Jan. 10, 1956 F. N. LADNER 2,729,959

TURRET TYPE CIGARETTE LIGHTER

Filed June 12, 1953

Fig. 1

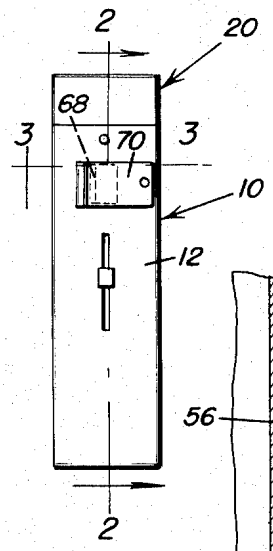


Fig. 2

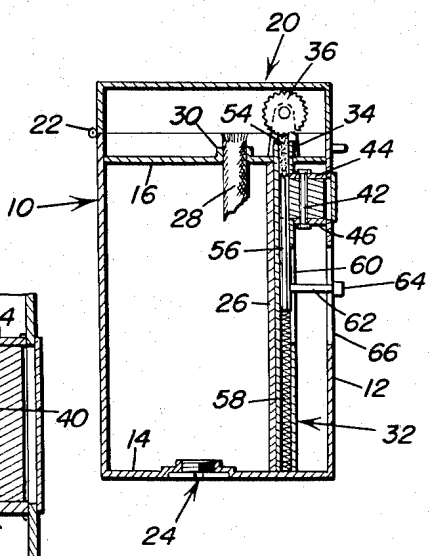


Fig. 4

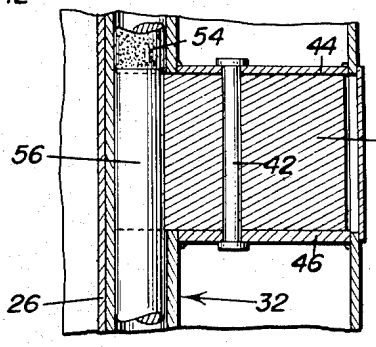


Fig. 3

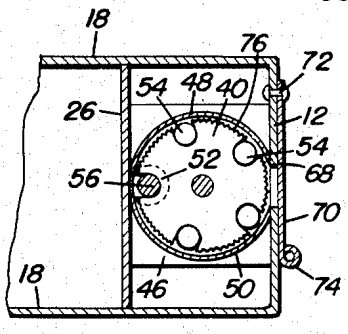


Fig. 6

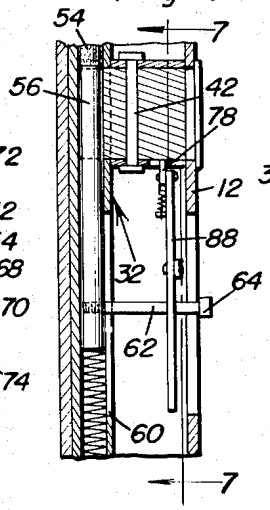


Fig. 5

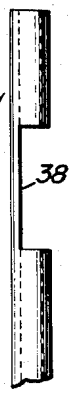
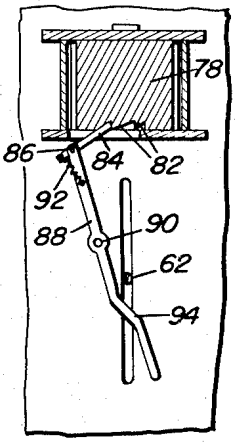


Fig. 7



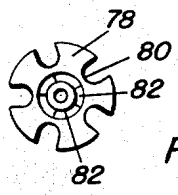


Fig. 8

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TURRET TYPE CIGARETTE LIGHTER

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Application June 12, 1953, Serial No. 361,124

2 Claims. (Cl. 67—7.1)

This invention relates generally to improvements in cigarette lighters and pertains more particularly to a cigarette lighter having a flint magazine therein.

