June 26, 1956 A. SALZER 2,751,772

CIGARETTE LIGHTER

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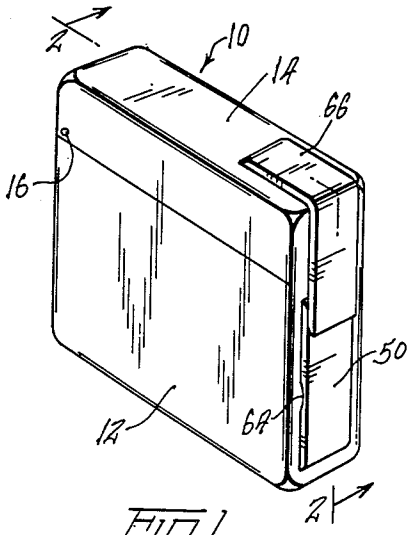

FIG. 1

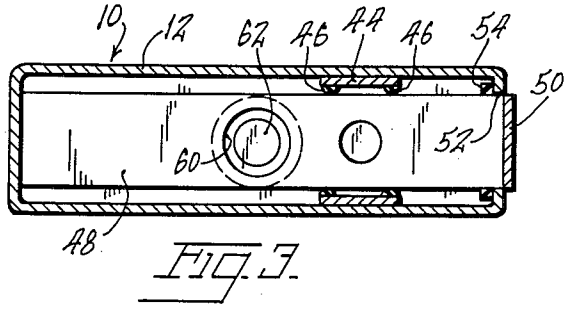

FIG. 3

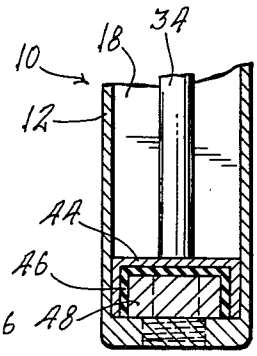

FIG. 4

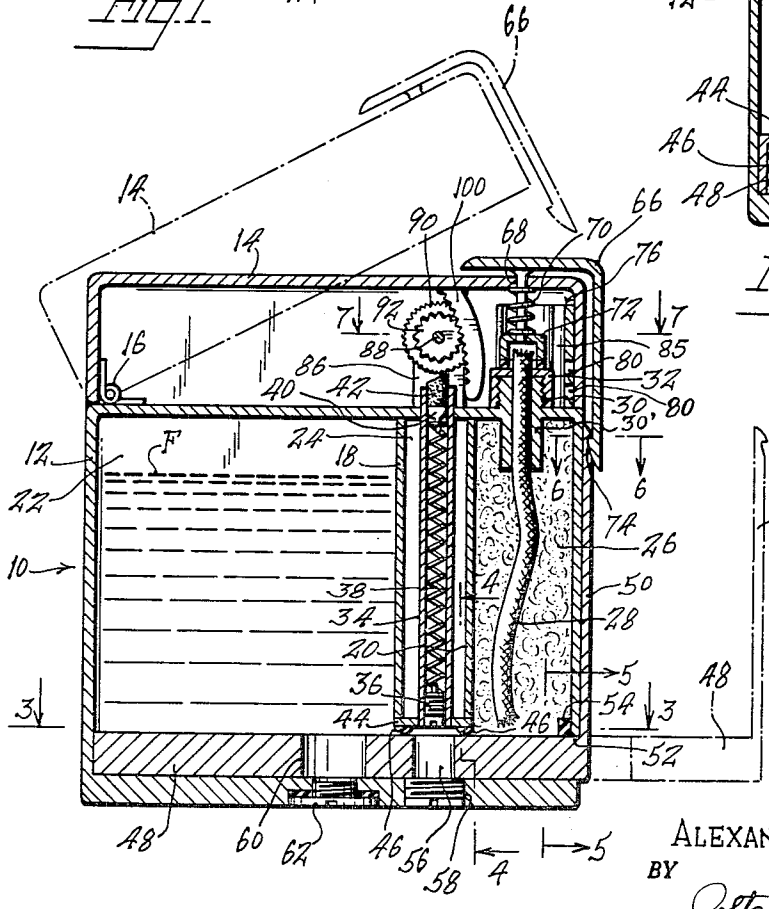

FIG. 2

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CIGARETTE LIGHTER

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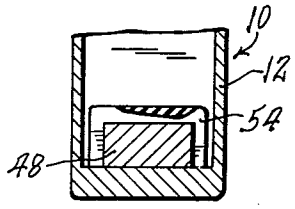

FIG. 5.

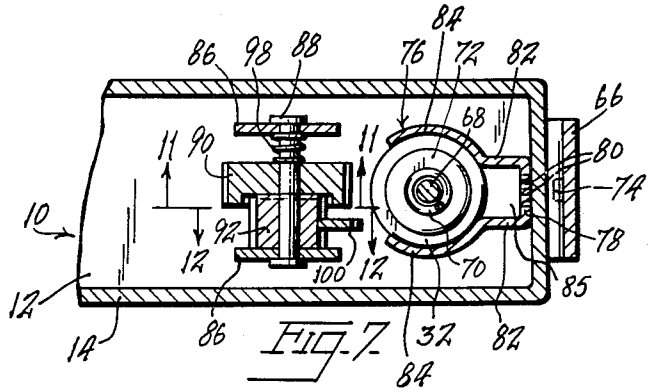

FIG. 7.

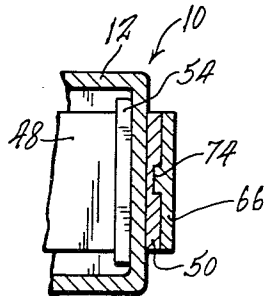

FIG. 6.

