

Oct. 18, 1932.

J. E. BARNES

1,883,752

LIGHTER

Filed March 8, 1929

Fig. 1.

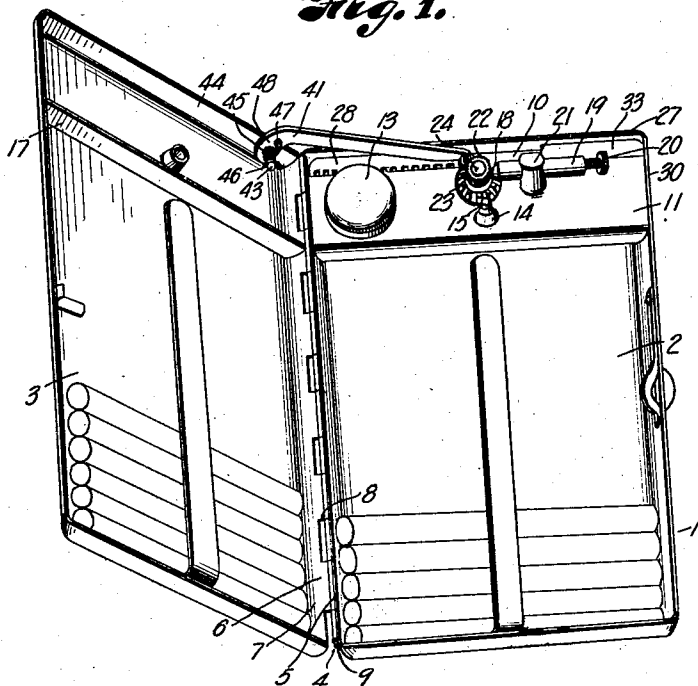


Fig. 2.

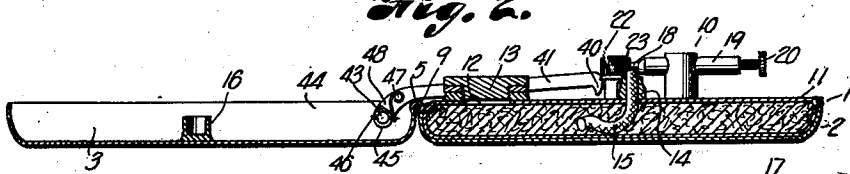


Fig. 4.

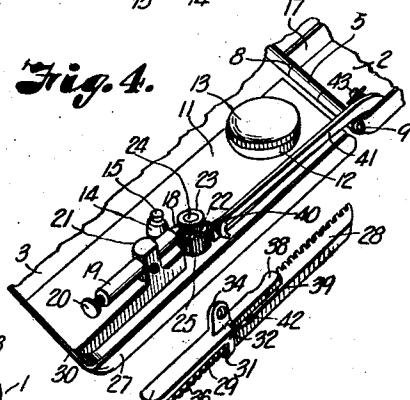
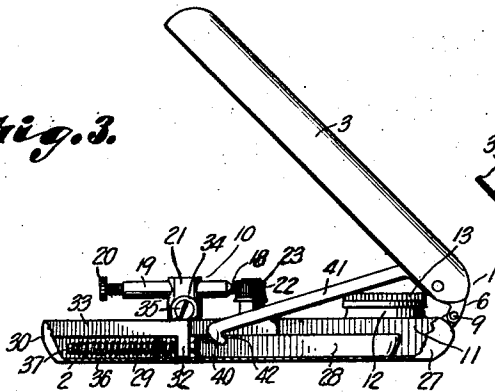


Fig. 3.



INVENTOR
Joseph E. Barnes
BY *Arthur E. Barnes*
ATTORNEY

UNITED STATES PATENT OFFICE

JOSEPH E. BARNES, OF CHICAGO, ILLINOIS

LIGHTER

Application filed March 8, 1929. Serial No. 345,377.

My invention relates to cigarette cases and more particularly to cases of this character provided with lighter mechanism, the principal objects of the invention being to attach a lighter to a cigarette case, and to effect operation of the lighter responsively to a movement of a member of the case.

In accomplishing these and other objects of the invention, I have provided improved details of structure, the preferred forms of which are illustrated in the accompanying drawing, wherein:

Fig. 1 is a perspective view of a combination hinged cigarette case and lighter embodying my invention illustrated in partly open position with the lighter actuating mechanism shown as moved toward position to effect operation of the lighter.

Fig. 2 is a transverse vertical section through the chamber containing a lighting fluid and illustrating the case members and lighter operating parts in position for effecting operation of the lighter.

Fig. 3 is an end view illustrating the position of a spring-actuated rack for rotating the friction wheel of the lighter and a member for tensioning the spring, said member being illustrated in position at the beginning of opening movement of the case members.

Fig. 4 is a fragmentary perspective view of the lighter-supporting end of the case, a wheel actuating bar being shown removed from the case for better illustration of the relation of lighter operating mechanism.

Referring in detail to the drawing:

1 designates a case comprising similar hollow members 2 and 3 which may be differentiated as a base and a cover or lid, pivotally connected by a hinge 4 comprising preferably tubular rolled ends 5 of spaced ears 6 on an inner edge wall 7, one member positioned in notches 8 between similar ears of the other member for alignment of the rolled portions to comprise a channel or bearing element to receive a pivot pin 9.

