect to said pin; a support adjacent the opposite end of said plate member and adjacent said opposite end of the flint tube and against which said plate member is normally held, said plate member being movable out of engagement with said support to expose said opposite end of the flint tube by longitudinal sliding movement of said plate member relative to said pin and then rotary movement of the plate member around said pin and away from said opposite end of the flint tube; and a V-shaped spring having a middle portion passing around said hinge pin, one leg portion extending through a slot in said flint tube to bear against said flint and hold it against said wheel, and having the other leg portion normally bearing against said plate member to hold it in frictional engagement with said support and said pin, said spring being released from said flint and said plate member on said longitudinal movement of the plate member out of engagement with said support and said rotation around said hinge pin in a direction away from said flint tube.

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REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
1,033,801	Herlinger	July 30, 1912
1,874,219	Aronson	Aug. 30, 1932
2,122,624	Sauer	July 5, 1938
2,132,004	Kovac	Oct. 4, 1938
2,424,781	Vanetzian	July 29, 1947

FOREIGN PATENTS

Number	Country	Date
378,909	Great Britain	Aug. 15, 1932
426,098	France	Apr. 22, 1911
526,333	France	June 29, 1921
648,280	Germany	July 27, 1937
656,527	France	Jan. 2, 1929
789,239	France	Aug. 12, 1935