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R. S. GANS

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CIGARETTE LIGHTER

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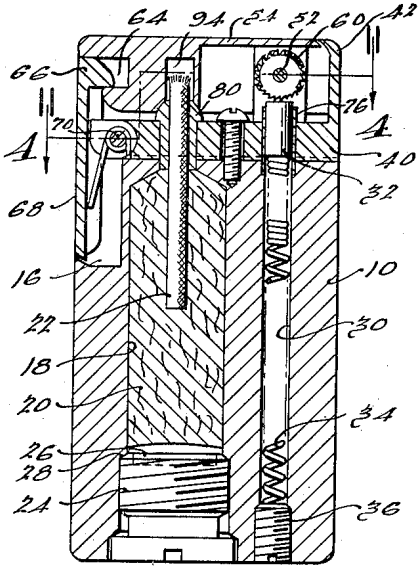


FIG. 1.

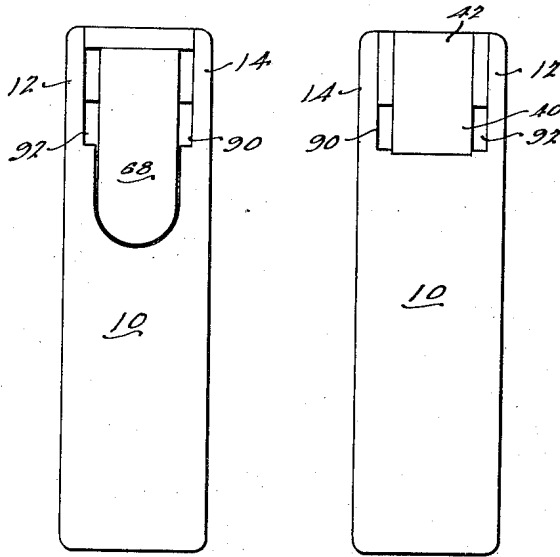


FIG. 2.

FIG. 3.

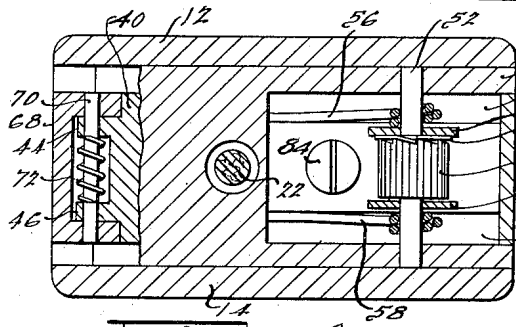


FIG. 4.

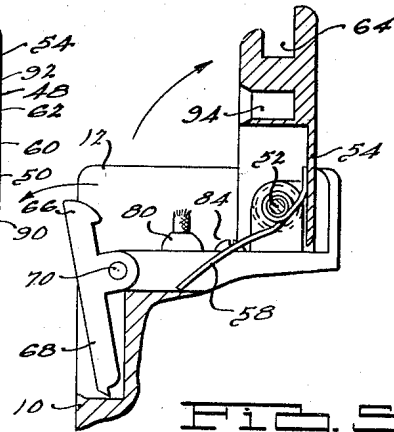


FIG. 5.

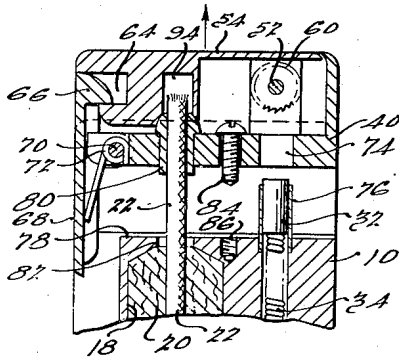


FIG. 6.

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# UNITED STATES PATENT OFFICE

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## CIGARETTE LIGHTER

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1 Claim. (Cl. 67—7.1)

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This invention relates generally to cigarette lighters and more particularly to an extremely simple, novel and improved type of lighter construction which embodies certain advantages not heretofore obtained.

The primary object of my invention is to provide a cigarette lighter construction which is not only attractive and ornamental in appearance, but which readily lends itself to easy and convenient fabrication on high speed, modern production machinery.

Still further, the invention contemplates a provision of a cigarette lighter construction in which the body thereof is formed from a single, solid bar of the material, thereby eliminating soldering, welding and the many various expensive assembly operations normally incident to the manufacture of devices of this general character.