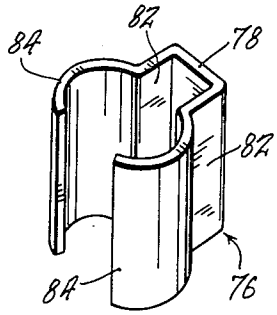

FIG. 8.

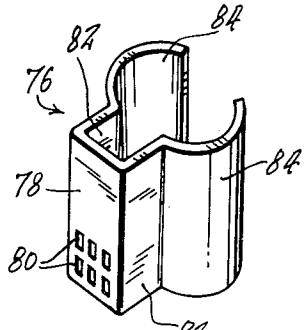

FIG. 9.

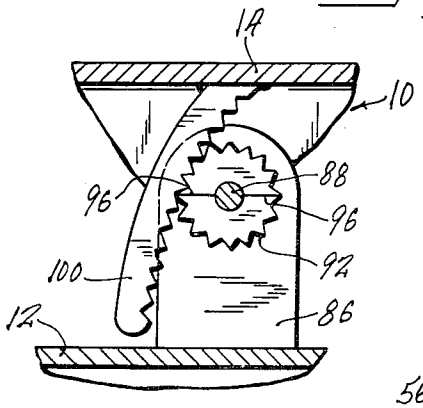

FIG. 12.

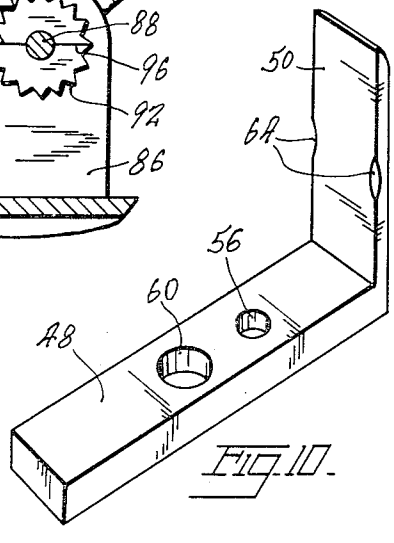

FIG. 10.

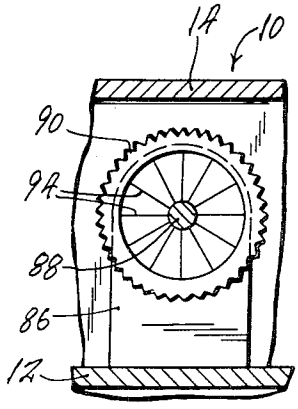

FIG. 11.

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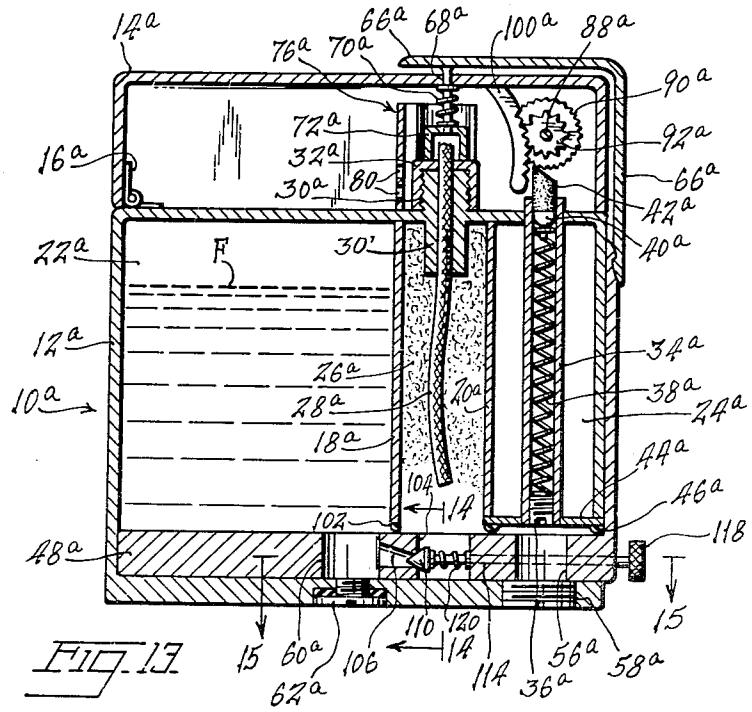

FIG. 13

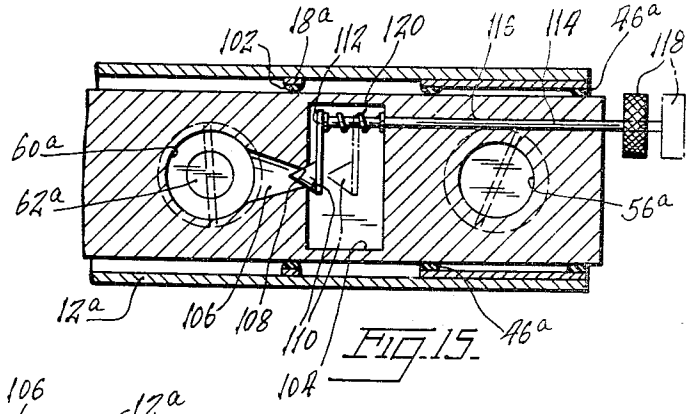

FIG. 15

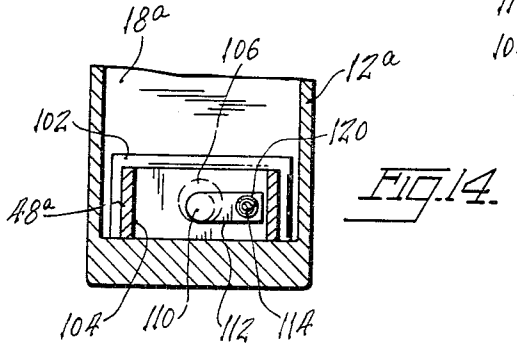

FIG. 14

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2,751,772

CIGARETTE LIGHTER

Alexander Salzer, New York, N. Y.

