

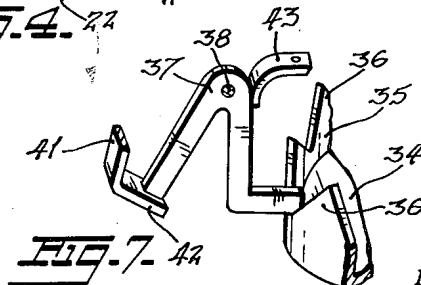
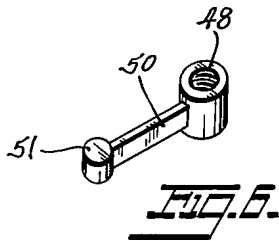
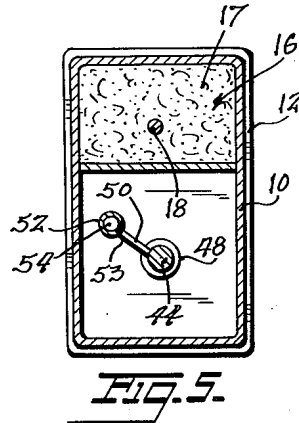
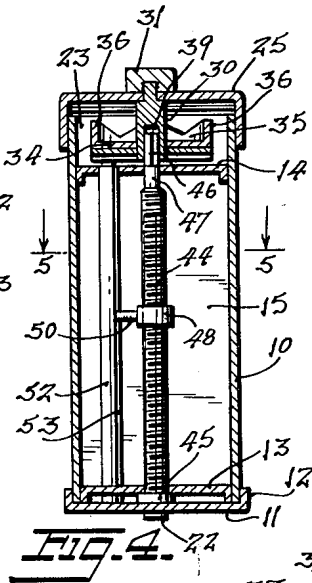
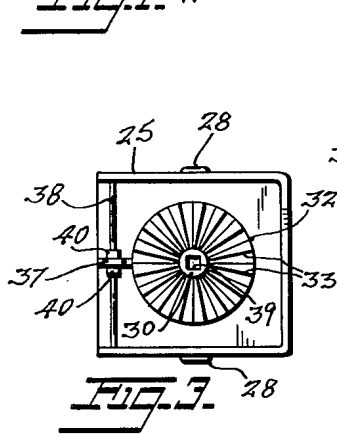
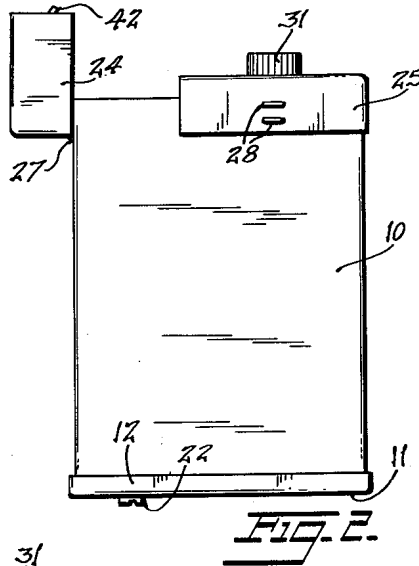
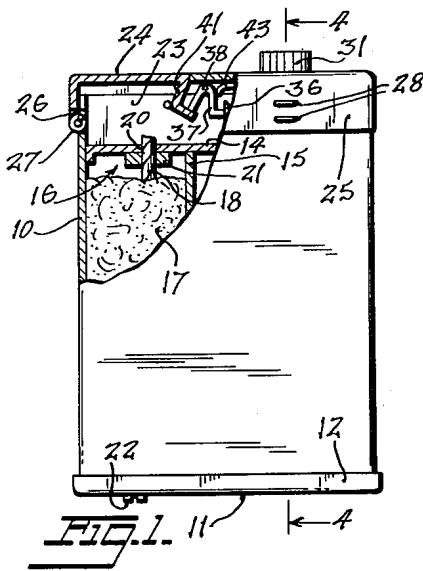
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2,621,502

POCKET CIGARETTE LIGHTER

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POCKET CIGARETTE LIGHTER

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5 Claims. (Cl. 67-7.1)

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This invention relates to new and useful improvements in pocket cigarette and cigar lighters, particularly the type utilizing a wick saturated with an inflammable fluid and spark producing means for igniting the wick.

In known lighters a small rod of flint is held against a sparking wheel by a spring. This arrangement has many disadvantages, for example, only extremely short rods of flint can be utilized due to the limit of compressibility of the spring, thus occasioning frequent replacements for the flint, during which replacement operations the said spring may easily become lost.