Still further, the invention contemplates the provision of a cigarette lighter construction in which the body thereof provides a reservoir for fluid and a storage space for flints and to which a unitary mechanism comprising the operating parts of the lighter may be so assembled that pins or other fastening means are not visible on the exterior of the lighter, thereby making the same unusually attractive.

Still further, this invention contemplates the provision of a cigarette lighter construction in which the wick is automatically lighted as the cover opens.

Many other and further objects, advantages, and features of the present invention will become clearly apparent from the following specification, when considered in conjunction with the drawings forming a part thereof, and the claim hereinafter set forth.

Fig. 1 is a vertical, sectional view through a lighter construction embodying improvements of the present invention;

Fig. 2 is a front elevational view of the lighter construction illustrated in Fig. 1;

Fig. 3 is a rear elevational view of the lighter construction of Fig. 1;

Fig. 4 is a section taken substantially on line 4—4 of Fig. 1, showing a unitary mechanism assembled in the body of the lighter;

Fig. 5 is a vertical, sectional view partly broken away and illustrating the lighter cover open and the cover latching means in disengaged position;

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Fig. 6 is a vertical, sectional view through the lighter construction shown in Fig. 1 and partly broken away and illustrates the unitary mechanism being assembled into the body of the lighter.

With more particular reference to the drawings, it will be readily apparent that the lighter construction specifically illustrated in the drawings and described below is merely illustrative of one form of lighter construction which embodies numerous of the novel and improved features of the present invention.

While the particular material from which the body of the improved lighter construction of the present invention may be fabricated forms no part of the present invention, it has been found preferable to manufacture the body of the lighter from bar stock of magnesium, aluminum, or similar metals. This provides a construction which is easily machined, which readily lends itself to an attractive exterior finish, and which inherently results in a product which is light in weight and simple to manufacture.

The bar stock from which the body portion of the lighter is manufactured is preferably rectangular in transverse cross-section and a suitable length thereof is cut off to provide a body portion 10. One end of this body may be milled away to provide upstanding side portions 12 and 14 between which a unitary mechanism to be hereinafter described is mounted. The forward portion of the body 10 is also machined away to form a groove or recess 16 and a bore 18 of considerable size is drilled into the body for receiving the wadding 20 which absorbs the fluid and prevents the wick 22 from becoming too wet to light. The bore 18 is closed at the bottom by the plug 24 which is threaded into a tapered portion of that bore and is provided with a frusto-conical surface at 26 adapted to enter into engaging relationship with a tapered surface 28 in an enlarged portion of the bore 18 to positively seal the bore 18 and prevent leakage. Another bore 30, spaced from the bore 18, is provided for receiving the concealed flint 32 which is maintained in operative position by means of the spring 34 within the bore 30. A plug 36 threaded into the lower end of the bore 30 retains the spring 34 in the bore 30.

The unitary mechanism mentioned in the foregoing consists of operative parts of the lighter

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which in the process of manufacture are assembled into a sub-assembly, thus greatly facilitating manufacture, and then assembled as a unit between the walls 12 and 14 of the body 10. The unitary mechanism comprises a holder or supporting member 40 which is substantially L-shaped, having the upwardly directed member 42 at one end and provided with ears 44 and 46 at the other end. Near end 42 of the supporting member 40, a pair of posts 48 and 50 are machined and a pin 52 extends between and passes through the posts 48 and 50. A cover 54 is mounted on the pin 52 to be urged from closed to open position by springs 56 and 58. It will be observed that each spring has one end which bears upon the cover 54 and another end which bears upon the body 10 of the lighter, when the unitary mechanism is assembled between the walls 12 and 14, and when the cover is released, by latching means to be described hereinafter, the springs urge the cover to open position.

A toothed wheel 60 is also mounted on the pin 52 between the posts 48 and 50 and thus is in position, when the mechanism is assembled between walls 12 and 14, to engage the flint 32 for causing sparks to be emitted from the flint and thereby effecting ignition of the wick 22 when the wheel 60 is rotated. Rotation of the wheel 60 is accomplished by means of a split washer 62 mounted on the pin 52 adjacent the ratchet teeth on the side of the toothed wheel 60. One of the ends of the split washer 62 engages a tooth on the side of the wheel 60 and as the cover is opened the washer 62 rotates to drive the wheel 60 for causing the same to scrape the top of the flint 32 which, at that time, emits sparks.