Application January 6, 1955, Serial No. 480,261

12 Claims. (Cl. 67—7.1)

This invention relates to cigarette lighters and, more particularly, has reference to a generally improved lighter, having an improved means for saturating the wick, an improved wick mount, and an improved lid assembly including a flint rotating means, a wick cap, and latch, novelly arranged and coacting with one another in a particularly improved manner.

One important object of the present invention is to provide, in a wick mount, means facilitating the insertion or removal of a wick, and for holding the wick in proper position within a provided wick chamber.

Another object is to provide a reservoir separate from the wick chamber, in which reservoir a substantial quantity of lighter fluid can be retained, a slide being provided in the lighter construction which is actuable to transfer a measured, predetermined amount of lighter fluid from the reservoir to the wick chamber, for saturating the wick at selected intervals.

Another object of importance is to provide a flint rotating means which is operable responsive to swinging of the lighter lid upwardly about its hinge axis, said flint rotating means being of an improved construction and being relatively simple and of low cost.

Another object of importance is to provide a removable wind guard or deflector, capable of being swiftly attached to or detached from the wick support means of the device, said guard being adapted to provide a flue or chimney through which air will enter when the wick is ignited, to provide a steady, substantial flame.

Another object is to provide, in one form of the invention, in combination with the above mentioned slide, a spring-loaded plunger which normally prevents communication between a wick chamber and reservoir. The plunger, when shifted to open position, permits the fluid to flow into the wick chamber, even in the closed position of the slide. Thus, it is proposed to equip the lighter with an arrangement wherein, by movement of a slide, a measured quantity of liquid can be transferred from the reservoir to the wick chamber, or wherein, alternatively, by operation of a valve plunger, a free flow of liquid from the reservoir to the wick chamber is effected.

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 perspective view of a lighter formed in accordance with the present invention.

Fig. 2 is a sectional view on line 2—2 of Fig. 1, the dotted lines showing open positions of the lid and slide.

Fig. 3 is a sectional view on line 3—3 of Fig. 2.

Fig. 4 is a transverse sectional view, on a slightly enlarged scale, substantially on line 4—4 of Fig. 2.

Fig. 5 is a detail sectional view, the scale being the same as that used in Fig. 4, taken substantially on line 5—5 of Fig. 2.

Fig. 6 is a detail sectional view on line 6—6 of Fig. 2, showing the catch or detent means for the lid and slide.

Fig. 7 is a sectional view, on an enlarged scale, on line 7—7 of Fig. 2.

Fig. 8 is a perspective view of the wind deflector or guard, per se.

Fig. 9 is a rear perspective view of the wind guard.

Fig. 10 is a perspective view of the slide per se.

Fig. 11 is a sectional view on line 11—11 of Fig. 7.

Fig. 12 is a sectional view on line 12—12 of Fig. 7.

Fig. 13 is a view similar to Fig. 2, showing a modified construction.

Fig. 14 is an enlarged sectional view on line 14—14 of Fig. 13.

Fig. 15 is an enlarged sectional view on line 15—15 of Fig. 13.

The reference numeral 10 generally designates a lighter formed in accordance with the present invention.

The lighter includes a casing 12 which may be of any particular outer configuration desired. In the illustrated example, the casing is of flattened, rectangular formation, and overlying the upper end of the casing is a lid 14 having a spring hinge connection 16 at one end to the back wall of the casing.

Fixedly mounted within the casing are transversely extending, closely spaced partitions 18, 20, dividing the casing into a relatively large reservoir 22 for lighter fluid F, a flint tube chamber 24, and a wick chamber 26. The wick chamber is filled with the usual absorbent cotton wadding which surrounds the wick 28. The latter has its upper end extending through a neck 30 having external threads receiving the complementarily threaded skirt of a wick support cup 32 having a center opening of a diameter corresponding to that of the wick. By reason of this arrangement, the insertion or removal of a wick in the wick compartment is facilitated. The cup 32 can be unscrewed, so as to cause removal of said cup to take the wick with it, since the wick is engaged relatively firmly in the cup, while being loose in the comparatively large diameter neck 30. The wick can then be changed if desired, and when a new wick is placed in engagement at its upper end in the opening of the cup 32, said wick can be easily positioned through the opening of the neck 30, after which the cup 32 is secured once again to said neck 30. The neck 30 is provided with a downwardly extending portion 30' which projects into the wick chamber 26, and serves as a wick holder. This extension prevents any lighter fluid from leaking out of the lighter, should the latter be inadvertently turned upside down.

Within the flint tube chamber a cylindrical flint tube 34 is provided, the upper end thereof projecting through and being fixedly mounted in an opening formed in the top of the casing. The lower end portion of the flint tube is internally threaded to receive a screw 36 having a reduced guide shank on its inner end. A spring 38 is held under compression between the screw and a lug 40 slidable in the flint tube adjacent the upper end thereof, said spring thus exerting pressure tending to force upwardly a flint 42.

A flint tube support 44 of inverted U-shape (Fig. 4) is fixedly mounted in the lower end of the casing, the lower end edges of the partitions being abutted against and fixedly secured to the front and back edges of said support 44. The flint tube has its lower end engaged in a center opening formed in the horizontal bight portion of the support 44 as best shown in Fig. 2.