One object of the invention is the provision of a lighter in which the flint is fed positively against the sparking wheels, the means for such feed being so arranged as to allow extremely long bars or rods of flint being utilized.

Another object of the invention is to construct the lighter in such manner that actuation of the sparking wheel feeds the flint into contact therewith.

Still another object of the invention is the provision of a cover for the wick which is automatically thrown open on actuation of said sparking wheel.

A further object of the invention is generally to improve lighters of the type involved.

For further comprehension of the invention, and of the objects and advantages thereof, reference will be had to the following description and accompanying drawings, and to the appended claims in which the various novel features of the invention are more particularly set forth.

In the accompanying drawings forming a material part of this disclosure:

Fig. 1 is a side elevational view of the lighter of the invention with a portion broken away to reveal the interior construction.

Fig. 2 is a side elevational view of the lighter with the wick cover in open position.

Fig. 3 is a view from beneath of the removable sparking wheel unit of the lighter, as removed from the main structure of the latter.

Fig. 4 is a vertical sectional view on line 4-4 of Fig. 1.

Fig. 5 is a horizontal sectional view on line 5-5 of Fig. 4.

Fig. 6 is an enlarged perspective view of a portion of the flint feeding means.

Fig. 7 is a fragmentary enlarged perspective view of the wick cover latching and releasing means.

Referring now to the drawings wherein a pre-

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ferred embodiment of the invention is illustrated, the reference numeral 10 indicates a generally rectangular, rounded corner wall of metal or any other suitable material. A base plate 11 has a perimetral flange 12 which encompasses and is secured to the lower end of wall 10. A short distance above base plate 11 a partition 13 is secured about its margin to the wall 10 which also supports near its upper end a second partition 14. A vertical partition 15 extends between the partitions 13 and 14 and divides the space interior of wall 10 into two compartments of which that indicated by the numeral 16 is partially filled with an absorbent material 17 such as cotton. Coiled about in the cotton 17 which is saturated with any suitable inflammable fluid is a wick 18 that extends through an opening 20 in the partition 14. Preferably a perforated block 21 is secured to the underside of partition 14 about the opening 20 further to guide the wick 18. As usual, an opening for the admission of fluid is provided in the base of compartment 16, said opening being provided with a suitable screw plug 22.

As indicated above, the wall 10 extends above the partition 14, a walled space 23 thus being provided above the said partition. The space 23 is covered and substantially sealed by a pair of cap member shells 24 and 25, the former forming a wick cover and the latter the framing of a removable sparking wheel unit. Each cap member comprises a shell having one wall-less end, the said wall-less ends of the two members being located in abutting relationship with one another. At the end of space 23 above the compartment 16 the wall 10 is provided with a cutout and with ears 26 which cooperate with like ears on the end wall of cap member 24 in supporting between them a spring hinge 27 which tends to open the cap member from the closed position of Fig. 1. Spring hinges of this type are extremely familiar and it is deemed unnecessary to describe the same further. The cap member 25 is provided in either side wall with a pair of dimples which cooperate in familiar fashion with extrusions projected outward from wall 10 to maintain the cap member in place.

Projecting through and journaled in the top wall of cap member 25 is the reduced end of a stub shaft 30 which, above the said wall, is threaded to receive a knurled knob 31. The thick portion of shaft 30 has secured thereon as by a force fit a sparking disc 32 having suitable serrations 33 in the underface thereof, and

a disc 34 having an upturned peripheral flange 35 provided with star teeth 36. Shaft 30 is provided with a square bore 39 open at the under edge of the shaft for a purpose to be described hereinafter.

Engaging the star teeth 36 is one arm of a bell crank 37 pivoted on a spindle 38 fixed at its ends in the side walls of cap member 25. Suitable collars 40 hold the bell crank against lateral movements. The open end of cap member 24 is provided with a centrally located depending tongue 41 which is inclined toward the hinge 27 and is provided at its lower end with a right angled shelf 42. The shelf 42 is engaged by the free arm of the bell crank 37 to latch member 24 in closed position against the tension of hinge 27, when the other arm of the bell crank is engaged in an interdental space on the flange 35 of disc 34. The bell crank is maintained in latching position by a leaf spring 43 secured to the top wall of cap member 25 and engaging the edge of the bell crank. In obvious manner turning the knob 31 rotates the disc 34 and through the appropriate tooth 36 rocks the bell crank 37 free of shelf 42. This, of course, allows spring hinge 27 to swing the cap member 24 to open position. The cap member 24 is moved back to closed position manually, the shelf 42 camming the bell crank 37 out of its path. Spring 43 of course reengages the bell crank with the upper face of the shelf to latch the cap member closed.