At the forward end of the cover 54, as may be seen in Figs. 1, 5, and 6, a notch 64 is formed. The notch 64 cooperates with the formed end 66 of a latching member 68, which is rotatably supported by a pin 70 extending transversely between and passing through the ears 44 and 46 of the mounting member 40, and is normally urged into engagement with the notch 64 by a spring 72 also mounted on the pin 70. As may be seen in the figures, the spring 72 has an end which forcibly engages the lower end of the latching member 68 while the opposite end of that spring engages the supporting member 40, consequently, the spring 72 cannot rotate about the pin 70 and therefore urges the lower end of the latching member 68 outwardly to force the formed end 66 into notch 64 for locking the cover 54 in closed position. To open the cover 54, the latch 68 may be pressed inwardly against the action of the spring 72. In this manner, the formed end 66 of the latching member 68 is moved out of the notch 64 and, at that time, springs 56 and 58 cause the cover 54 to open rapidly and rotate the toothed wheel 60 against the flint 32.

After the mechanism described in the foregoing is assembled into a unit, the same is inserted between the walls 12 and 14 of the body 10, as may be seen in Fig. 6. At that time, an opening 74, immediately below the toothed wheel 60, registers with a cylindrical collar 76 mounted in the housing 10 to serve as a guide for the flint 32. When the supporting member 40 is against a surface 78 of the body 10, a wick holder 80 is put in position to extend through the member 40 into a bore provided therefor at the upper end of the bore 18. After this, a screw 84 which extends through the member 40 is threaded into the tapped opening 86 provided in the base 10 and the assembly of the lighter is complete.

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When this unitary mechanism is assembled to the lighter body, the lower end of the latching member 68 is disposed in the previously mentioned recess 16 provided in the forward part of the lighter body 10, and it may be pressed inwardly in that recess to effect opening of the cover 54.

Thus, it will be appreciated that all the operating parts of the lighter are concealed between the walls 12 and 14 of the body 10 so that pins or other fastening means do not detract from the external appearance of the lighter.

In order to sustain combustion, it is necessary to supply air to the wick 22, and the lighter of this invention provides novel and improved means for supplying air to the wick. To accomplish this, grooves 90 and 92 extend transversely of the body 10 with one on each side of the supporting member 40. The grooves 90 and 92 supply air in an upward direction to the wick 22 inasmuch as the heated air surrounding the wick rises, allowing cool air to be drawn in through the slots. This updraft of air serves also to remove the products of combustion which would otherwise smother the flame. Further, it may be observed that the wick 22 is well shielded by the walls 12 and 14 and the end 42 of the member 40 and the upper end of the latching member 68 to prevent extinguishment of the flame due to sudden drafts, and therefore the lighter of this invention supplies a steady flame under severe conditions.

To extinguish the flame of the lighter a blind opening 94 is drilled in the cover 54 and permits the cover to close upon the wick holder 80 in such manner that the metal in which opening 94 is drilled contacts the wick holder 80. The supply of air is then cut off to the wick 22 and the flame extinguished.

It will be clear from the foregoing description that the lighter shown in the drawings and described above has been illustrated and described in rather specific detail. Obviously, many modifications, changes, and departures from the above described construction may be made without departing from the generic spirit and scope of the invention as set forth in the subjoined claim.

What is claimed is:

A cigarette lighter construction comprising a generally rectilinear body portion having a central portion of the upper end thereof milled away to provide a pair of parallel upstanding side walls in substantial continuation of the sides of the body portion, said body portion having a relatively large bore therethrough extending upwardly from the bottom to a point adjacent the upper end thereof, said bore being provided with a suitable closure at its lower end and serving to provide a fuel chamber, said body portion being provided with a second but substantially smaller bore generally parallel to and spaced from said first mentioned bore, said last mentioned bore extending upwardly throughout the entire length of the lighter body, a bracket assembly for mounting ignition operating means removably on the upper end of the lighter body between said upstanding side walls, means for detachably anchoring said bracket in position on said lighter body, a pair of apertures through said bracket, one of said apertures providing communication with said fuel chamber and serving to support and house a capillary wick, the other aperture serving to constitute an extension of said second bore above mentioned and serving to house an ignition flint, said bracket assembly including a

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pair of upstanding lugs, a toothed ignition wheel journalled mounted between said lugs and located immediately above said ignition flint, a cover member adapted to provide a closure for the entire upper end of said lighter, said cover member having a pair of depending flanges serving to pivotally mount said cover member coaxially with said ignition wheel, means drivingly connecting said cover member with said ignition wheel whereby opening of said cover will effect rotation of said wheel, and a latch member pivotally mounted at the forward end of said bracket assembly, said latch member having a portion extending above said pivot adapted to engage said cover and a portion extending below said pivot to provide means for releasing said latch from engagement with said cover.

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