Extending about the inner surface of the support 44, at the front and back edges thereof, are sealing strips 46 of soft rubber or the like. The sealing strips 46 are adhesively secured to said inner surface of the support 44, and are maintained in slightly compressed condition by an elongated, rectangular slide 48 mounted slidably in the

support 44, whereby said support 44 constitutes a guide or housing for the slide 48. The purpose of the sealing strips 46 is to prevent leakage between the reservoir 22 and the wick chamber 26, when the slide is in the full line position thereof shown in Fig. 2.

At its front end, the slide 48 is integrally formed with an upstanding, flat, elongated tongue 50 adapted to be positioned flat against the front wall of the casing 12, as shown in Fig. 1. The front end portion of the slide 48 is slidably mounted in a rectangular opening 52 formed in said front wall of the casing, and to prevent leakage at the location of said opening there is extended a sealing strip 54, resiliently contacting the slide body and adhesively secured to the edge portion of the opening 52 interiorly of the casing.

Adjacent the front end of the slide, there is formed therein an opening 56 adapted to be disposed in registration with the lower end of the flint tube, when the slide is in the full line position shown in Fig. 2. When the slide is so positioned, it is also in registration with a larger threaded opening formed in the bottom of the casing which is closed by a screw 58. By reason of this arrangement, one can extend a small screw driver, nail file, or the like through the openings 56, and the opening of screw 58, to engage the screw driver in the kerf of the screw 36 when a new flint is to be placed in the flint tube.

Also formed in the slide body 48, between the rear end thereof and the opening 56, is an opening 60. This communicates with the reservoir 22 when the slide is in the full line position of Fig. 2.

When the slide is shifted from the full to the dotted line positions thereof shown in Fig. 2, fluid filling the opening 60 will be carried to the wick chamber 26, since in the dotted line position of the slide 48 the opening 60 is brought into communication with the wick chamber. The lighter can now be inverted to cause the fluid in the opening 60 to pour into the wick chamber, for the purpose of saturating the wick. The wick can be saturated whenever necessary, and in this way it will be seen that a measured quantity of fluid can be transferred from the reservoir to the wick chamber, for the purpose of saturating the wick, at such times as may be desired. A substantial quantity of lighter fluid can be kept in the cigarette lighter, as a result, so that the cigarette lighter need not be refilled as frequently as is required in the case of conventional lighters wherein fluid is poured into a wick chamber filled with cotton wadding. In the illustrated example, there is no need for the use of cotton wadding, although, of course, said wadding can be placed within the wick chamber about the wick if desired.

To facilitate the filling of the reservoir 22 there is formed in the bottom of the casing an opening which registers with the opening 60 when the slide is in the full line position of Fig. 2. The opening of the casing is threaded to receive a plug 62, which can be readily removed for the purpose of filling the reservoir with a new supply of fluid whenever desired.

In the opposite side edges of the tongue 50, intermediate the opposite ends thereof, fingernail-receiving recesses 64 are formed (Fig. 10), into which one's fingernails can be extended for the purpose of pulling the slide out to the dotted line position thereof shown in Fig. 2.

The slide is normally kept in its closed, full line position through the medium of a latching plate 66. The plate 66 is of inverted L-shape as shown in Figs. 1 and 2, and like the tongue 50, can be attractively chrome plated or otherwise treated to add to the appearance of the lighter. The plate 66 has a horizontal leg overlying the top wall of the lid 14, at the front of the lid, and spaced above said top wall a short distance, as shown in Fig. 2. Fixedly secured to the underside of the top leg of the latch plate 66 is a depending, vertically extending shank 68 slidable in an opening formed in the lid, a spring 70 being circumposed about the shank interiorly of the lid and being held under compression between the top wall of the lid and a wick cap 72. The cap 72 may have a center opening threaded to receive a complementarily threaded lower end portion on the shank 68, as shown in Fig. 2, to facilitate the connection of the cap 72 to said shank.

The cap 72, as shown in Fig. 2, is of inverted cup shape, and has a bottom edge to which can be adhesively secured a compressible gasket, adapted to bear against the wick support cup 32. The cap, when the lid is in the closed position, encloses the exposed upper end portion of the wick, so as to insure against evaporation of the liquid with which the wick is saturated. As a result, whenever the lid is swung to its open position, there will be an ample supply of fumes and the upper end portion of the wick will be sufficiently wet to insure accurate operation of the lighter and ignition of the wick fumes without the necessity of repeated attempts to ignite the wick.

The depending leg of the latching plate 66 extends down the front of the lighter, to a location below the lower edge of the lid, the lower end of said depending leg of the latching plate being beveled, with the upper end of the tongue 50 being complementarily beveled. The depending leg of the latching plate is faced downwardly along the front wall of the lighter casing and is spaced from the front wall a distance approximately equal to the thickness of tongue 50, as best shown in Fig. 2. On the inner surface of the lower end portion of the depending leg of the latching plate there is formed a locking lug or detent 74, engageable in a mating shouldered recess formed in the upper end portion of the tongue 50.

The depending leg of the latching plate may have slightly springable characteristics, so as to permit the lower end portion of the latching plate to swing outwardly a distance sufficient to allow the lug 74 to enter its associated recess of the tongue.

From the above, it will be seen that when the lid is closed, it will hold the slide 48 against accidental movement from its closed position. However, if it is desired to resaturate the wick, it is merely necessary that the lid be swung to open position, after which the slide is free to be manually shifted to its dotted line position shown in Fig. 2, for the purpose of transferring a quantity of fluid F to the wick chamber.

