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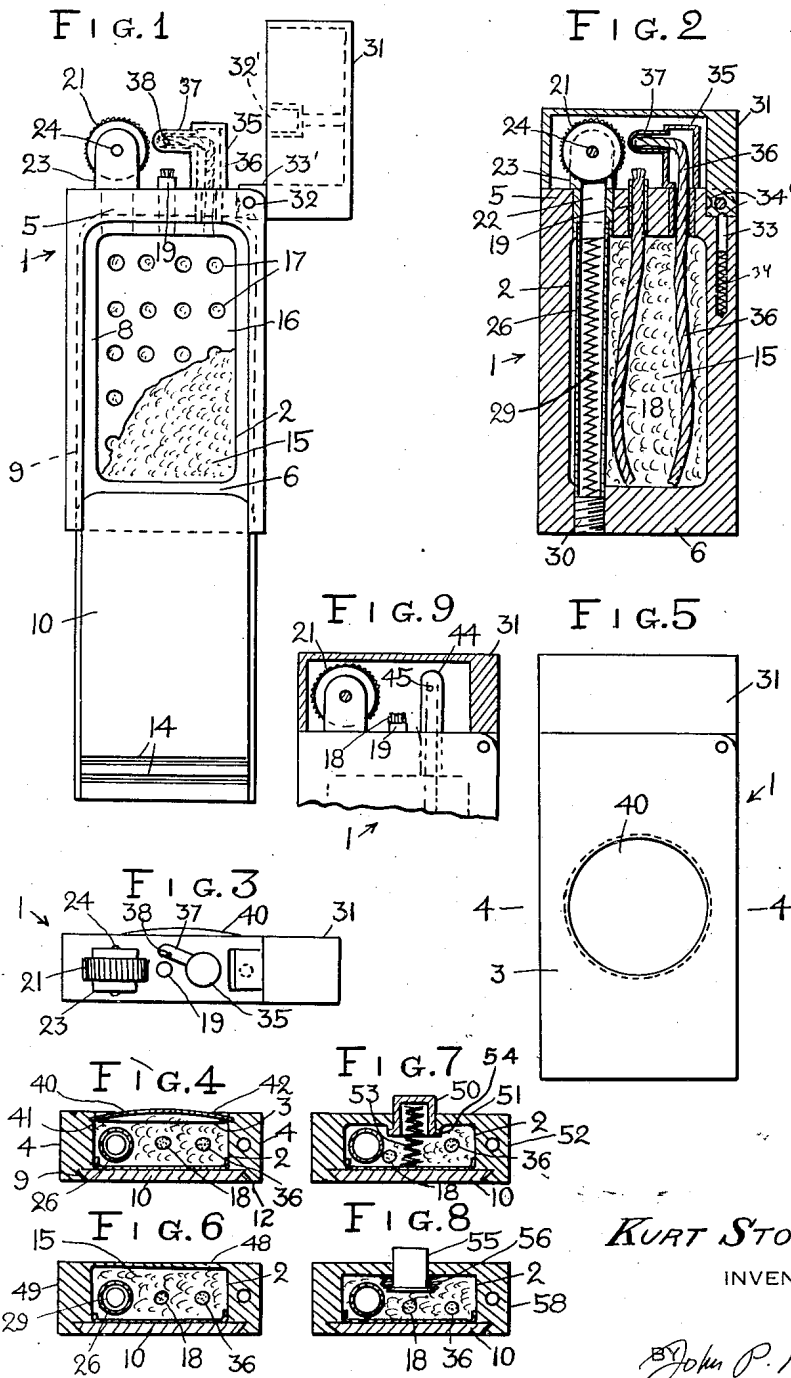
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2,469,248