Vertically aligned with the shaft 30 is a bolt 44 having unthreaded portions journalled in the partitions 13 and 14 and having a flat head 45 located between partition 13 and base plate 11 to prevent endwise movements thereof. Above partition 14 bolt 44 is provided with a square end 46 which engages in the square bore 39 of shaft 30. Rotation of knob 31 will therefore rotate bolt 44. The unthreaded portion of bolt 44 which extends through partition 14 is reduced somewhat and extends below the partition a short distance, as indicated at 47, for a reason to appear hereinafter.

The threads of bolt 44 are extremely fine and are provided with a very small lead. Threaded onto the bolt 44 is a sleeve 48 from which an arm 50 projects horizontally toward the juncture of partition 15 and wall 13 nearer the observer in Fig. 1. At its end, arm 50 is formed into a circular block 51 adapted to a vertical tube 52 fixed in the partitions 13 and 14. As shown, the tube has a vertical slit 53 in the wall thereof to accommodate the arm 50. According to the invention a long bar or rod 54 of flint is mounted in the tube 52 atop block 51 with the upper edge thereof engaging the serrations 33 on the under side of spark disc 32.

The construction is such that as the knob 31 is rotated a fractional turn, and with it the sparking disc 34, the bolt 44 also rotates, raising the block 51 a slight amount to maintain the flint 54 in contact with the serrations 33 as the latter scrapes off the top particles of the former. Before the flint 54 becomes exhausted, sleeve 48 rides onto the reduced portion 47 or bolt 44 which prevents further upward movement thereof. A fresh flint then is inserted by removing cap 17 and member 25 as described above. It is to be noted that the decentralized positioning of the flint 54 aids in directing sparks therefrom to the wick 18, that is, the wick and flint are arranged on a line tangential to the circle of serrations 33 at the point at which said flint abuts said serrations.

The invention also contemplates the use of a replaceable compressed gas cartridge in place of wick 18, said cartridge being housed in the compartment 16 and projecting through a suitable opening in partition 14. In this construction the wick cover 24 is replaced by the cap valve of the cartridge and the operating arm of bell crank 37 is forked to control the operation of said valve. Such compressed gas cartridges and the manner of operating the valves thereof are well known and it is deemed desirable not to illustrate nor further describe the same.

While I have illustrated and described the preferred embodiment of my invention, it is to be understood that I do not limit myself to the precise construction herein disclosed and the right is reserved to all changes and modifications coming within the scope of the invention as defined in the appended claims.

Having thus described my invention, what I claim as new, and desire to secure by United States Letters Patent is:

1. In a pocket lighter the combination of a tube having a vertical slit in the wall thereof, the tube being adapted to receive a long rod of flint, a vertical bolt situated adjacent the tube and so journalled as to be fixed longitudinally, a sparking wheel coaxial and rotatable with said bolt and having serrations on the under face thereof to engage the upper end of the flint rod, a knob to turn the sparking wheel, a sleeve threaded on said bolt, an arm projecting from said sleeve through the slit of the tube, a block on the end of the arm in said tube beneath the flint rod and acting to raise said flint rod when the bolt is rotated, a disc coaxial and rotatable with said sparking wheel and having upturned star teeth on the peripheral edge thereof, a wick, a wick cover, a spring hinge tending to swing said cover to open position, and a latch to maintain said cover in closed position, tripped by said star teeth on rotation of said disc.

2. In a pocket lighter the combination of a tube having a vertical slit in the wall thereof, the tube being adapted to receive a long rod of flint, a vertical bolt situated adjacent the tube and so journalled as to be fixed longitudinally, a sparking wheel coaxial and rotatable with said bolt and having serrations on the under face thereof to engage the upper end of the flint rod, a knob to turn the sparking wheel a sleeve threaded on said bolt, an arm projecting from said sleeve through the slit of the tube, a block on the end of the arm in said tube beneath the flint rod and acting to raise said flint rod when the bolt is rotated, a disc coaxial and rotatable with said sparking wheel and having upturned star teeth on the peripheral edge thereof, a wick, a wick cover comprising a three-walled shell, a spring hinge tending to swing said cover to open position, a centrally located depending tongue at the wall-less end of the cover shell inclined toward the hinge, a shelf projecting at right angles to the tongue, a bell crank having one arm engaging said shelf to latch the cover shell in closed position, the other arm engaging said star teeth and the shell being unlatched by rotation of said disc.

