Aug. 8, 1933. F. A. WHITTAKER 1,921,855

COMBINATION CIGARETTE CASE AND LIGHTER

Filed Dec. 17, 1932

Fig. 1

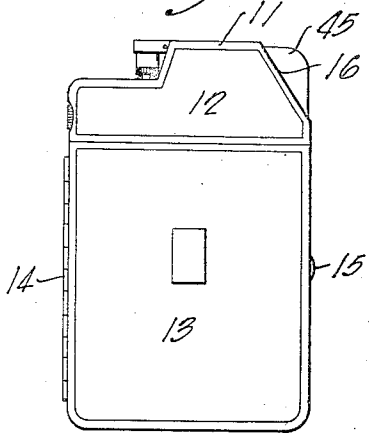


Fig. 2

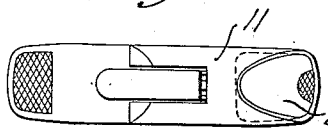


Fig. 3

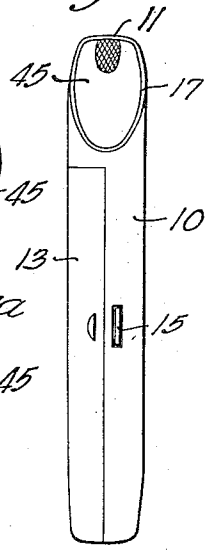


Fig. 4

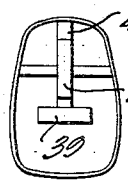


Fig. 4a

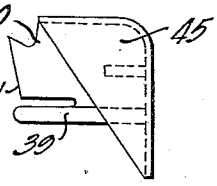


Fig. 5

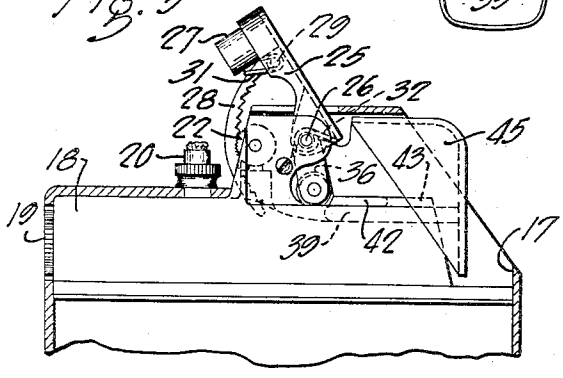


Fig. 8

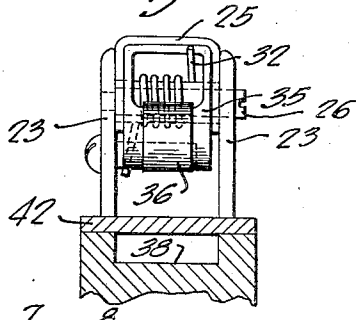


Fig. 6

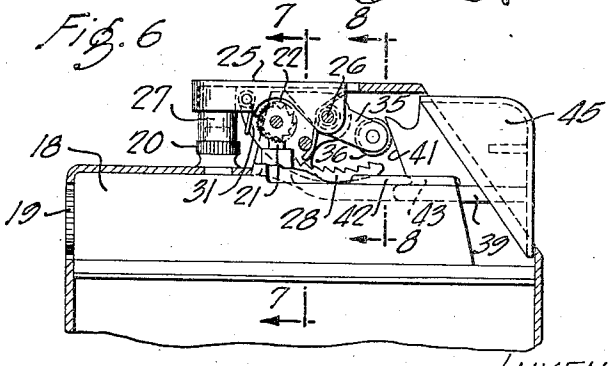
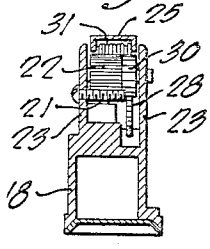


Fig. 7



INVENTOR
Frederick A. Whittaker
by Roberts, Cushman & Woodbury.
ATTYS

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COMBINATION CIGARETTE CASE AND LIGHTER

Frederick A. Whittaker, Attleboro, Mass., assignor to Marathon Company, Attleboro, Mass., a Corporation of Massachusetts

Application December 17, 1932. Serial No. 647,770

6 Claims. (Cl. 67—7.1)

This invention relates to a combined pyrophoric lighter and cigarette case, and more particularly to the actuating devices for the lighter and their relation to the case.

