Aug. 5, 1958 W. B. HINN 2,845,784

CIGARETTE LIGHTER

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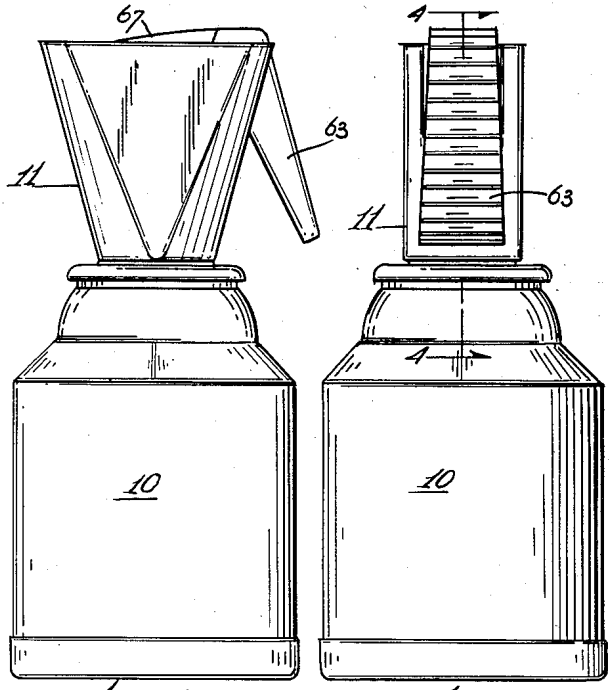
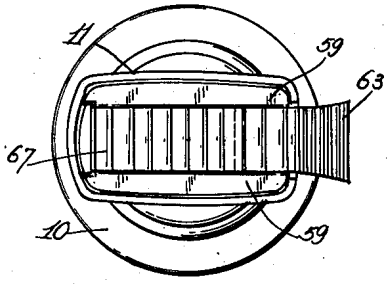


Fig. 1.

Fig. 2.



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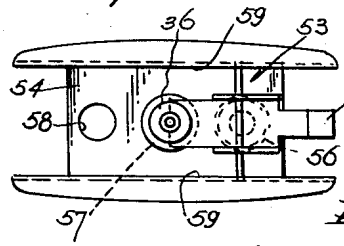

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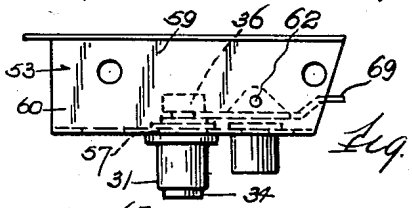

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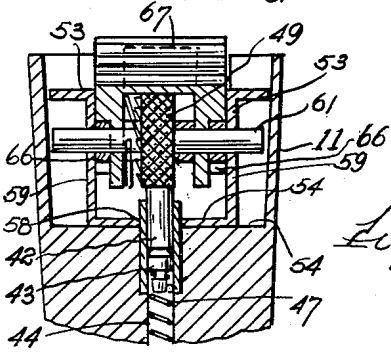

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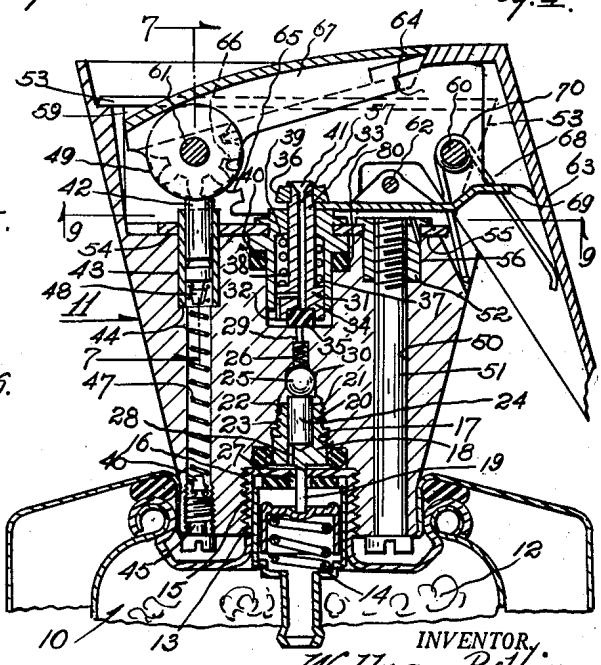

Fig. 4.

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CIGARETTE LIGHTER

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Fig. 8.

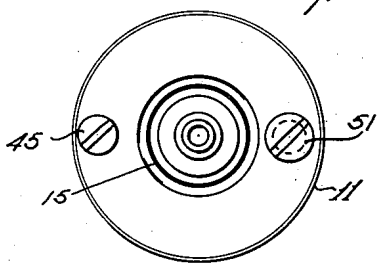


Fig. 9.