When the lighter lid is closed, with the slide in the full line position of Fig. 2, the spring 70, tending to expand, will force the latching plate upwardly so as to aid in the engagement of the lug 74 with the shouldered recess of the tongue 50. The spring 70, it should be noted, is of a substantial strength, so as to force the latching plate upwardly into a locking position whenever lid 14 is shifted to a closed position by the user. The beveled ends of the tongue and latching plate, of course, facilitate this action, and additionally, the latching plate is of a sufficiently resilient nature to further aid in the interengagement of said lug 74 with its associated recess.

In this way, not only is the slide left in closed position, but also the lid is releasably locked in closed position and at the same time, the wick cap 72 is forced tightly against the associated top wall of the cup 32 to insure against loss of the wick fumes.

To open the lid, it is merely necessary that one insert his or her fingernail under the beveled end of the lower end of the latching plate 66, to shift the depending leg of said latching plate laterally outwardly, to the right in Fig. 2. This disengages the lug 74 from its associated notch, and the spring hinge 16 will now throw the lid 14 to its open position. The lid 14 is in its partially open position, it should be noted, in Fig. 2.

Referring to Figs. 2, 7, 8 and 9, there is here shown a removable wind deflector or guard generally designated 76. This is formed from a single piece of relatively thin

sheet metal material, having a rectangular bight portion 78 merging into short side walls, the bight portion having horizontally extending, slot-like apertures 80 adjacent its lower end. The side walls have been designated by the reference numeral 82, and at their edges remote from the bight portion 78 merge into oppositely and outwardly bowed side wall extensions 84. The side wall extensions 84 are curved about a common center to constitute parts of the same circle, and have an inner diameter equal to the outer diameter of the cup 32 (Fig. 7). As a result, the wind deflector can be lifted off the cup whenever desired, or can be placed on the cup by moving the same downwardly in a vertical direction. When placed in engagement with the cup in the manner shown in Fig. 7, the wind deflector is securely held in place, and is held against lateral deviation. At the same time, it can be removed with a minimum of difficulty, merely by a lifting action.

The flue apertures 80 open, as shown in Figs. 2 and 7, into a chimney-like space 85 defined between the lower end portion of the back wall 78 and the cup 32. Air will rush into this space through the apertures 80 when the wick is ignited, and will keep a steady flame burning as long as necessary.

Referring now to the flint wheel rotating means, in Figs. 7, 11 and 12 a pair of transversely spaced, vertically disposed bearing plates 86 is shown. These are spaced relatively closely from the wick, and journalled in aligned bearing openings of the plates 86 is a shaft 88. A flint wheel 90 is rotatably mounted upon the shaft, in engagement at one side or face thereof with a gear wheel 92. The flint wheel, in the gear-contacting face thereof, has a shallow, circular recess receiving the adjacent side of the gear wheel, as shown in Fig. 7. The inside wall of the recess is formed with a circumferential series of radially extending clutch teeth 94. These are of triangular shape, so as to form on each tooth one sloping wall and one wall normal to the plane of rotation of the flint wheel and disposed at an acute angle to the sloped wall. The clutch teeth 94 in effect constitute ratchet teeth, and are engageable by a single pair of diametrically opposite clutch teeth 96 formed upon the adjacent face of the gear wheel 92.

The purpose of this arrangement is to cause the flint and gear wheels to rotate together when the gear wheel is turned in one direction. When the gear wheel is turned in an opposite direction, however, the teeth 96 ratchet or slip over the teeth 94, so as not to cause rotation of the flint wheel with the gear wheel in said other direction.

The flint wheel 90 is resiliently and yieldably biased axially of the shaft 88 into engagement with the gear wheel, by means of a spring 98 interposed between one of the bearing plates 86 and the other face of the flint wheel, as shown in Fig. 7.

An elongated rack 100, having a tapered lower or free end, is fixedly secured to and depends from the underside of the top wall of lid 14, as shown in Figs. 2 and 12. The rack 100 is slightly curved in an arc having as its center the hinge axis 16.

The arrangement is one which causes the flint wheel to be rotated responsive to throwing of the lid upwardly by the user. In other words, on release of the latch provided by the lug 74, the spring hinge 16 throws the lid upwardly, and the rack 100 causes rotation of the gear wheel 92 in a counterclockwise direction, viewing the same as in Fig. 2. This causes similar counterclockwise rotation of the flint wheel, causing said wheel to throw a spark from the flint 42 to the exposed upper end of the wick 28. It will be understood that at the same time that rotation of the flint wheel began, the cap 72 was lifted off the cup 32, since said cap is carried by lid 14 and swings upwardly therewith to open position.

The upper end of the wick will now be ignited, and the lighter can be used for lighting a cigarette or cigar. The flame will be maintained steady, even in the presence of a strong wind, due to the provision of the chimney-like wind deflector or guard, having the flue action previously described.

When the lid is swung to closed position, should there be resistance on the part of the oppositely beveled edges of the tongue 50 and the latching plate 66 to their movement into an overlapping relation, the spring 70 will be loaded to an additional extent, and ultimately, with lid 14 in fully closed position, will build up sufficient force to shift the latching plate 66 into a locking position.

In the form of the invention shown in Figs. 13–15, the casing 12^a and lid 14^a are similar to the analogous parts of the first form. In fact, the modified construction is in all respects similar to the first form, except that the flint tube chamber is located at the front of the lighter, instead of the wick chamber. The wick chamber and flint tube chamber, as shown, are transposed, with the wick chamber located next to the fluid reservoir. Further, in the slide, there is mounted a spring-loaded plunger which permits fluid to be transferred from the reservoir to the wick chamber without requiring movement of the slide to the dotted line position of Fig. 2.