When a cigarette case or the like is held in the hand in the most natural and convenient position for use, the thumb most naturally rests at the side of the case near one of the upper corners. An ordinary actuating lever mounted on top of the case, such as is commonly used on the conventional types of pyrophoric lighters, would not only be mechanically awkward, but furthermore would detract from the design and appearance of the case, and also would present undesirable projections which would interfere with the article as a pocket case.

The principal object of the present invention is to provide a combined pyrophoric lighter and case which is of simple design and construction, and which is of attractive appearance, free from the aforementioned objectionable features. Another object of the invention is to provide a lighter actuating mechanism having a minimum number of parts, which may be economically manufactured and easily assembled, which mechanism is efficient and reliable in operation, and which is a marked improvement over similar types heretofore used.

Further objects relate to the operation and details of construction and will be apparent from a consideration of the following description and accompanying drawing which exemplifies one embodiment chosen for the purpose of illustration.

In the drawing:

Fig. 1 is a front elevation of a combined cigarette case and pyrophoric lighter;

Fig. 2 is an enlarged top plan view of the article;

Fig. 3 is an enlarged side elevation viewed from the right of Fig. 1;

Fig. 4 and Fig. 4ª are enlarged rear and side elevations, respectively, of the slide and cam members and the thumb-piece providing a collapsible corner for the case;

Fig. 5 is an enlarged transverse vertical section through the lighter housing showing the ignition mechanism in elevation with the snuffer arm in elevated position;

Fig. 6 is a view similar to Fig. 5 with parts broken away and showing the snuffer arm in snuffing position;

Fig. 7 is a section, on a reduced scale, taken on the line 7—7 of Fig. 6; and

Fig. 8 is a section, on an enlarged scale, taken on the line 8—8 of Fig. 6.

Referring to Figs. 1 to 3, the case comprises a continuous back wall 10 which extends across the top as shown at 11, and down the front side to provide the front wall 12 of the housing which encloses the lighter mechanism. Below the housing the case provides a compartment for cigarettes, which compartment is provided with a lid 13 hinged to the case at 14 and held latched by the usual spring catch 15. The upper right-hand corner of the case is cut off diagonally, as shown at 16, to provide a corner aperture 17.

The lighter proper is housed within the upper portion of the case, and comprises an elongate fuel receptacle 18 having at one end a threaded opening through which it may be filled, and a screw cap 19. Mounted on the top of the receptacle is a burner 20 having the usual wick which extends into the fuel receptacle, a pyrophoric member 21 juxtaposed to the burner, and a serrated friction wheel 22 in engagement with the pyrophoric member 21 and journaled between a pair of upstanding ears 23—23 integral with the side walls of the fuel receptacle.

An arm 25 is pivotally mounted intermediate its ends on shaft 26 supported by the ears 23—23, and on one end supports a snuffer 27 in the form of a cup which fits over the burner 20. A curved rack 28 pivotally connected to the arm 25 at 29, intermediate the snuffer and shaft 26, extends downwardly, as shown in Figs. 5 to 7, beyond a ratchet wheel 30 which is juxtaposed to the friction wheel 22 and fast to the same shaft. The rack 28 is yieldingly held against the ratchet wheel 30 by a light spring 31 so that the teeth of the rack are normally held in engagement with those of the ratchet wheel. When the arm 25 is swung upwardly on the shaft 26, the snuffer 27 is lifted from the burner and simultaneously the toothed rack 28, moving upwardly in engagement with the ratchet wheel 30, rotates the friction wheel 22 and causes a shower of sparks to be emitted from the pyrophoric member 21 for lighting the wick. A coil spring 32 surrounding the shaft 26 effects return movement of the arm 25 from its elevated position and normally holds the same in snuffing position, as shown in Fig. 6.