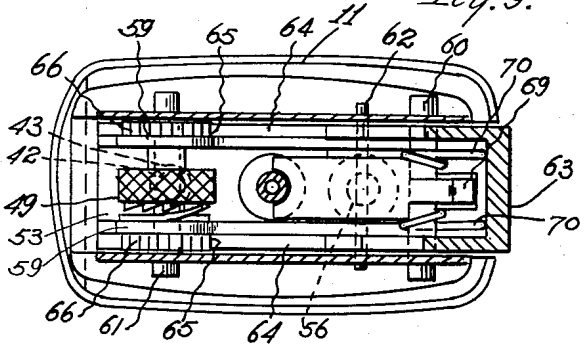


Fig. 11.

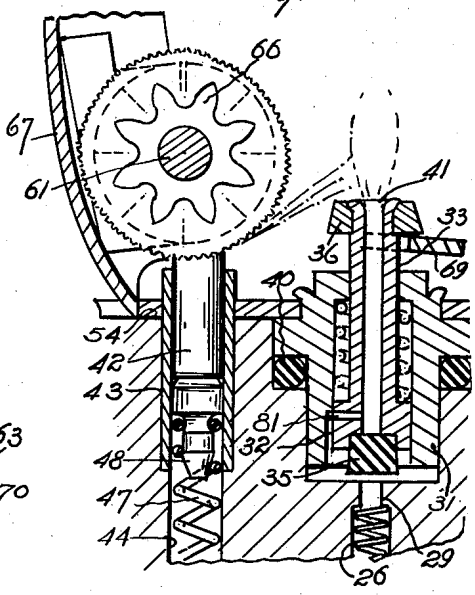
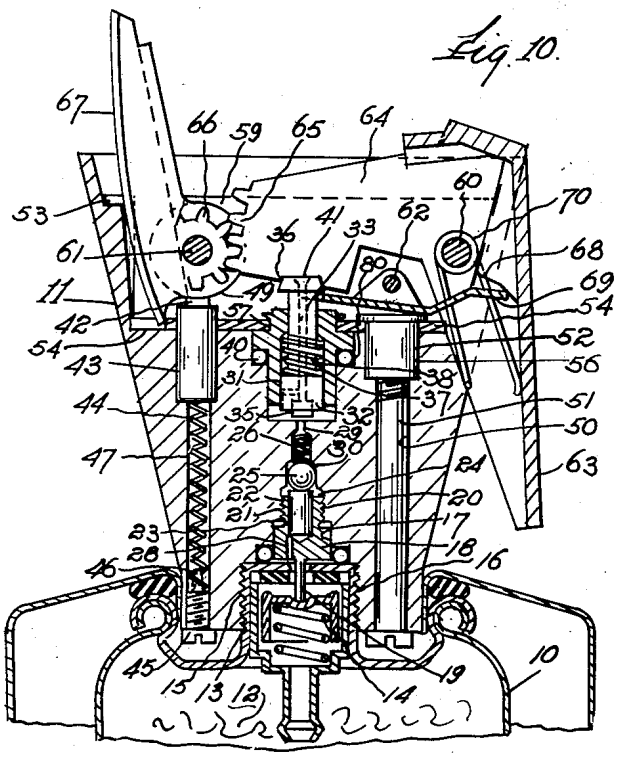


Fig. 10.



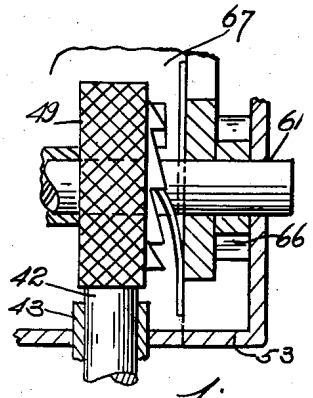


Fig. 12.

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CIGARETTE LIGHTER

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2 Claims. (Cl. 67—4.1)

My invention relates to a cigarette lighter which uses a detachable and replaceable fuel container using liquified petroleum flammable gas under pressure such as butane, isobutane or the like My cigarette lighter is primarily for table use for lighting cigarettes and cigars or the like. However, my cigarette lighter may be made small enough to be portable and carried in the pocket of the user.

It is among the objects of my invention to provide a cigarette lighter having unusual longevity in use. Heretofore cigarette lighters needed frequent refilling, whereas my lighter may be used without refilling for many thousands of lighting operations over a period of use extending into the years.

My cigarette lighter may be adjusted so as to provide a flame of desired height.

My cigarette lighter is designed to prevent clogging of parts. In addition the parts of my cigarette lighter are readily accessible for cleaning to prevent clogging.