A primary object of this invention is to provide an improved form of cigarette lighter which incorporates means whereby a plurality of flints are carried thereby and are selectively usable as the preceding flint is used up.

Another object of this invention resides in the provision of an improved form of cigarette lighter which includes a loading wheel and plunger assembly and associated actuating means therefor for selectively projecting flints into the flint tube of the lighter for subsequent use.

These together with other objects and advantages which will become subsequently apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming a part hereof, wherein like numerals refer to like parts throughout, and in which:

Figure 1 is an end elevational view of a lighter constructed in accordance with this invention;

Figure 2 is a vertical section taken substantially along the plane of section line 2—2 of Figure 1 showing details of the internal construction of the lighter;

Figure 3 is a horizontal section taken substantially along the plane of section line 3—3 of Figure 1 showing details of the loading assembly on enlarged scale;

Figure 4 is a vertical section showing a portion of the assembly as shown in Figure 2 and showing details of the loading assembly on enlarged scale;

Figure 5 is a plan view of the flint tube;

Figure 6 is a vertical section showing a portion of the assembly shown in Figure 2 and showing the loading assembly and associated control means;

Figure 7 is a vertical section taken substantially along the plane of section line 7—7 of Figure 6 showing details of the loading control assembly; and

Figure 8 is a plan view of the loading wheel.

Referring now more particularly to the drawings, reference numeral 10 indicates generally the main housing of the cigarette lighter which includes an end wall 12, bottom wall 14, top wall 16 and the side walls 18. The lighter is provided with a conventional cover 20 hingedly secured thereto at one end, as indicated by the reference numeral 22. Bottom wall 14 is provided with the usual filler plug 24 and the partition wall 26 extending between the side walls 18 subdivides the interior of the housing or casing into the usual fluid chamber into which the filler plug opening enters and within which the wick 28 is disposed, the free end of this wick being projectible through a suitable opening in the top wall 16 which is defined by the upstanding flange portion 30, as shown. The portion of the lighter assembly between the partition wall 26 and the end wall 12 comprises the flint and flint loading chamber, as will presently appear.

A flint tube, indicated generally by the reference character 32, is disposed adjacent the partition wall 26 between it and the end wall 12, and the upper end 34 of

the tube projects through a suitable opening in the top wall 16 and terminates just below the flint wheel 36 which is rotatably carried by the top wall 16 in a well known manner.

Referring now more particularly to Figures 2–6, it will be seen that the flint tube 32 is provided adjacent its upper end with a cut-away portion 38 through which peripheral portions of the loader wheel 40 project, this wheel being rotatably carried by a pin 42 extending between the top and bottom cover plates 44 and 46, respectively, which are secured at opposed edges to the partition wall 26 and end wall 12, respectively. Arcuate side walls 48 and 50 are carried by these cover plates in enclosing relation to the wheel 40, the adjacent ends of the arcuate walls being spaced apart in the manner shown for a purpose presently apparent. The loader wheel 40 is provided with radially extending circumferentially spaced notches 52 which constitute, in conjunction with the top and bottom cover plates and the side walls 48 and 50, retaining recesses for the plurality of flints 54 disposed therein.

A plunger 56 is reciprocally received within the flint tube 32 and the spring 58 disposed in the lower portion of this tube normally urges the plunger to an upper position therein. An intermediate portion of the tube below the cut-away portion 38 is provided with the elongated opening 60 through which one end of the plunger rod 62 projects, this rod being threadedly engaged adjacent the lower end of the plunger and extending laterally therefrom to terminate in a finger knob 64 exteriorly of the end wall 12, the opening 66 being provided therein so that the rod may be manually moved up and down to reciprocate the plunger within the flint tube.

