PATENT SPECIFICATION

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COMPLETE SPECIFICATION

Improvements in Pyrophoric Lighters

We, HARRY LAKEY, a British Subject, of 62, Portsmouth Road, Surbiton, in the County of Surrey, and CELESTION LIMITED, a British Company, of Kingston-on-Thames, in the County of Surrey, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

This invention relates to lighters comprising a wick protected by a hinged cap and adapted to be lit by sparks produced by a sparking wheel which is carried upon a rotatably mounted shaft provided with an operating wheel.

A lighter of this kind has been proposed in which the wick-protecting cap is rotatably mounted on the shaft of the sparking wheel and is frictionally connected to the sparking wheel so that a single operating movement serves both to rotate the cap to expose the wick and to rotate the sparking wheel to produce an igniting spark, while the cap may be returned to closed position without rotating the sparking wheel in the reverse direction.

In accordance with the present invention the wick-protecting cap is rotably mounted upon the shaft of the sparking wheel and is frictionally connected to the operating wheel, which is connected to the shaft through a ratchet mechanism. Thus rotation of the operating wheel in one direction serves both to open the cap and rotate the sparking wheel (or to rotate the sparking wheel alone after the cap has been fully opened), while rotation of the operating wheel in the reverse direction closes the cap without rotating the sparking wheel.

In order that the invention may be more clearly understood, an embodiment thereof is illustrated in the accompanying drawing. In this drawing:—

Figure 1 is an end elevation partly in section of the lighter, the wick-protecting cap being shown partly open; and

Figure 2 is a side elevation of the lighter partly in section on the line A—A of Figure 1;

The lighter shown in the drawing comprises a casing 7, which contains an absorbent for the volatile fuel and is provided in its base with a filling opening closed by a screw plug 8. A wick 9 projects through an aperture in the top of the casing and is normally covered by a hinged cap 10 which minimises evaporation of fuel from the wick when the lighter is not in use. A tube 11 extending through the height of the casing accommodates a flint 12 and a helical spring 13 which urges the flint upwardly into engagement with a toothed sparking wheel 14. The sparking wheel is secured on a shaft 35 near one end thereof. This end of the shaft is of reduced diameter and is journalled in a bracket 16 which is secured in the top wall of the casing 7 and constitutes the upper end of the flint tube 11.

The opposite end of sparking wheel shaft 35 is rotatably supported in a diaphragm 36 which extends across the bore of the tubular operating wheel 37. The end of this bore is closed by a plug 38, which has a projecting portion of reduced diameter which is journalled in a bracket 19 secured in the top wall of the casing 7. The other end of the bore in operating wheel 37 engages over one end of a sleeve 40, which is rotatable upon shaft 35. To the other end of sleeve 40 there is brazed or otherwise secured a tubular member 21 which is integral with the cap 10. A helical compression spring 39 accommodated within the bore of operating wheel 37 bears against the diaphragm 36 of that wheel and the end of sleeve 40. A ratchet wheel 42 is secured on the end of shaft 35 and spring 39 normally holds a member 41 secured to diaphragm 36 in engagement with the teeth of this ratchet wheel.

When the operating wheel 37 is rotated (in a direction counter-clockwise in Figure 1) spring 39 affords a frictional connection between wheel 37 and sleeve 40 and the cap 10 is rotated to open position. Simultaneously the engagement of member 41 with ratchet 42 affords a positive connection between wheel 37 and shaft 35 and the sparking wheel 14 is rotated to ignite the wick. If rotation of

operating wheel 37 is continued after cap 10 is fully open, the frictional connection to sleeve 40 yields and shaft 35 alone is rotated. If operating wheel 37 is rotated in the reverse direction (clockwise in Figure 1), the teeth of ratchet member 42 disengage from member 41 operating wheel 37 sliding axially upon shaft 35, and permit rotation of wheel 37 while shaft 35 remains stationary. The frictional connection to sleeve 40 afforded by spring 39 results in rotation of the sleeve and thus the return of cap 10 to closed position.