The opposite end of arm 25 is provided with a depending portion, here shown as a bifurcate member 35 adapted to swing downwardly toward the receptacle, as shown in Fig. 5. A roller 36 (Fig. 8) is journaled between the wings of the member 35 and constitutes a cam fol-

lower. The top of the fuel receptacle 18 is recessed at one end, as shown in Fig. 8, to provide a slideway 38 which extends toward the left as viewed in Figs. 5 and 6. A slide member 39 snugly fits within the slideway 38 and carries an upstanding wing 40 (Fig. 4) whose forward edge is downwardly and rearwardly inclined as shown at 41 to form a cam. A plate 42 having a central longitudinally extending slot 43, to receive the wing 40, retains the slide member within the slideway.

A thumb-piece 45 is rigidly secured to the outer end of the slide member, and is preferably in the form of a hollow shell of substantially triangular shape in elevation and of a size conforming to one of the corners of the case, so as to fill out and replace its cut off corner. The thumb-piece and slide member are so constructed and arranged that the cam 41 continuously engages the follower 36, and when the arm 25 is in snuffing position, the thumb-piece is flush against the end of the case, as shown in Fig. 6, thus normally closing the aperture 17. Movement of the thumb-piece toward the left causes the cam 41 to swing the follower 36 downwardly and actuate the ignition mechanism in the manner previously described. The thumb-piece not being attached to either the snuffer arm or follower is free to move independently in an outward direction and its withdrawal through the corner aperture is prevented by the engagement of its end with the lower edge of the corner aperture. Hence, these portions constitute in effect mutually engageable stop members which limit the outward movement of the thumb-piece and prevent its withdrawal.

While I have shown and described one desirable embodiment of the invention, it is to be understood that the present disclosure is for the purpose of illustration only, and that various changes in shape, proportion and arrangement of parts, as well as the substitution of equivalent elements for those herein shown and described, may be made without departing from the spirit and scope of the invention, as set forth in the appended claims.

I claim:

1. In a lighter of the type having a fuel receptacle, a burner, a snuffer, and ignition means including pyrophoric and friction members housed within a casing having a cut off corner providing a corner aperture in the casing, actuating means for operating said friction member and snuffer comprising an arm, one end of which supports said snuffer and is arranged to swing upwardly away from said burner, the other end of said arm having a depending portion constituting a cam follower and arranged to swing downwardly toward said receptacle, means connected to said arm for actuating said friction member when said arm is swung upwardly, means for effecting the return movement of said arm and normally holding the same in snuffing position, means disposed on the top wall of said receptacle providing a slideway which extends transversely of said casing, a cam member engageable with said follower and movable along said slideway to effect the actuation of said arm, and a thumb-piece secured to said cam, said thumb-piece normally closing said aperture in the casing and constituting a collapsible corner thereof whose outer surface is substantially continuous with that of the casing.

2. In a lighter of the type having a fuel receptacle, a burner, a snuffer, and ignition means including pyrophoric and friction members housed within a casing having a cut off corner providing a corner aperture in said casing, actuating means for operating said friction member and snuffer comprising an arm, one end of which supports said snuffer and is adapted to swing upwardly away from said burner about an axis intermediate its ends, the opposite end of said arm having a depending portion constituting a cam follower and adapted to swing downwardly toward said receptacle, means connected to said arm intermediate its pivotal axis and said snuffer for actuating said friction member when said arm is swung upwardly, resilient means for effecting return movement of said arm and normally holding the same in snuffing position, means disposed on the top wall of said receptacle providing a slideway which extends transversely of said casing, a slide member disposed in said slideway, said slide member having one end cut at an angle to provide a cam engageable with said follower and operable to swing said depending portion downwardly when said slide member is moved inwardly toward said axis, and a thumb-piece secured to the opposite end of said slide member, said thumb-piece normally closing said aperture in the casing and constituting a collapsible corner thereof whose outer surface is substantially continuous with that of the casing.