CIGARETTE AND PIPE LIGHTER

Filed Jan. 26, 1946

2 Sheets-Sheet 1



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2 Sheets-Sheet 2

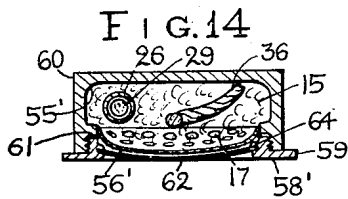
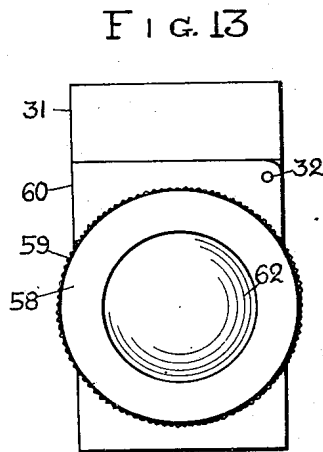
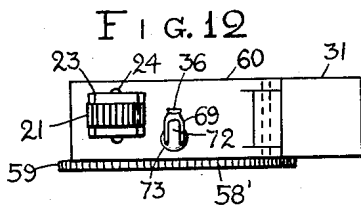
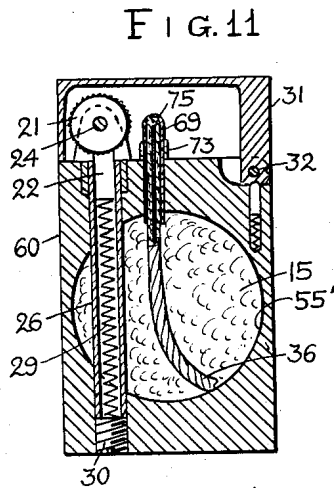
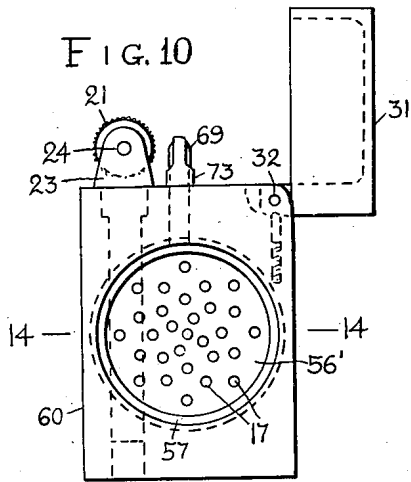


FIG. 16

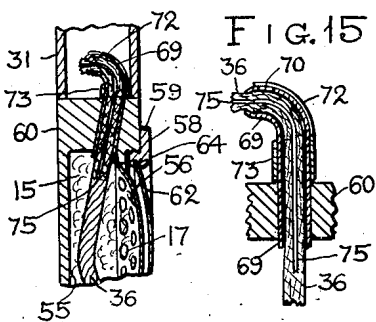
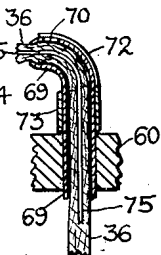


FIG. 15



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CIGARETTE AND PIPE LIGHTER

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Application January 26, 1946, Serial No. 643,623

12 Claims. (Cl. 67—7.1)

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My invention relates to cigarette and pipe lighters and has particular reference to portable lighters employing steel wheels and flint blocks for producing sparks which ignite a wick saturated with a liquid fuel.

My invention has for its object to provide a cigarette and pipe lighter of the foregoing general type in which means are provided for producing an additional jet of flame extending at an angle to the body of the lighter so that this jet of flame can be directed into the bowl of a pipe for igniting the tobacco therein.

An allied object of my invention is to provide means for controlling the jet of flame at will by manually reducing the volume of the well in which the liquid fuel is held thereby ejecting a small quantity of the liquid fuel in the form of a burning jet.

My invention can be used with any conventional cigarette lighters but is especially suitable for combining with my cigarette lighter as described in my abandoned patent application Serial No. 621,967, filed October 12, 1945.