Having now particularly described and ascertained the nature of our said invention and in what manner the same is to be performed, we declare that what we claim is:—

1. A lighter comprising a wick protected by a hinged cap and adapted to be lit by sparks produced by a sparking wheel which is carried upon a rotatably mounted shaft provided with an operating wheel, the wick-protecting cap being rotatably mounted on this shaft, wherein the operating wheel is connected to the shaft through a ratchet mechanism and is frictionally connected to the wick-protecting cap.

2. A lighter in accordance with claim 1, in which the operating wheel is movable longitudinally of the sparking wheel shaft to effect disengagement of the ratchet mechanism and is urged into driving engagement with the shaft by a compression spring which also effects the frictional connection to the wick-protecting cap.

3. A lighter in accordance with claim 2, in which the compression spring is housed in a bore in the operating wheel, within which bore there engages the end of a sleeve rotatable upon the sparking wheel shaft and carrying the wick-protecting cap.

4. A lighter in accordance with any of the preceding claims, in which the ratchet mechanism is housed in a bore in the operating wheel, within which the end of the shaft remote from the sparking wheel is supported.

5. An improved lighter as herein described with reference to the accompanying drawing.

Dated this 6th day of March, 1946.

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[This Drawing is a reproduction of the Original on a reduced scale.]

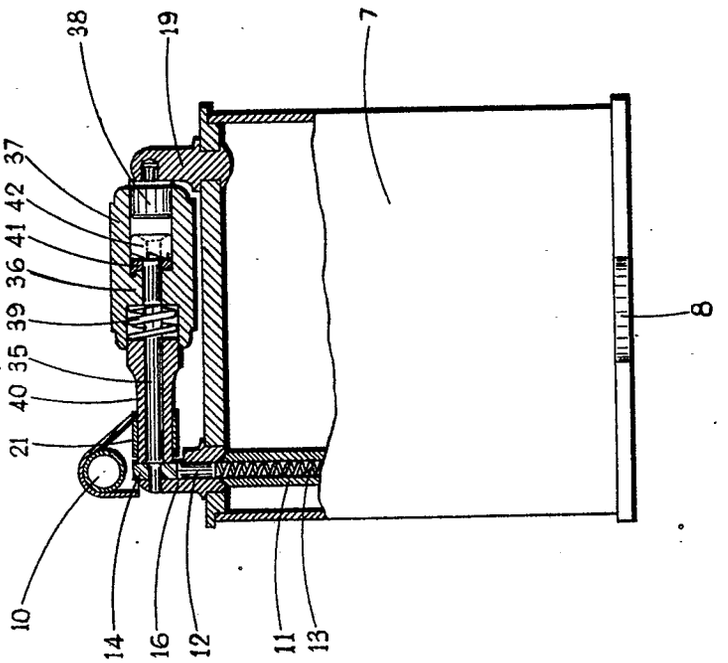

FIG.2.

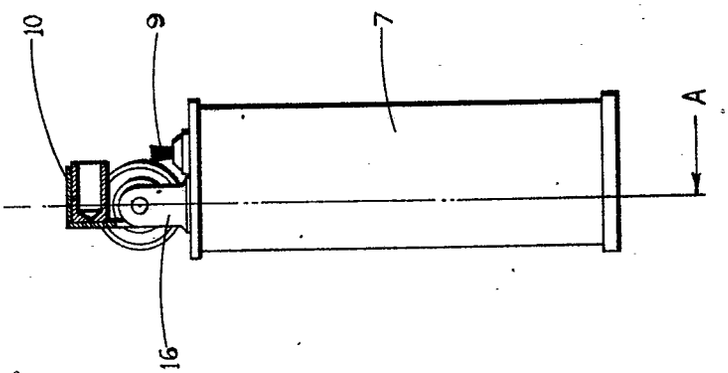

FIG.1.

H.M.S.O. (Ty.P.)