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CIGARETTE LIGHTER

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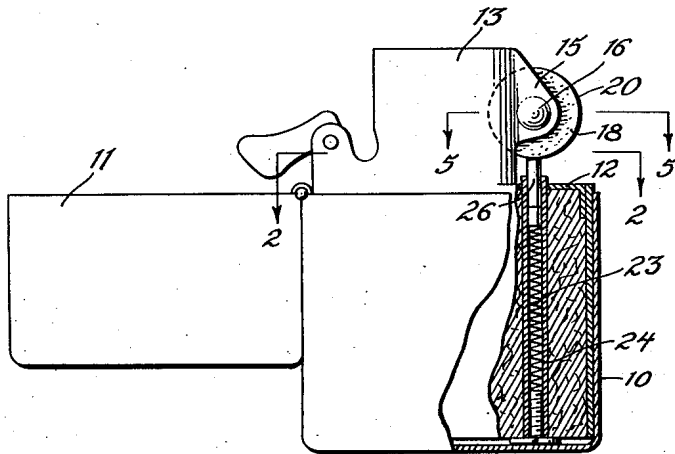


Fig. 1.

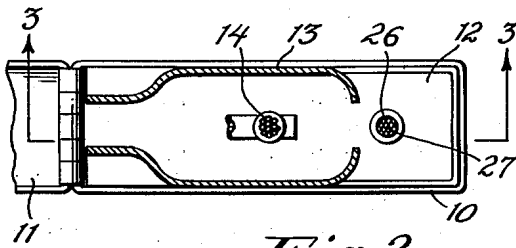


Fig. 2.

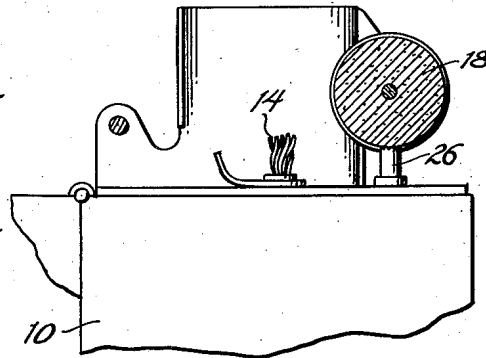


Fig. 3.

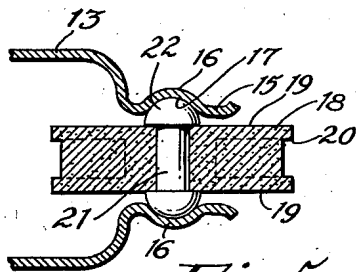


Fig. 5.

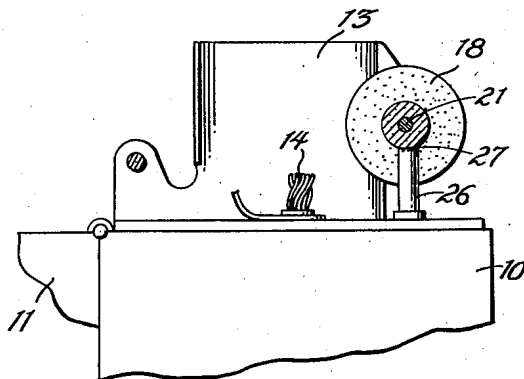


Fig. 4.

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**CIGARETTE LIGHTER**

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1 Claim. (Cl. 67—7.1)

This invention relates to the art of cigarette lighters and is concerned primarily with a novel flint and steel arrangement which affords a long service life for the flint.

At the present time, the conventional cigarette lighter includes a flint and steel for generating the spark that ignites the wick. In accordance with the prevailing practice, the steel takes the form of a wheel having a serrated or roughened peripheral edge and which wheel is rotatably mounted. The flint consists of a small piece that is engaged by the steel as the latter is rotated.

The foregoing arrangement has proven to be unsatisfactory and inconvenient in that a flint quickly wears down and must be replaced from time to time. This replacement is a highly annoying factor to the owner of the lighter.

With the foregoing conditions in mind, the present invention has in view as its foremost objective, the provision of a cigarette lighter including a flint in the form of a wheel or disc that is rotatably mounted, and a steel that comprises a small piece having a roughened or serrated surface that engages the peripheral edge of the flint. With such an arrangement, it is possible to employ a flint of comparatively large size and which flint will have a comparatively long service life.

It is, of course, necessary that the steel engage the flint to generate the spark and this engagement must be preserved as the flint wears down. Thus, another highly important object is to provide, in a cigarette lighter of the character indicated, a steel that is spring biased to constantly engage the peripheral edge of the flint. This end is achieved by mounting the steel on the end of a coil spring that is incorporated in one type of conventional lighter now meeting with widespread use to support the flint. As the flint wears, the spring always urges the steel into engagement therewith.

In order to generate the spark, it is, of course, necessary to rotate the flint. This is accomplished by the thumb of the user with a well-known and conventional operation. Should the flint become worn and its diameter reduced, the rotation thereof, under the influence of the thumb of the user, becomes increasingly difficult. Hence, a further object is to provide, in a cigarette lighter of the type indicated, a flint and steel combination in which the flint takes the form of a wheel or disc having a thickness appreciably greater than the width of the steel. Thus, as the flint wears, an annular groove is formed therein leaving, at least, a portion of the flint with its original diameter. Thus, the user always has, at least, a portion of the disc in its original diameter for engagement by the thumb for rotating purposes.