My invention also comprises such other objects, advantages and capabilities as will later more fully appear, and which are inherently possessed by my invention.

While I have shown in the accompanying drawings a preferred embodiment of my invention, yet it is to be understood that the same is susceptible of modification and change without departing from the spirit of my invention.

Referring to the drawings, Fig. 1 is a side elevational view of my lighter; Fig. 2 is a rear elevational view; Fig. 3 is a top plan view; Fig. 4 is an enlarged detailed sectional view on line 4—4 of Fig. 2; Fig. 5 is a top plan view of the carrier; Fig. 6 is a side elevational view of the carrier; Fig. 7 is a detailed sectional view on line 7—7 of Fig. 4; Fig. 8 is a bottom plan view of the lighter head; Fig. 9 is a detailed sectional view on line 9—9 of Fig. 4; Fig. 10 is a detailed vertical sectional view of the lighter open for igniting; Fig. 11 is an enlarged detailed sectional view of the ignition wheel and parts; and Fig. 12 is a detailed sectional view of the flint and flint wheel.

The embodiment selected to illustrate my invention comprises a container **10** removably attached to a lighter head **11**. Within container **10** is a supply of liquified petroleum flammable gas under pressure such as butane, isobutane or the like, and an absorbent material **12** such as cotton or the like. This absorbent material keeps the fuel in the container in a state of absorption to prevent liquified fuel from passing upwardly in the metering mechanism. This is to prevent clogging.

The container **10** is fitted with a cap **13** and a self-closing valve **14**. The cap **13** has a central screw threaded protrusion **15** which permits the container **10** to be attached to the screw threads **16** of the lighter head **11**.

The lighter head **11** has a centrally positioned hollowed out portion **17** to house a metering mechanism **18**. This metering mechanism **18** is composed of a centrally located lower protruding pin **19** and integral thereabove an enlarged body portion **20** having screw threads **21** for engaging screw threads **22** in the walls **23** of the hollowed

out central portion **17** of the lighter head **11**. A pin **24** is mounted within said body portion **20**. A ball **25** rests on top of pin **24**. Above the pin **24** is a coiled spring **26**.

Pin **19** is inserted into cap **13** of container **10**. It moves valve **14** so as to permit gas to move upwardly from the container **10**, pass the sides of pin **19**, in space **27**. The gas then passes upwardly through hole **28** in body portion **20**, around ball **25** and through chamber **29** housing coiled spring **26**. The metering mechanism may be adjusted by movement of body portion **20**. When body portion **20** is screwed farther downward within central portion **17**, this allows greater space around ball **25** because said ball is withdrawn farther from shoulder **30**. This permits faster metering of the flow of gas. The body portion **20** is adjusted by being screwed upwardly within central portion **17**, so the space between the ball **25** and the shoulder **30** is constricted for the slower metering of the fuel.

An opening and closing mechanism **31** is centrally positioned in an upper central opening **32** in the body of the lighter head **11** above the metering mechanism **18**. This mechanism **31** has a plunger **33** with an enlarged bottom **34** and carries therebelow a rubber plug **35**. The plunger **33** also has an upper end which is flanged to provide a head **36**. The plunger is normally held in downward position by a compression spring **37** placed around the vertical portion **38** of the plunger above the enlarged bottom **34** and a retent **39** at its upper portion. A sealing gasket **40** is positioned by shoulder **80** within opening **32**.

When the rubber plug **35** is in downward or closed position, the flow of gas is stopped from coming upward from chamber **29**. When the plunger **33** moves upwardly this permits the rubber plug **35** to rise and permit the passage of fuel from chamber **29** to passageway **41**, through cross hole **81**.

A flint **42** is housed in sleeve **43** which is mounted in a vertical opening **44** in the side portion of lighter head **11**. The top of the sleeve **43** extends slightly above the floor of the lighter head **11**. The opening **44** continues downwardly through the lighter head **11**. A screw threaded closure **45** fits into the bottom of the opening **44** and has an inner centering pin **46** for holding and centering a coiled spring **47**. The upper end of the coiled spring **47** is fitted within a downwardly extending centering member **48**, the top of which supports a flint **42**. The compression of the spring **47** applies pressure on the flint **42** which extends above the floor of lighter head **11** for contact with a flint wheel **49** for sparking action.

Through the other side of the lighter head **11** is an opening **50** housing a bolt **51** which has a screw threaded portion engaging the screw threads of a nut **52**, the head of which bears against carrier **53**.

Carrier **53** is a U-shaped member having a bottom portion **54** positioned on the floor **55** of lighter head **11**, and having an opening **56** which receives nut **52**. The opening and closing mechanism **31** extends through central opening **57** and is staked to carrier **53**. Carrier **53** also has another opening **58** on the other side to receive sleeve **43**.