Thus, in the modified form, partitions 18^a, 20^a within the casing and the walls of the casing define a wick chamber 26^a next to the reservoir, and a flint tube chamber 24^a at the front of the lighter. The wick 28^a is similar to wick 28, and at its upper end, is mounted in a wick-supporting means similar to that of the first form. Further, a wind guard 76^a like that shown in Figs. 8 and 9 is used. Still further, an inverted wick cap 72^a, like that in the first form of the invention, is secured to a horizontal leg of a latching plate 66^a, similar to that in the first form except for elongation of the horizontal leg thereof.

Due to the fact that the spark thrown by the rotation of the flint wheel must travel toward the hinged end of lid 14^a, as distinguished from the first form of the invention, the rack 100^a is disposed at the opposite side of the ratchet wheel 92^a that rotates flint wheel 90^a. Flint wheel 90^a in the modified construction rotates in a clockwise direction, rather than in a counterclockwise direction such as that in the first form of the invention, when the flint wheel is being rotated to throw a spark. Of course, ratcheting means similar to that shown in Fig. 11 is used, to prevent counterclockwise rotation of the flint wheel 90^a when the lid is being lowered.

The flint tube 34^a is secured, at its lower end, in a support 44^a of inverted U-shape, having at its opposite end edges sealing strips 46^a extending about the elongated, rectangular slide 48^a. Adjacent the front or outer end of the slide, there is an opening 56^a, to provide access to the flint tube.

A rectangular opening, in the lower end of the partition 18^a, is provided throughout its edge with a similar sealing strip 102, engaging the slide so as to normally prevent leakage between the reservoir and the wick chamber.

When the slide is in its closed position, a combination filler and measuring opening 60^a formed in the slide is in communication with the reservoir. Communicating with the opening is the larger end of a tapered passage 106 opening at its smaller end into a rectangular recess 104 formed in the slide in communication with the wick chamber. The opening 106, at its smaller end, has a tapered valve seat against which normally seats a conical valve element 110 fixedly secured to one end of an arm 112 extending laterally from and rigid with the inner end of an elongated plunger stem 114 slidable in a longitudinal bore 116 of the slide 48^a. The stem 114 projects from the slide at its outer end and is provided with a knurled head 118. A spring 120 is circumposed about the stem 114 within recess 104 and normally biases the valve plunger to its closed position shown in full lines in Fig. 15. However, against the restraint

of the spring, the plunger can be shifted manually to its dotted line position of Fig. 15, thus to permit fluid to flow out of the reservoir through the passage 106 into the wick chamber.

Thus, it is seen that when a measured quantity of fluid is transferred to the wick chamber, one can shift the slide outwardly without moving the valve plunger in any respect, the slide being shifted to bring the opening 60a into communication with the wick chamber to transfer into the wick chamber the measured quantity of fluid contained in the opening 60a. The tapered passage 106 provides an extension of the opening 60a, so as to increase the measured quantity of fluid which is transferred.

If it is desired to transfer fluid without measuring the same, one can leave the slide in closed position and shift the valve plunger to the dotted line position of Fig. 15. As a result, fluid will begin flowing into the wick chamber until the valve plunger is permitted to seat once again. The fluid reservoir can be provided with means venting the same to atmosphere under these circumstances, and the wick chamber is of course in effect open to atmosphere due to the porosity of the wick extending upwardly through the top of the casing.

To facilitate the transfer of fluid into the wick chamber when the valve plunger is allowed to remain in closed position and the slide is moved outwardly, the passage 106 has a sloped top wall, as shown in Fig. 13, and a horizontal bottom wall. As a result, when the slide is moved to bring the opening 60a into communication with the wick chamber, the entire lighter can be inverted, and due to the sloped surface of the passage 106, which will now be on the bottom, the fluid will flow out of the passage 106 into the wick chamber.

While I have illustrated and described the preferred embodiments of my invention, it is to be understood that I do not limit myself to the precise constructions 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. A lighter comprising a casing, a lid therefor, a wick projecting out of the casing, means supporting the wick in the casing, means to charge the wick with a predetermined quantity of fluid, a tube in the casing adapted to hold a flint, a flint wheel rotatably mounted above the tube adjacent the wick, and means responding to elevation of the lid to rotate the wheel in a direction to strike a spark from the flint for igniting the wick, said casing including a pair of transversely extending partitions therein dividing the casing into a reservoir for lighter fluid, a wick chamber, and a flint tube chamber between the wick chamber and reservoir, said lighter including a slide in the lower end of the casing having an opening communicating, in the recessed position of the slide, with said reservoir, said slide being extendible out of the casing to a position in which said opening thereof is registered with the wick chamber, for transferring a quantity of fluid held in the opening from the reservoir to the wick chamber.

2. A lighter comprising a casing, a lid therefor, a wick projecting out of the casing, means supporting the wick in the casing, means to charge the wick with a predetermined quantity of fluid, a tube in the casing adapted to hold a flint, a flint wheel rotatably mounted above the tube adjacent the wick, and means responding to elevation of the lid to rotate the wheel in a direction to strike a spark from the flint for igniting the wick, said casing including a pair of transversely extending partitions therein dividing the casing into a reservoir for lighter fluid, a wick chamber, and a flint tube chamber between the wick chamber and reservoir, said lighter including a slide in the lower end of the casing having an opening communicating, in the recessed position of the slide, with said reservoir, said slide being extendible out of the casing to a position in which said opening thereof is registered with the wick chamber, for transferring a quantity of fluid held in the opening from the reservoir to the wick chamber, said lighter additionally including latch means carried by the lid and engageable with said slide in the recessed position of the slide, whereby to simultaneously hold the slide in recessed position while holding the lid closed.