Various other more detailed objects and advantages of the invention, such as arise in connection with carrying out the above-noted ideas in a practical embodiment, will in part become apparent and in part be hereinafter stated as the description of the invention proceeds.

The invention, therefore, comprises a cigarette lighter including flint in the form of a wheel or disc together

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with a spring biased steel engaging the peripheral edge of the flint, and with the steel having a width less than the thickness of the flint.

For a full and more complete understanding of the invention, reference may be had to the following description and accompanying drawing wherein:

Figure 1 is a view in side elevation of a cigarette lighter including a flint and steel designed in accordance with the precepts of this invention and with the lighter casing opened.

Figure 2 is a horizontal section taken through the shield that protects the torch and is taken about on the plane represented by the line 2—2 of Figure 1.

Figure 3 is a detailed vertical section on an enlarged scale and is taken about on the plane represented by the line 3—3 of Figure 2.

Figure 4 is a view similar to Figure 3 after the flint has been worn down an appreciable amount; and

Figure 5 is an enlarged detailed horizontal section through the support for the flint and is taken about on the plane represented by the line 5—5 of Figure 1.

Referring now to the drawing wherein like reference characters denote corresponding parts, and first more particularly to Figure 1, a cigarette lighter is therein illustrated as comprising a main body or casing 10 on which is hingedly mounted a cover 11. As shown in Figure 2, the casing 10 includes a top wall 12 from which upstands a shield 13 that is open at the top and which serves to protect the torch that is created by ignition of the wick 14.

The shield 13 comprises two complementary halves and formed on the edges of these shield halves, remote from the hinge mounting of the cover, are ears 15. These ears 15 are, in turn, formed with outwardly projecting bosses 16 which define inwardly opening recesses 17 for a purpose to be later specified.

A flint 18 takes the form of a wheel or disc that may be made from an appropriate composition that is well-known in this art. This flint 18 has side faces 19 and a peripheral edge 20. While the side faces 19 might be formed with rounded protuberances for reception in the recesses 17, the invention has particularly in mind, the use of a stub shaft 21 that is incorporated into the flint 18 at the axis thereof, and this stub shaft 21 is formed on the opposite ends thereof with rounded protuberances 22 which are received in the recesses 17. Thus, the flint 18 is rotatably mounted between the ears 15 and the flint may be easily assembled with or disassembled from the lighter.

A coil spring is designated 23. This spring 23 is housed in a tube 24 that extends from the bottom to the top 12 of the casing 10. Mounted on the free end of the spring 23 is a steel 26. This steel 26 has a width less than the thickness of the flint disc 18. Moreover, it has a roughened or serrated surface at 27 which engages the peripheral edge 20 of the flint under the yielding pressure of the spring 23.

*Operation*

While the operation of the cigarette lighter of this invention is believed to be obvious from the illustration of the drawing and description of parts given, it may be briefly outlined as follows:

The flint 18 is readily assembled in its rotative mounting by simply spreading the ears 15 and inserting the flint therebetween. The ears 15 will spring back into gripping engagement with the rounded protuberances 22 under their own resiliency and elasticity.

When the use of the lighter is required, the cover 11 is opened, in the usual way, and the operator engages the flint 18 with his thumb to rotate the flint. This rota-

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tion takes place with the roughened surface 27 of the steel 26 in engagement with the peripheral edge 20 of the flint. Sparks are generated and ignite the wick 14 in a well-known manner.

After continued use, the flint 18 wears down, but this wear simply forms a groove in the flint disc, as illustrated in Figures 4 and 5. Thus, there is always a portion of the flint disc left with its original diameter so as to facilitate the operation by the thumb of the user.

After a flint has become completely worn, it is, of course, easily replaced; however, due to the size and mass of the flint disc, it will have a service life many times greater than that of the flint now used in lighters of this type.

While a preferred specific embodiment of the invention is hereinbefore set forth, it is to be clearly understood that the invention is not to be limited to the exact construction, mechanisms, and devices illustrated and described, because various modifications of these details may be provided in putting the invention into practice within the purview of the appended claim.

What is claimed is:

In a cigarette lighter having a main casing and a cover hingedly mounted thereon, said casing including a top wall, a wick upstanding from said top wall, and a two-part shield enclosing said wick; the combination of: a pair of complemental ears formed on said shield parts

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at one side thereof, said ears being formed with inwardly opening recesses, a flint disc having a central stub shaft with rounded protuberances at the opposite ends thereof, said protuberances being rotatably and detachably received in said recesses, said flint disc projecting beyond said ears where it is conveniently available as an operating member, a coil spring mounted in said casing in a position normal to said top wall, and a steel mounted on the free end of said spring and passing through said top wall, said steel having a roughened surface urged against the peripheral edge of said disc under the influence of said spring, said flint disc having a thickness greater than the width of said steel with the steel being disposed substantially midway between the faces of the disc whereby the diameter of the faces of the disc is maintained constant as the body portion therebetween wears down to maintain a constant diameter for its function as an operating member.

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