The foregoing and other objects and features of my invention are more fully described in the accompanying specification and drawing in which—

Fig. 1 is a side view of my cigarette and pipe lighter partly in section, with the top cover in an opened position and with the side cover for the fuel partly withdrawn.

Fig. 2 is a sectional elevational view of the lighter with the top cover in a closed position.

Fig. 3 is a top view of the same with the top cover in an opened position.

Fig. 4 is a sectional view taken on the line 4—4 of Fig. 5.

Fig. 5 is a rear view of the lighter showing a resilient diaphragm;

Fig. 6 is a transverse sectional view of a modified lighter having a resilient rear wall;

Fig. 7 is a sectional view of another modification having a plunger in the rear wall;

Fig. 8 is another modification showing a collapsible bellows operated by a plunger in the rear wall;

Fig. 9 is a fractional sectional view of still another modification in which a modified form of a jet nozzle is shown;

Fig. 10 is a front view of a modified device with the front cover removed;

Fig. 11 is a sectional view of the same;

Fig. 12 is a top view showing the device with the cover removed;

Fig. 13 is a front view of the device with the cover in its place;

Fig. 14 is a sectional view taken on the line 14—14 of Fig. 10;

Fig. 15 is an enlarged detail view of the wick and the tube supporting the wick;

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Fig. 16 is a fractional sectional view of the wick and the outer tube for the same.

My cigarette and pipe lighter as shown in Figs. 1 to 5 inclusive comprises a body 1 which may be made of a suitable metal such as aluminum or its alloy, or of a plastic composition. The body 1 has a large recess or well 2 at the side enclosed by a rear wall 3, side walls 4, a top wall 5, and a bottom wall 6. The walls are recessed at the front, forming shoulders 8 and dovetailed slots 9 for a correspondingly shaped front cover plate 10. The plate 10 has tapering edges 12 at the sides and at the top, slidably and snugly engaging the dovetail slots 9 for closing the well 2. Grooves 14 at the rear of the cover plate 10 are provided for moving the plate 10 by any suitable implement such as a pen knife or even a finger nail. This feature is important because the well 2 is used as a storage for a fuel which must be replaced from time to time. To prevent spilling or leakage of the liquid from the well 2, the latter is filled with an absorbent cotton 15 covered on the outside by a thin metal plate 16 with holes 17 through which the fuel can be added to the space in the well. As may be seen in Fig. 1, the well 2 is fully open when the cover plate 10 is moved downwards so that fuel can be poured directly into the well from a bottle or other fuel container, and it is not necessary to use a pipette or a similar device. A wick 18 is placed under the cotton and extends to the outside through a short pipe 19 fitted in the upper wall 5.

The sparks are produced by a knurled steel wheel 21 of an ordinary construction, and a flint cylinder 22 (Fig. 2). The wheel 21 is rotatively supported in a bracket 23 on a pin 24. The bracket is fitted in a corresponding hole in the top wall 5 of the body 1, which is provided with a hole for a pipe 26 whose other end is fitted in the lower wall 6. The flint 22 slides in the pipe 26. The outer end of the pipe 26 is closed by a screw plug 30 threaded in the bottom wall 6. A spring 29 is placed in the pipe 26 between the plug 30 and the flint 22.

A hollow cover 31 is pivotally supported at 32 on the body 1 for covering the wheel 21, and is provided with a cap 32' for covering the upper end of the pipe 19 with the exposed end of the wick 18. The cover is yieldingly held in a closed or open position by a plunger 33 urged by a spring 34 and engaging holes 34' in lug 33' on the cover 31.

The operation of my device for lighting cigarettes is similar to the operation of ordinary lighters, the wheel 21 being rotated for this purpose by a user's finger, thereby producing sparks directed against the exposed end of the wick 18 and igniting the same.

It may be observed that the well 2 can hold a relatively large amount of the fuel so that my

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lighter need not be refilled very frequently; moreover, the refilling operation is very simple and does not require any special instruments or appliances.