Carrier **53** as a pair of spaced arms **59** through which extend shaft **60** pivotally supported thereby. A second shaft **61** extends through said spaced arms **59** adjacent the opposite end thereof. A smaller shaft **62** extends through the lower portion of arms **59** between shafts **60** and **61**.

An actuating handle **63** has a pair of spaced side arms **64** extending within side arms **59** of carrier **53**. Shaft **60** also extends through side arms **64** and permits handle **63** to pivot on carrier **53**. At one end, each of

side arms 64 has teeth 65 engaging a gear 66 on each side of flint wheel carrier 67 pivotally carried by shaft 61 on the opposite portion of carrier 53. When teeth 65 and gear 66 interengage and are moved by actuation of handle 63, flint wheel 49 of flint wheel carrier 67 rotates against flint 42. This contact of the flint wheel and flint produces sparks in the direction of the center of the lighter head which ignites the fuel or gas coming up the center opening.

The movement of the handle 63 operates gas opening and closing mechanism 31. It does so in this way. Handle 63 has a cam 68 which when the handle is moved downwardly bears against an actuating arm 69 pivoting on pin 62 and moving the actuating arm 69 upwardly at its inner end to move gas releasing mechanism 31 upwardly and permit gas to escape and be ignited.

A spring 70 is mounted on shaft 60 and normally exerts pressure on handle 63 to retain the same in closed position.

Having thus described my invention, I claim:

1. A cigarette lighter comprising a body member having means at its bottom for central and removable insertion into and screwthreaded attachment to the top of a standard and disposable container containing a supply of liquefied petroleum flammable gas under pressure and providing communication with the gas in said container, said body member having a central hollowed out portion, a metering mechanism housed in said hollowed out portion of said body member, an opening and closing mechanism housed in said body member directly above said metering mechanism, said opening and closing mechanism having a spring adapted normally to hold said opening and closing mechanism in position to close the central hollowed out portion, a flint housed in said body member adjacent one side of said body member, a carrier attached to and position within the upper portion of said body member, a flint wheel holder pivotally attached to said carrier and having gear teeth, a flint wheel positioned within said flint wheel holder and pivotally attached to said carrier adjacent said flint, a handle pivotally attached to said carrier on the side opposite said flint and said flint wheel, said handle having gear teeth at one end, a lever pivotally attached to said carrier, said handle having a cam, said handle adapted upon being moved to its cam against said lever to move said opening and closing mechanism away from closed position to permit the flow of gas through the top of the central hollowed out portion of said body member, said handle upon being moved also engaging the gear teeth of said flint wheel holder with its gear teeth to move said flint wheel against said flint to direct sparks centrally to the flowing gas and igniting the same into flame, said handle upon being moved in the opposite direction to move its cam away from said lever to permit the lever to allow the spring attached to the opening and closing mechanism to move the opening and closing mechanism to closed position to block the flow of gas and extinguish the flame.

2. A cigarette lighter comprising a body member having means at its bottom for central and removable insertion into and screwthreaded attachment to the top of a standard and disposable container containing a supply of liquefied petroleum flammable gas under pressure and providing communication with the gas in said container, said body member having a central hollowed out portion, a metering mechanism housed in said hollowed out portion of said body member adjacent its bottom and adapted to receive and measure a desired amount of gas from said container, an opening and closing mechanism housed in said body member directly above said metering mechanism, a flint housed in said body member adjacent one side of said body member, a carrier attached to and positioned within the upper portion of said body member, said carrier being U-shaped and having a pair of spaced arms, a shaft extending through said spaced arms adjacent said flint, a flint wheel holder pivotally attached to said carrier and having gear teeth, a flint wheel positioned within said flint wheel holder and rotatable on said shaft, another shaft extending through said spaced arms on the side opposite to said first mentioned shaft, a handle pivotally attached to said second mentioned shaft, said handle having gear teeth at one end, a third shaft located between said first two mentioned shafts, said third shaft pivotally mounted and extending between said spaced arms, a lever carried by said third mentioned shaft, said opening and closing mechanism having a plunger for closing the central hollowed out portion, and a spring for normally holding the plunger in closed position, said handle having a cam, said handle adapted upon being moved to move its cam against said lever to move the plunger away from closed position to permit the flow of gas through the top of hollowed out portion, said handle upon being moved also engaging the gear teeth of said flint wheel holder with its gear teeth to move said flint wheel against said flint to direct sparks centrally to the flowing gas and ignite the same into flame, said handle upon being moved in the opposite direction to move its cam away from said lever to permit the spring on the opening and closing mechanism to move the plunger to close the central hollowed out portion, block the flow of gas and extinguish the flame.

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