

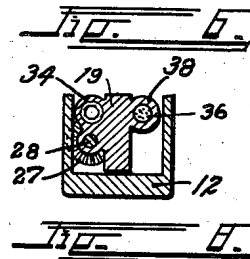
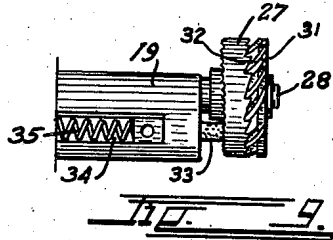
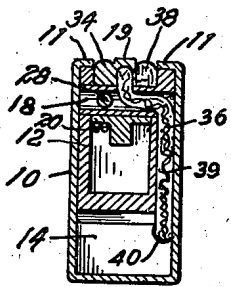
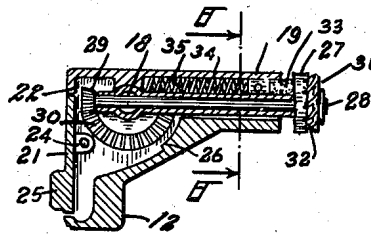
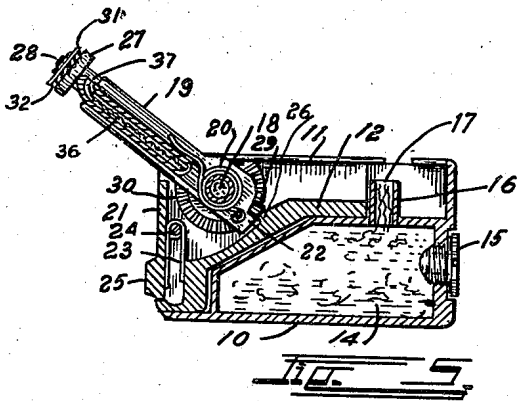
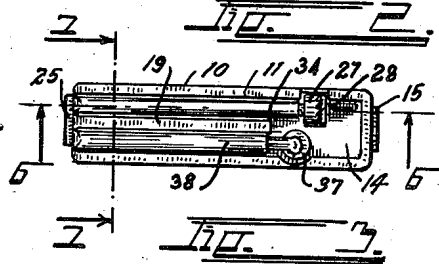
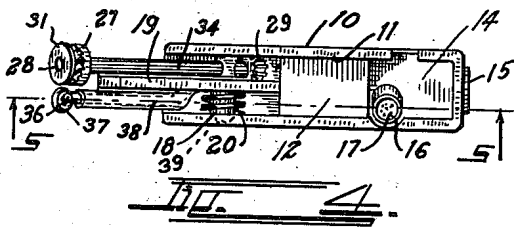
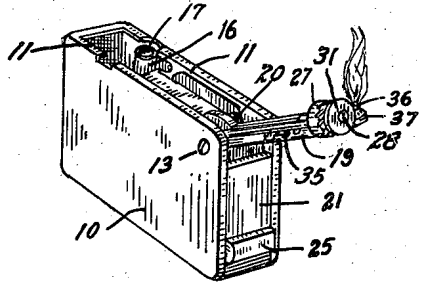
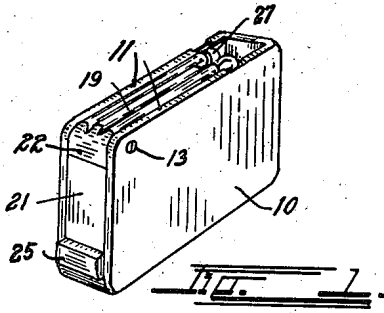
July 6, 1948.

W. J. MILLER, JR

2,444,663

PIPE AND CIGARETTE LIGHTER

Filed Feb. 14, 1947



INVENTOR,
WILLIAM J. MILLER JR.
BY

ATTORNEY.

UNITED STATES PATENT OFFICE

2,444,663

PIPE AND CIGARETTE LIGHTER

William J. Miller, Jr., Denver, Colo.

Application February 14, 1947, Serial No. 728,559

5 Claims. (Cl. 67-7.1)

1

This invention relates to a pocket lighter for smokers.

The usual lighter of the cigarette variety is useless to a pipe smoker, due to the fact that it is almost impossible to insert the flame into the bowl of the pipe.

The principal object of this invention is to provide a neat, compact lighter, which can not only be used for cigarettes and cigars but can also be inserted into the bowl of a smoking pipe.

Another object of the invention is to so construct the device that it will have a highly efficient mechanism for igniting the flame and an efficient fuel feeding means which will maintain the flame for a maximum time.