For lighting pipes my lighter is provided with an added attachment consisting of a tube 35 extending from the well 2 through the upper wall 5 for a second wick 36. A horizontal pipe 37 is fitted in the upper portion of the tube 35, closed at the outer end and provided with a small hole 38 at the side forming a nozzle. The short nozzle pipe 37 is directed at an angle to the body 1 as shown in Fig. 3 so that it does not obstruct the flame from the wick 18. The hole 38 is directed to the side of the body 1 at an angle thereto so that the flame can be conveniently directed into the bowl of a pipe.

The jets of flame can be produced immediately after the wick 18 is lighted, by manually compressing the space in the well 2, thereby ejecting a fine stream of the fluid through the nozzle opening 38. The rear wall 3 is provided for this purpose with a convex flexible diaphragm 40, fitted in a circular opening over a shoulder or flange 41. The diaphragm is retained in place by rolling over or swaging the edges of the hole around the diaphragm at 42. By squeezing the lighter between the operator's fingers, the diaphragm is depressed, compressing the air in the well 2 and ejecting a stream of the fluid as was mentioned above, the stream being instantly ignited by the flame of the wick 18. The operation can be repeated if desired, obtaining a succession of burning jets of flame which can be conveniently used for lighting a pipe, a gas burner, or for any other purpose.

It should be noted that the nozzle tube 37 becomes rapidly heated and will then produce a steady jet of flame from the opening 38.

A single tube 44 can be employed with a jet hole 45 as shown in Fig. 9, the wick 36 extending to the top of the tube 44 where the hole 45 is located.

The diaphragm can be made integral with the body 1 as shown in Fig. 6, the rear wall 43 of body 49 being relatively thin so that it can be depressed like the diaphragm 40.

In a modified construction shown in Fig. 7 a plunger 50 slides in the wall 51 of the body 52 and is urged outwardly by a spring 53. A flange 54 retains the plunger in its outward position.

Another modification is shown in Fig. 8 in which a plunger 55 is attached to one edge of bellows 56, the other edge of the bellows being attached to the wall of the body 53.

In a modified device shown in Figs. 10 to 16 inclusive, the central chamber 55' is filled with the glass wool or similar material 15 which is covered by a cup-shaped perforated disc 56' having holes 17. The opening of the chamber 55' is closed by a threaded cap 58' in the form of a ring having a knurled periphery 59 so that it can be screwed in or removed by hand, the edges of the ring protruding beyond the sides of the casing 60 of the pipe lighter. A gasket 61 may be provided between the cap 58' and the seat for the same 57 in the casing 60. The middle portion of the cap 58' comprises a resilient convex diaphragm 62 whose peripheral edge is fastened at 64 to the ring 56'. The operation of this device is similar to the operation of the device shown in Fig. 1. With every depression of the diaphragm 62, a jet of flame is projected from the wick 36 supported in a tubular member 69 fitted

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in the upper wall of the casing 60. The tube 69 is bent at the upper portion for directing the wick to the side of the casing 60 so that the flame shoots off sidewise when the diaphragm 62 is depressed.

The cap 58' is unscrewed for refilling the chamber 55' with the combustible fluid. This construction has an advantage in that the diaphragm 62 can be easily replaced when it is damaged or worn out.

The wick 36 can be advanced in the tube when it burns out, through a hole 70 in the upper wall of the tube 69, (Fig. 15) using any suitable sharp-pointed tool for moving the wick. The hole 70 is normally closed by a resilient lid 72 extending from a tube 73 rotatively mounted on the tube 69. By turning the tube 73 to the side, the hole 70 is opened for insertion of a sharp-pointed tool when it is desired to advance the wick in the tube 69.

For increasing the length of the flame when the diaphragm 62 is depressed, a capillary tube 75 is inserted into the wick 36 so that there is always a certain amount of the combustible fuel in the outer end of the capillary tube 75 for increasing the efficiency of the jet of the flame produced by the operation of the diaphragm 62.