3. A lighter comprising a casing, a lid therefor, a wick projecting out of the casing, means supporting the wick in the casing, means to charge the wick with a predetermined quantity of fluid, a tube in the casing adapted to hold a flint, a flint wheel rotatably mounted above the tube adjacent the wick, and means responding to elevation of the lid to rotate the wheel in a direction to strike a spark from the flint for igniting the wick, said casing including a pair of transversely extending partitions therein dividing the casing into a reservoir for lighter fluid, a wick chamber, and a flint tube chamber between the wick chamber and reservoir, said lighter including a slide in the lower end of the casing having an opening communicating, in the recessed position of the slide, with said reservoir, said slide being extendible out of the casing to a position in which said opening thereof is registered with the wick chamber, for transferring a quantity of fluid held in the opening from the reservoir to the wick chamber, said lighter additionally including latch means carried by the lid and engageable with said slide in the recessed position of the slide whereby to simultaneously hold the slide in recessed position while holding the lid closed, said latch means including a plate of inverted L-shape having a horizontal leg overlying the top of the casing and a vertical leg extending downwardly over the front of the casing and lid, the slide including an upwardly extending tongue positioned against the front of the casing, the upper end of said tongue and the lower end of said vertical leg overlapping in the closed position of the lid with the vertical leg being disposed to hold the tongue against the casing, whereby to maintain said slide in recessed position.

4. A lighter comprising a casing, a lid therefor, a wick projecting out of the casing, means supporting the wick in the casing, means to charge the wick with a predetermined quantity of fluid, a tube in the casing adapted to hold a flint, a flint wheel rotatably mounted above the tube adjacent the wick, and means responding to elevation of the lid to rotate the wheel in a direction to strike a spark from the flint for igniting the wick, said casing including a pair of transversely extending partitions therein dividing the casing into a reservoir for lighter fluid, a wick chamber, and a flint tube chamber between the wick chamber and reservoir, said lighter including a slide in the lower end of the casing having an opening communicating, in the recessed position of the slide, with said reservoir, said slide being extendible out of the casing to a position in which said opening thereof is registered with the wick chamber, for transferring a quantity of fluid held in the opening from the reservoir to the wick chamber, said lighter additionally including latch means carried by the lid and engageable with said slide in the recessed position of the slide whereby to simultaneously hold the slide in recessed position while holding the lid closed, said latch means including a plate of inverted L-shape having a horizontal leg overlying the top of the casing and a vertical leg extending downwardly over the front of the casing and lid, the slide including an upwardly extending tongue positioned against the front of the casing, the upper end of said tongue and the lower end of said vertical leg overlapping in the closed position of the lid with the vertical leg being disposed to hold the tongue against the casing, whereby to maintain said slide in recessed position, the overlapping portions of the latching plate and tongue having an inter-

engaging lug and notch releasably engageable to hold the lid in closed position and the slide in recessed position.

5. A lighter comprising a casing, a lid therefor, a wick projecting out of the casing, means supporting the wick in the casing, means to charge the wick with a predetermined quantity of fluid, a tube in the casing adapted to hold a flint, a flint wheel rotatably mounted above the tube adjacent the wick, and means responding to elevation of the lid to rotate the wheel in a direction to strike a spark from the flint for igniting the wick, said casing including a pair of transversely extending partitions therein dividing the casing into a reservoir for lighter fluid, a wick chamber, and a flint tube chamber between the wick chamber and reservoir, said lighter including a slide in the lower end of the casing having an opening communicating, in the recessed position of the slide, with said reservoir, said slide being extendible out of the casing to a position in which said opening thereof is registered with the wick chamber, for transferring a quantity of fluid held in the opening from the reservoir to the wick chamber, said lighter additionally including latch means carried by the lid and engageable with said slide in the recessed position of the slide whereby to simultaneously hold the slide in recessed position while holding the lid closed, said latch means including a plate of inverted L-shape having a horizontal leg overlying the top of the casing and a vertical leg extending downwardly over the front of the casing and lid, the slide including an upwardly extending tongue positioned against the front of the casing, the upper end of said tongue and the lower end of said vertical leg overlapping in the closed position of the lid with the vertical leg being disposed to hold the tongue against the casing, whereby to maintain said slide in recessed position, the overlapping portions of the latching plate and tongue having an interengaging lug and notch releasably engageable to hold the lid in closed position and the slide in recessed position, said latch means further including a shank depending from the horizontal leg of the latching plate and slidable in the lid, a spring circumposed about said shank, and a wick cap of inverted cup shape secured to the shank within the lid and engageable against said wick support means in wick-enclosing position, the spring being held under compression between the wick cap and lid, whereby to normally urge the wick cap to said position thereof while urging the latching plate to a tongue-engaging position.

6. A lighter comprising a casing, a lid therefor, a wick projecting out of the casing, means supporting the wick in the casing, means to charge the wick with a predetermined quantity of fluid, a tube in the casing adapted to hold a flint, a flint wheel rotatably mounted above the tube adjacent the wick, and means responding to elevation of the lid to rotate the wheel in a direction to strike a spark from the flint for igniting the wick, the flint rotating means comprising a gear wheel rotatably mounted adjacent said flint wheel to rotate with the flint wheel about a common axis, a rack rigid with the lid and meshing with said gear wheel, whereby to cause rotation of the gear wheel in one direction on elevation of the lid, and ratchet teeth on the flint wheel and gear wheel respectively, arranged to cause rotation of the flint wheel with the gear wheel when the gear wheel is rotated in said one direction, while permitting the flint wheel to remain stationary when the gear wheel is rotated in an opposite direction during return of the lid to a closed position.