Other objects and advantages reside in the detail construction of the invention, which is designed for simplicity, economy, and efficiency. These will become more apparent from the following description.

In the following detailed description of the invention, reference is had to the accompanying drawing which forms a part hereof. Like numerals refer to like parts in all views of the drawing and throughout the description.

In the drawing:

Fig. 1 is a perspective view of the improved pocket lighter in the closed position;

Fig. 2 is a similar view illustrating the lighter in the open or lighted position;

Fig. 3 is a top view thereof in the closed position;

Fig. 4 is a top view in the open position;

Fig. 5 is a longitudinal sectional view taken on the line 5-5, Fig. 4;

Fig. 6 is a similar sectional view taken on the line 6-6, Fig. 3, with the outer case removed;

Fig. 7 is an enlarged cross-section taken on the line 7-7, Fig. 3;

Fig. 8 is a similarly enlarged cross-section taken on the line 8-8, Fig. 6; and

Fig. 9 is a still further enlarged detail view of a sparking head employed on the improved lighter.

The improved lighter is mounted in an outer case 10 having two sides, one end, and a bottom. The two sides are turned inwardly along the open top to form retaining flanges 11. A mechanism frame 12 is slid into the open end of the outer case 10 beneath the flanges 11 and is secured therein by means of two screws 13.

The outer case 10 is provided with a fuel reservoir 14 filled with cotton or other suitable absorbent material. The fuel is placed in the reservoir 14 through a filling plug 15 threaded into

2

the closed end of the case 10. A moistening nipple 16 projects upwardly from the reservoir 14 and contains an auxiliary wick 17.

A hollow rotatable shaft 18 extends across the mechanism frame 12 to provide a pivot for a swinging arm 19. The arm 19 is constantly urged to the open position by means of a coil spring 20 and it may be locked in the closed position by means of a swinging latch 21. The latch is positioned to engage a latch tooth 22 formed on the hinged extremity of the arm 19. The latch 21 is urged against the hinged extremity by means of a U-shaped spring 23 which is wrapped about a latch shaft 24 upon which the latch 21 is hinged.

A finger button 25 on the lower extremity of the latch 21 allows the latter to be pushed inwardly so as to swing the upper extremity thereof out of engagement with the tooth 22 to allow the spring 20 to snap the arm 19 to the open position. The outward movement of the arm is limited by the tooth 22 striking an abutment 26 in the bottom of the frame 12.

A steel sparking wheel 27 is rotatably mounted on the outer extremity of a wheel shaft 28 which extends longitudinally through the arm 19 terminating adjacent the shaft 18 in a toothed drive pinion 29. The drive pinion 29 meshes with an arcuate series of gear teeth 30 cut in the wall of the frame 12 concentric with the axis of the hollow shaft 18.

As the arm 19 is swung inwardly and outwardly, the pinion 29 will roll back and forth along the teeth 30 so as to rotate the wheel shaft 28 back and forth. A ratchet disc 31 is fixed on the extremity of the shaft 28. The sparking wheel 27 is mounted to freely rotate about the shaft 28 and is provided with ratchet teeth 32 on one of its surfaces to be engaged by the ratchet disc 31 so that the wheel 27 will be rotated only when the arm 19 is swinging to the open position, and will remain stationary when the arm 19 is forced to the closed position.

Return rotation of the sparking wheel 27 is prevented by a sparking flint 33 which is constantly urged against one face of the wheel from a flint tube 34 by means of a compression spring 35. The face of the wheel 27 bearing against the flint 33 is knurled or roughened to produce ignition sparks from the flint. These sparks ignite a wick 36 which projects from a conical extremity 37 on the end of a wick tube 38 which forms part of the arm 19.

The projecting portion of the wick 36 is in the path of the sparks produced from the flint

33. The wick 36 extends down the wick tube 38 and into the arm 19 thence into the hollow shaft 18, thence through a vertical passage 39 in the side of the frame 12 thence through an opening 40 in the inside end wall of the reservoir 14 so that liquid fuel is conducted by capillary attraction from the reservoir 14 to the projecting extremity of the wick 36.

Due to the long travel of the fuel through the wick 36 it has been found advisable to provide means to maintain the outer end of the wick 36 moistened with fuel. This is accomplished by placing the nipple 16 with its wick 17 at a point to receive the conical extremity 37 of the wick tube and end of the wick 36 when the arm is closed. Therefore, during all of the time that the lighter is closed liquid fuel is being fed to the wick 36 by the auxiliary wick 17 so that the former is always moist with fuel at the instant of ignition.