It will be understood that various features and principles of each of the embodiments of the invention above described or referred to may be utilized or substituted in the other embodiments.

While the invention has been described in detail with respect to certain particular preferred examples, it will be understood by those skilled in the art after understanding the invention, that various changes and further modifications may be made without departing from the spirit and scope of the invention, and it is intended therefore in the appended claims to cover all such changes and modifications.

What is claimed as new and desired to be secured by Letters Patent is:

1. A cigarette and pipe lighter comprising a hollow body with a single compartment for both fuel and air required in producing a flame and having an opening for filling the body with a liquid fuel; a closure for the opening; a wick extending from the body to the outside adapted to be saturated with the liquid fuel; means on the body to ignite the wick; a tubular nozzle extending above the outer end of the wick having a closed end and a small side opening; and manually operable means forming a part of a wall of the body to compress the air in the hollow body for ejecting a jet of flame from the nozzle, the opening in the nozzle being so positioned as to cause the jet to be directed to the side of the body.

2. A cigarette and pipe lighter comprising a hollow body with a single compartment for both fuel and air required in producing a flame and having an opening for filling the body with a liquid fuel; a closure for the opening; a wick extending from the body to the outside adapted to be saturated with the liquid fuel; means on the body to ignite the wick; a tubular nozzle extending above the outer end of the wick having a closed end and a small side opening; a second wick extending from the hollow body into the tubular nozzle; and manually operable means forming a part of the wall of the body for compressing the air in the body thereby ejecting a jet of vaporized fuel from the nozzle, the opening of the nozzle being so positioned as to cause the jet to be ignited by the flame of the first wick.

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3. A cigarette and pipe lighter comprising a hollow body with a single compartment for both fuel and air required in producing a flame and having an opening for filling the body with a liquid fuel; a closure for the opening; a wick extending from the body to the outside adapted to be saturated with the liquid fuel; means on the body to ignite the wick; a tubular nozzle extending above the outer end of the wick having a closed end and a small side opening; a second wick extending from the hollow body into the tubular nozzle; one wall of the hollow body having a flexible portion adapted to be manually depressed for compressing the air in the hollow body thereby ejecting a jet of vaporized fuel from the nozzle, the opening of the nozzle being so positioned as to cause the jet to be ignited by the flame of the first wick.

4. A cigarette and pipe lighter comprising a hollow body with a single compartment for both fuel and air required in producing a flame and having an opening for filling the body with a liquid fuel; a closure for the opening; a wick extending from the body to the outside adapted to be saturated with the liquid fuel; means on the body to ignite the wick; a tubular nozzle extending above the outer end of the wick having a closed end and a small side opening; a second wick extending from the hollow body into the tubular nozzle; one wall of the hollow body having an opening; and a yieldable member supported in the opening adapted to be manually depressed for compressing the air in the hollow body thereby ejecting a jet of flame from the nozzle.

5. A cigarette and pipe lighter comprising a hollow body with a single compartment for both fuel and air required in producing a flame and having an opening for filling the body with a liquid fuel; a closure for the opening; a wick extending from the body to the outside adapted to be saturated with the liquid fuel; means on the body to ignite the wick; a tubular nozzle extending above the outer end of the wick having a closed end and a small side opening; a second wick extending from the hollow body into the tubular nozzle; one wall of the hollow body having a circular opening; and a convex flexible diaphragm supported in the opening adapted to be manually depressed for compressing the air in the hollow body thereby ejecting a jet of flame from the nozzle.

6. A cigarette and pipe lighter comprising a hollow body with a single compartment for both fuel and air required in producing a flame and having an opening for filling the body with a liquid fuel; a closure for the opening; a wick extending from the body to the outside adapted to be saturated with the liquid fuel; means on the body to ignite the wick; a tubular nozzle extending above the outer end of the wick having a closed end and a small side opening; a second wick extending from the hollow body into the tubular nozzle; one wall of the hollow body having a circular opening; and a plunger movably supported in the opening adapted to be manually operated for compressing air in the hollow body thereby ejecting a jet of flame from the nozzle.