3. In a pocket lighter the combination of a tube having a vertical slit in the wall thereof, the tube being adapted to receive a long rod of flint, a vertical bolt situated adjacent the tube and so journalled as to be fixed longitudinally, a sparking wheel coaxial and rotatable with said bolt

and having serrations on the under face thereof to engage the upper end of the flint rod, a knob to turn the sparking wheel, a sleeve threaded on said bolt, an arm projecting from said sleeve through the slit of the tube, a block on the end of the arm in said tube beneath the flint rod and acting to raise said flint rod when the bolt is rotated, a disc coaxial and rotatable with said sparking wheel and having upturned star teeth on the peripheral edge thereof, a wick, a wick cover comprising a three-walled shell, a spring hinge tending to swing said cover to open position, a centrally located depending tongue at the wall-less end of the cover shell inclined toward the hinge, a shelf projecting at right angles to the tongue, a bell crank having one arm engaging said shelf to latch the cover shell in closed position, the other arm engaging said star teeth and the shell being unlatched by rotation of said disc, and an unthreaded reduced portion at the upper end of said bolt onto which said sleeve rides to prevent further upward movement thereof when the flint rod is nearly exhausted.

4. In a pocket lighter the combination of a tube having a vertical slit in the wall thereof, the tube being adapted to receive a long rod of flint, a vertical bolt situated adjacent the tube and so journaled as to be fixed longitudinally, a sparking wheel coaxial and rotatable with said bolt and having serrations on the under face thereof to engage the upper end of the flint rod, a knob to turn the sparking wheel, a sleeve threaded on said bolt, an arm projecting from said sleeve through the slit of the tube, a block on the end of the arm in said tube beneath the flint rod and acting to raise said flint rod when the bolt is rotated, a disc coaxial and rotatable with said sparking wheel and having upturned star teeth on the peripheral edge thereof, a wick, a wick cover comprising a three-walled shell, a spring hinge tending to swing said cover to open position, a centrally located depending tongue at the wall-less end of the cover shell inclined toward the hinge, a shelf projecting at right angles to the tongue, a bell crank having one arm engaging said shelf to latch the cover shell in closed position, the other arm engaging said star teeth and the shell being unlatched by rotation of said disc, an unthreaded reduced portion at the upper end of said bolt onto which said sleeve rides to prevent further upward movement thereof when the flint rod is nearly exhausted, a square end on said bolt above said reduced portion, a stub shaft on which said knob, said sparking wheel and said disc are secured, a square socket in the lower end of said shaft engaged by the said square end, and a three-walled shell-like

cover in which said shaft is journaled and said bell crank is pivoted.

5. In a pocket lighter flint feeding means comprising a tube having a vertical slit in the wall thereof, the tube being adapted to receive a long rod of flint, a vertical bolt situated adjacent the tube and so journaled as to be fixed longitudinally, a sparking wheel coaxial and rotatable with said bolt and having serrations on the under face thereof to engage the upper end of the flint rod, a knob to turn the sparking wheel, a sleeve threaded on said bolt, an arm projecting from said sleeve through the slit of the tube, a block on the end of the arm in said tube beneath the flint rod and acting to raise said flint rod when the bolt is rotated, a disc coaxial and rotatable with said sparking wheel and having upturned star teeth on the peripheral edge thereof, a wick, a wick cover comprising a three-walled shell, a spring hinge tending to swing said cover to open position, a centrally located depending tongue at the wall-less end of the cover shell inclined toward the hinge, a shelf projecting at right angles to the tongue, a bell crank having one arm engaging said shelf to latch the cover shell in closed position, the other arm engaging said star teeth and the shell being unlatched by rotation of said disc, an unthreaded reduced portion at the upper end of said bolt onto which said sleeve rides to prevent further upward movement thereof when the flint rod is nearly exhausted, a square end on said bolt above said reduced portion, a stub shaft on which said knob, said sparking wheel and said disc are secured, a square socket in the lower end of said shaft engaged by the said square end, and a three-walled shell-like cover in which said shaft is journaled and said bell crank is pivoted, the last said cover being held in place frictionally.

WILLIAM MCGILL.

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