3. In a lighter of the type having a fuel receptacle, a burner, a snuffer, and ignition means including pyrophoric and friction members housed within a casing having a cut off corner providing a corner aperture in said casing, actuating means for operating said friction member and snuffer comprising an arm pivoted about an axis intermediate its ends, one end of said arm supporting said snuffer and arranged to swing upwardly away from said burner, the opposite end of said arm having a depending portion constituting a cam follower and arranged to swing downwardly toward said receptacle, means connected to said arm intermediate its pivotal axis and said snuffer for actuating said friction member when said arm is swung upwardly, means disposed on the top wall of said receptacle providing a slideway in alignment with the path of movement of said follower, a slide member disposed in said slideway, said slide member having a projecting portion cut at an angle to provide a cam engageable with said follower and operable to effect the actuation of said arm, and a thumb-piece secured to said slide member, said thumb-piece normally closing said aperture in the casing and constituting a collapsible corner thereof whose outer surface is substantially continuous with that of the casing.

4. In a lighter of the type having a fuel receptacle, a burner, a snuffer, and ignition means including pyrophoric and friction members housed within a casing having a cut off corner providing a corner aperture in said casing, actuating means for operating said friction member and snuffer comprising an arm pivoted about an axis intermediate its ends, one end of said arm supporting said snuffer and arranged to swing upwardly away from said burner, the opposite end of said arm having a bifurcated depending portion arranged to swing downwardly toward said receptacle, a roller journaled in said bifurcated portion, said roller constituting a cam follower, means connected to said arm for actuating said friction member when said arm

is swung upwardly, means disposed on the top wall of said receptacle providing a slideway in alignment with the path of movement of said follower, a cam member movable along said slideway and engageable with said follower to effect the actuation of said arm in response to movement of said cam, and a thumb-piece secured to said cam, said thumb-piece normally closing said aperture in the casing and constituting a collapsible corner thereof whose outer surface is substantially continuous with that of the casing.

5. In a lighter of the type having a fuel receptacle, a burner, a snuffer, and ignition means including pyrophoric and friction members housed within a casing having a cut off corner providing a corner aperture in the casing, actuating means for operating said friction member and snuffer comprising an arm, one end of which supports said snuffer and is arranged to swing upwardly away from said burner, the other end of said arm having a depending portion constituting a cam follower and arranged to swing downwardly toward said receptacle, means connected to said arm for actuating said friction member when said arm is swung upwardly, means for effecting the return movement of said arm and normally holding the same in snuffing position, a horizontal slideway on the top wall of the receptacle below and to the rear of the cam follower, a horizontal slide plate mounted in said slideway, an upright cam plate above the slide plate having a cam at its forward end cooperating with the cam follower, and a thumb-piece secured to the cam plate and slide plate normally closing the corner aperture in the casing and constituting a collapsible corner thereof whose outer surface is substantially continuous with that of the casing.

6. In a lighter of the type having a fuel receptacle, a burner, a snuffer, and ignition means including pyrophoric and friction members housed within a casing having a cut off corner providing a corner aperture in the casing, actuating means for operating said friction member and snuffer comprising an arm, one end of which supports said snuffer and is arranged to swing upwardly away from said burner, the other end of said arm having a depending portion constituting a cam follower and arranged to swing downwardly toward said receptacle, means connected to said arm for actuating said friction member when said arm is swung upwardly; means for effecting the return movement of said arm and normally holding the same in snuffing position, a horizontal slideway on the top wall of the receptacle below and to the rear of the cam follower, a horizontal slide plate mounted in said slideway, an upright cam plate above the slide plate having a cam at its forward end cooperating with the cam follower, and a thumb-piece secured to the cam plate and slide plate normally closing the corner aperture in the casing and constituting a collapsible corner thereof whose outer surface is substantially continuous with that of the casing, said thumb-piece and casing having mutually engageable stop members to prevent the withdrawal of the thumb-piece from the corner aperture.

FREDERICK A. WHITTAKER.