In operation of the device thus far described, it will be clear that the opening 68 adjacent the loader wheel 40 provides a means by which the loader wheel may be manually turned so that its various notches 52 are in register therewith for receiving flints which are to be subsequently used, the plunger 56 being moved to a downward position out of engagement with the loader wheel by means of the rod 62 when the loader wheel is rotated to fill the same with flints. To prevent the entrance of dirt and also to prevent flints from falling out of the loader wheel, the opening 68 is provided with the pivoted cover plate 70 which is rotatably secured, as by the pin 72, at one end to the side wall 12, the other end of the plate being provided with the lip portion 74 for manual manipulation. When the wheel has been completely loaded, the plunger rod is released so that the plunger may slide upwardly within the flint sleeve and carry with it one of the flints 54 to the position shown in Figure 2 wherein the flint will be engaged by the flint wheel 36 in the well known manner. The loader wheel 40 is, of course, provided with serrations 76 on its outer surface for ease in manipulation as by flicking with the finger through the opening 68 in the end wall 12.

Referring now more particularly to Figures 6–8, it is to be noted that the entire assembly shown is identical to the construction previously described, with the exception of the loader wheel 78 and its associated actuating mechanism hereinafter described. As seen most particularly in Figure 8, the loader wheel 78 is provided with a smooth outer surface having the circumferentially spaced radial notches 80 therein which cooperate in the same manner as the previously described notches in the loader wheel 40 with the arcuate enclosing side wall portions 48 and 50 and the top and bottom cover plates 44 and 46 to receive flints. The lower portion of this loader wheel 78 is provided with teeth 82 with which one end of the pawl 84 is engageable, this pawl being pivotally carried as by the pin 86 secured to the actuating lever 88 whose intermediate portion is pivotally secured by the pin 90 to the side wall 12. A spring 92 extending

between the actuator lever **88** and the pawl **84** normally urges the latter into engagement with the teeth **82**. The angulated lower end portion **94** of the actuating lever **88** forms a cam surface against which the plunger rod **62** is wipingly engaged when this rod is moved to a downward position withdrawing the plunger **56** from within a corresponding notch **80** in the loader wheel **78**.

It will be appreciated that there are an equal number of teeth **82** and notches **80** in the loader wheel so that as this wheel is rotated in step-by-step fashion as the plunger rod is moved accordingly, successive notches **80** will be registered with the inner bore of the flint tube **32**.

From the foregoing, the construction and operation of the device will be readily understood and further explanation is believed to be unnecessary. However, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction shown and described, and accordingly, all suitable modifications and equivalents may be resorted to, falling within the scope of the appended claims.

What is claimed as new is as follows:

1. A flint loading assembly for cigarette lighters comprising a tube, a plunger reciprocably received in said tube and normally urged to an upper position therein, a loader wheel rotatably carried by said tube, the axis of rotation of the wheel being parallel therewith, said tube having an opening adjacent its upper end through which said wheel is projectible, said wheel having circumferentially spaced flint-receiving notches selectively registrable with the bore of said tube, a lateral stem on said plunger for manually reciprocating said plunger, and actuating means for rotating said wheel in step-by-step fashion, said actuating means being operable by the stem upon movement of the plunger from its upper position,

said stem projecting outwardly of the casing, said actuating means including a lever pivoted intermediate its ends to said casing and having a cam portion disposed in the path of movement of said stem and wipingly engaged by said stem.

2. A cigarette lighter comprising a casing, a tubular member in said casing extending outwardly thereof at one end, a flint wheel carried by said casing above said one end of the tube, a plunger in said tube normally spring-urged towards said one end of the tube, said tube having a cut away portion adjacent said one end, loader means rotatably carried by said casing having flint-receiving apertures therein selectively registrable with the bore of said tube through said cut away portion, a lateral stem on said plunger for manually moving said plunger toward the lower end of said tube, means for rotating said loader means engaged and operated by said stem upon movement of said plunger toward the lower end of the tube, said stem projecting outwardly of the casing, the last-named means including a lever pivoted intermediate its ends to said casing, and having a cam portion traversing said stem and disposed in the path of movement of said stem and wipingly engaged by said stem.

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