A lighting device 10 positioned in one end of the member 2 includes a fluid container 11 comprising a miniature tank fixed to the case having a filler opening 12 provided with a cap 13, and a tubular boss 14 for a wick

15 extending in the container and projecting upwardly from the boss. The lid 3 is provided with a socket 16 fixed to the wall thereof in a position to receive the boss and wick when the case is closed to snuff the wick and extinguish the light.

A partition 17 is mounted in the member 3 substantially in alignment with the inner wall of the fluid container.

A flint 18 is mounted in the end of a tubular arm 19 and adjustable therein by a screw 20 and the arm is supported on the tank by a pedestal 21 in suitable position to engage the notched face 22 of a wheel 23 rotatably mounted in the member 2, and preferably fixed to a post or shaft 24 rotatably mounted in said member adjacent the wick. A gear wheel 25 is fixed to the shaft 24 and spaced from the friction wheel by a collar.

The fluid container is spaced from the end wall 27 of the case member 2, and a rack bar 28 is reciprocable transversely of the member 2 and slidable on the floor thereof in a path defined by the end wall 27 and the adjacent side of the container, and retained by the wall 27 in meshed engagement with the wheel 25.

The rack is provided with a stem 29 adapted to extend from the pedestal 21 substantially to the outer side wall 30 of the case member 2, and projects through an opening 31 in an ear 32 depending intermediately from a guide and anchor bar 33 having an upwardly extending ear 34 secured to the pedestal by a screw 35 for fixing the bar in permanent position.

A coil spring 36 mounted on the stem bears oppositely against the ear 32 and a pin 37 in the stem. The rack is adapted to be moved transversely of the case member for conditioning the operating mechanism, that is to tension the spring, and when released will be moved by the spring with sufficient rapidity to rotate the gear and friction wheel for striking a spark from the flint to ignite the wick.

The bar 33 is further provided with a narrow extension 38 overlying one end of the rack and spaced from the end wall 27 to

form therewith a guide channel 39 for the hook 40 of a rack-setting rod, or arm 41 adapted to engage a hook-like notched portion 42 of the rack, whereby lateral movement of the hook may draw the rack against the tension of the spring and when the hook is released from the rack the spring will cause the rack to actuate the lighter.

The rod 41 is pivotally connected with the case member 3 so that when the hook thereon is engaged with the rack, opening movement of the case will cause the rod to draw the rack transversely of the lighter mechanism.

The rod is pivotally mounted on said member 3 by a pin 43 fixed in the end wall 44 of the case member adjacent the hinge. A coil spring 45 having one end fixed to the pin as at 46 and the other end fixed to the rod as at 47 is adapted to urge the rod to pivot toward the rack and therefore tends to cause the same to slide over the rack into engagement with the notched portion thereof when the case members are brought together, and retains the hook in engagement with the rack when the case members are moved apart upon opening the case.

The pivoted end 48 of the rod 41 is offset from the axis of the rod so that when the case is open, with the case members approximately aligned, the rod will extend substantially parallel with the plane of the case members and its lower edge will engage the hinge.

The hinge therefore comprises a fulcrum so that when the case member 3 is moved further relative to the case member 2, the hook end of the rod is lifted from engagement with the rack and the rack released so that it may be moved by the spring to rotate the wheel and actuate the lighter.

In using a device of the character described, the wick is retained in the socket when the case is closed. Upon opening the case the members may be restrained in open position while a cigarette is removed, the hook rod having moved the rack substantially to extreme tensioned position of the spring.

When the user desires to ignite the wick for lighting the cigarette, he continues the opening movement of the case and the engagement of the rod with the hinge causes the hook to be lifted from the rack and the released rack rotates the wheel to produce a spark and light the wick.

The coil spring on the pivot pin of the hook rod tends to retain the hook end of the rod in sliding engagement with the rack, and when the case is closed the hook is guided by the portion 38 of the bar 33 and slides over the rack into notch-engaging position. The socket in the case member 3 covers the wick and a portion of the wick boss when the case is closed, to extinguish the flame.

What I claim and desire to secure by Letters Patent is:

1. In a device of the character described,

a pair of hollow members having side edges and a hinge connecting adjoining side edges of said members to form a case, lighting mechanism in one of said members including a gear wheel, wheel-rotating means including a spring, and a rod pivotally mounted in the other member and adapted to tension the spring upon opening movement of the members, said rod being engageable with said hinge upon continued opening movement of the members for releasing the rod to permit the spring to operate on the wheel.

2. A device of the character described including a pair of hingedly connected hollow members, lighting mechanism in one of said members including a wheel, wheel-rotating means including a rack and a spring for moving the rack, a rod pivotally mounted in the other member and engageable with said rack and adapted to move the same to tension the spring upon opening movement of the members, and adapted upon continued opening movement of the members to release the rack to permit the spring to operate on the same, and yielding means for normally urging said rod into engagement with the rack.

3. In a device of the character described, hinged members, lighting mechanism mounted in one of said members including a rotatable wheel, a longitudinally movable rack for rotating the wheel, a fluid container cooperating with said member to guide the rack, and a spring for moving the rack, means responsive to opening movement of the members for tensioning the spring and responsive to continued opening movement of the members for releasing the rack to enable the spring to move the rack for rotating the wheel.

In testimony whereof I affix my signature.
JOSEPH E. BARNES.