The device is carried, of course, in the closed position of Fig. 1. When a light is desired, the user presses the finger button 25 releasing the latch 21 from the tooth 22. This allows the spring 20 to snap the arm 19 to the open position of Fig. 2. The movement to the open position rapidly rotates the pinion 29 along the teeth 30. This movement is transmitted through the ratchet disc 31 to the sparking wheel 27 causing the roughened face thereof to strike sparks from the flint 33. These sparks ignite the wick 36 so that a flame is provided on the projecting extremity of the arm 19 as shown in Fig. 2, which may be conveniently inserted in a pipe bowl.

The device is returned to the closed position by simply pressing the arm 19 back into the case as shown in Fig. 10. This allows the latch 21 to snap beneath the tooth 22 to completely close the entire case.

While a specific form of the improvement has been described and illustrated herein, it is desired to be understood that the same may be varied, within the scope of the appended claims, without departing from the spirit of the invention.

Having thus described the invention, what is claimed and desired secured by Letters Patent is:

1. A pocket lighter comprising: a case; a fuel reservoir in said case; a rotatable arm shaft extending across the case; a swinging arm mounted on said shaft; a spring constantly urging said arm to the open position; a latch retaining said arm in the closed position; a wick extending from said reservoir to the free extremity of said arm; a shaft extending longitudinally of said arm; a sparking mechanism on the outer extremity of said arm operable by said shaft; a toothed pinion on the inner extremity of said arm; and stationary teeth supported from said case in the path of said pinion to impart rotation to said shaft as said arm swings to the open position.

2. A pocket lighter comprising: a case; a fuel reservoir in said case; a rotatable arm shaft extending across the case; a swinging arm mounted on said shaft; a spring constantly urging said arm to the open position; a latch retaining said arm in the closed position; a wick extending from said reservoir to the free extremity of said arm and means operable by the movement of said arm for igniting the outer extremity of said wick; and an auxiliary wick positioned to contact and moisten the first wick when the arm is in the closed position.

3. A pocket lighter comprising: a case; a fuel

reservoir in said case, one side edge and one end of said case being open; an arm hinged at the extremity of said side edge and arranged to close the latter when swung to the closed position; a pivoted latch closing the open end of said case, said latch engaging said arm to maintain the latter in the closed position; a spring urging said arm to the open position; a wick on the extremity of said arm; a sparking wheel positioned on said arm adjacent said wick; a shaft extending from said sparking wheel into said case; igniting means operable by said wheel; means in said case adapted to rotate said shaft as said arm swings to the open position; a toothed pinion on said shaft within said case; stationary gear teeth in said case engaging said pinion to rotate the latter during the opening movement of said arm; and igniting means operable by the rotating of said wheel.

4. A pocket lighter comprising: a case; a fuel reservoir in said case, one side edge and one end of said case being open; an arm hinged at the extremity of said side edge and arranged to close the latter when swung to the closed position; a pivoted latch closing the open end of said case, said latch engaging said arm to maintain the latter in the closed position; a spring urging said arm to the open position; a wick on the extremity of said arm; a sparking wheel positioned on said arm adjacent said wick; a shaft extending from said sparking wheel into said case; igniting means operable by said wheel; means in said case adapted to rotate said shaft as said arm swings to the open position; a toothed pinion on said shaft within said case; stationary gear teeth in said case engaging said pinion to rotate the latter during the opening movement of said arm; a flint tube in said arm terminating adjacent said sparking wheel; a flint in said tube and a spring urging said flint against said sparking wheel for ignition purposes.

5. A pocket lighter comprising: a case; a fuel reservoir in said case, one side edge and one end of said case being open; an arm hinged at the extremity of said side edge and arranged to close the latter when swung to the closed position; a pivoted latch closing the open end of said case, said latch engaging said arm to maintain the latter in the closed position; a spring urging said arm to the open position; a wick on the extremity of said arm; and igniting means on said latter extremity operable from the opening movement of said arm; said wick extending to said reservoir; and an auxiliary wick projecting from said reservoir to the closed position of said first wick to moisten the latter when said arm is closed.

WILLIAM J. MILLER, JR.

REFERENCES CITED

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

UNITED STATES PATENTS

Number	Name	Date
1,817,335	Aronson	Aug. 4, 1931
1,985,274	Aronson	Dec. 25, 1934

FOREIGN PATENTS

Number	Country	Date
476,085	Great Britain	Dec. 1, 1937
519,744	France	Jan. 31, 1921
864,981	France	Feb. 11, 1941