7. A cigarette and pipe lighter comprising a hollow body with a single compartment for both fuel and air required in producing a flame and having an opening for filling the body with a liquid fuel; a closure for the opening; a wick extending from the body to the outside adapted to be saturated with the liquid fuel; a knurled steel wheel rotatively supported on the body; a

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flint cylinder engaging the wheel, the wheel being adapted to be manually rotated for producing sparks by the friction against the flint cylinder for igniting the wick; a tubular member extending from the body above the outer end of the wick; a nozzle with a closed end and an opening on the side of the tubular body; a second wick in the tubular body extending into the hollow body; a manually operable yieldable member forming a portion of the body adapted to compress the air in the hollow body when manually operated thereby causing a jet of vaporized fuel to be ejected from the nozzle, the nozzle being so positioned relative to the end of the first wick as to cause the jet to be ignited by the flame of the first wick.

8. A cigarette and pipe lighter comprising a substantially flat rectangular hollow body with a single compartment for both fuel and air required in producing a flame and having an opening at one side; a cover slidably fitted in the walls of the body for closing the opening, a fibrous material filling the space in the body, the space in the body between the fibers of the fibrous material being adapted to be filled with a liquid fuel; a tube extending from the body to the top thereof; a wick extending through the tube to the outside from the space in the body; a manually operable knurled wheel rotatively supported on top of the body near the end of the wick; a piece of flint yieldably pressed against the wheel for producing sparks when the wheel is rotated thereby igniting the end of the wick; a nozzle with a closed end and a small side hole mounted on the body; a second wick extending into the nozzle from the space in the body; and manually operable means on the wall of the body for compressing the air in the body thereby producing a thin jet of flame from the nozzle.

9. A cigarette and pipe lighter comprising a hollow body with a single compartment for both fuel and air required in producing a flame; a round opening at the side of the body; a cap threaded into the opening for closing the same; a flexible diaphragm forming a middle portion of the cap adapted to be manually depressed; a tube extending from the body; a wick in the tube adapted to be saturated with a liquid fuel contained in the body; means on the body to ignite the wick; and a capillary tube in the wick for conducting liquid fuel to the outer end of the wick.

10. A cigarette and pipe lighter comprising a hollow body with a single compartment for both fuel and air required in producing a flame; a round opening at the side of the body; a cap threaded into the opening for closing the same; a flexible diaphragm forming a middle portion of the cap adapted to be manually depressed; a tube extending from the body; a wick in the tube adapted to be saturated with a liquid fuel contained in the body; means on the body to ignite the wick, the tube having an opening for advancing the wick in the tube; and a removable cover for the opening in the wick tube.

11. A cigarette and pipe lighter comprising a hollow body with a single compartment for both fuel and air required in producing a flame; an inert fibrous material filling the body; a round opening at the side of the body; a round perforated disc covering the fibrous material in the body; a ring-shaped cover threaded into the opening for covering the same; a curved tube extending from the body to the outside; means on the body for igniting the fuel in the wick; a

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resilient flexible diaphragm forming a part of the cover adapted to be manually depressed for producing a jet of the flame at the outer end of the wick.

12. A cigarette and pipe lighter comprising a hollow body with a single compartment for both fuel and air required in producing a flame and having an opening for filling the body with a liquid fuel; a closure for the opening; a tube extending from the body; a wick in said tube adapted to be saturated with the liquid fuel; means on the body for igniting the wick; means associated with said tube and wick for directing a jet of flame at a predetermined angle; and a diaphragm forming a wall of the body adapted to be manually depressed for ejecting said fuel and producing said jet of flame.

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