7. A lighter comprising a casing, a lid therefor, a wick projecting out of the casing, means supporting the wick in the casing, means to charge the wick with a predetermined quantity of fluid, a tube in the casing adapted to hold a flint, a flint wheel rotatably mounted above the tube adjacent the wick, and means responding to elevation of the lid to rotate the wheel in a direction to strike a spark from the flint for igniting the wick, the flint rotating means comprising a gear wheel rotatably mounted adjacent said flint wheel to rotate with the flint wheel about a common axis, a rack rigid with the lid and meshing with said gear wheel, whereby to cause rotation of the gear wheel in one direction on elevation of the lid, and ratchet teeth on the flint wheel and gear wheel respectively, arranged to cause rotation of the flint wheel with the gear wheel when the gear wheel is rotated in said one direction, while permitting the flint wheel to remain stationary when the gear wheel is rotated in an opposite direction during return of the lid to a closed position, said ratchet teeth comprising a circumferential series of radially extending teeth of triangular cross section formed upon one face of the flint wheel, and at least one pair of diametrically opposite, complementary clutch teeth on the flint wheel contacting one face of the gear wheel.

8. A lighter comprising a casing, a lid therefor, a wick projecting out of the casing, means supporting the wick in the casing, means to charge the wick with a predetermined quantity of fluid, a tube in the casing adapted to hold a flint, a flint wheel rotatably mounted above the tube adjacent the wick, and means responding to elevation of the lid to rotate the wheel in a direction to strike a spark from the flint for igniting the wick, the flint rotating means comprising a gear wheel rotatably mounted adjacent said flint wheel to rotate with the flint wheel about a common axis, a rack rigid with the lid and meshing with said gear wheel, whereby to cause rotation of the gear wheel in one direction on elevation of the lid, and ratchet teeth on the flint wheel and gear wheel respectively, arranged to cause rotation of the flint wheel with the gear wheel when the gear wheel is rotated in said one direction, while permitting the flint wheel to remain stationary when the gear wheel is rotated in an opposite direction during return of the lid to a closed position, said ratchet teeth comprising a circumferential series of radially extending teeth of triangular cross section formed upon one face of the flint wheel, and at least one pair of diametrically opposite, complementary clutch teeth on the flint wheel contacting one face of the gear wheel, the flint rotating means further including a spring adapted to bias the flint wheel yieldably axially of said axis of rotation of the flint and gear wheels, into engagement with the gear wheel.

9. In a lighter, a casing having a wick chamber and a reservoir, a slide mounted in said casing and having an opening communicating with the reservoir in one position of the slide and communicating with the wick chamber in a second position of the slide, to transfer a measured quantity of fluid from the reservoir to the wick chamber, said slide having a second opening communicating with the wick chamber in the first slide position and a passage extending between and communicating with the respective openings, and valve means carried by the slide and normally closing said passage, said valve means being manually shiftable in the first slide position to permit free flow of fluid from the reservoir through said openings and passage into the wick chamber.

10. In a lighter, a casing having a wick chamber and a reservoir, a slide mounted in said casing and having an opening communicating with the reservoir in one position of the slide and communicating with the wick chamber in a second position of the slide, to transfer a measured quantity of fluid from the reservoir to the wick chamber, said slide having a second opening communicating with the wick chamber in the first slide position and a passage extending between and communicating with the respective openings, and valve means carried by the slide and normally closing said passage, said valve means being manually shiftable in the first slide position to permit free flow of fluid from the reservoir through said openings and passage into the wick chamber, said passage being of tapered formation, with the taper of the passage being in the direction of the second opening.

11. In a lighter, a casing having a wick chamber and

a reservoir, a slide mounted in said casing and having an opening communicating with the reservoir in one position of the slide and communicating with the wick chamber in a second position of the slide, to transfer a measured quantity of fluid from the reservoir to the wick chamber, said slide having a second opening communicating with the wick chamber in the first slide position and a passage extending between and communicating with the respective openings, and valve means carried by the slide and normally closing said passage, said valve means being manually shiftable in the first slide position to permit free flow of fluid from the reservoir through said openings and passage into the wick chamber, said passage being of tapered formation, with the taper of the passage being in the direction of the second opening, the passage having a top wall inclined from the horizontal when the lighter is in its upright position and a bottom wall horizontally disposed in said upright position of the lighter, said lighter when inverted, with the valve closed and the slide in its second position, being adapted to facilitate the transfer of fluid to the wick chamber by flow of the fluid along the inclined surface of the passage.

12. In a lighter, a casing having a wick chamber and a reservoir, a slide mounted in said casing and having an opening communicating with the reservoir in one position of the slide and communicating with the wick chamber in a second position of the slide, to transfer a measured quantity of fluid from the reservoir to the wick chamber,

said slide having a second opening communicating with the wick chamber in the first slide position and a passage extending between and communicating with the respective openings, and valve means carried by the slide and normally closing said passage, said valve means being manually shiftable in the first slide position to permit free flow of fluid from the reservoir through said openings and passage into the wick chamber, said passage being of tapered formation, with the taper of the passage being in the direction of the second opening, said valve means comprising a valve stem reciprocating in the direction of its length within the slide, a conical valve element carried by said stem and seating in one end of the passage, and spring means circumposed about the stem under tension effective to normally bias the valve element to a seated position, said stem projecting beyond one end of the slide and including a button for shifting the stem in one direction against the restraint of the spring to unseat the valve element.

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