PATENT SPECIFICATION

765,132

Date of Application and filing Complete Specification: Nov. 23, 1954.

No. 33935/54.

Application made in Austria on March 29, 1954.

Application made in Austria on Aug. 25, 1954.

Complete Specification Published: Jan. 2, 1957.

Index at acceptance:—Class 75(3), F9B,

International Classification:—A24f.

COMPLETE SPECIFICATION

Pyrophoric Lighter

We, ALFRED RACEK, of Zwerngasse 59, Vienna XVII, Austria, and JOHANN RAGANITSCH, of Hans Richtergasse 1a, Vienna XIX, Austria, both Austrian citizens, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention relates to pyrophoric lighters of the kind in which a flint spring bears with one end through the intermediary of a flint on a friction wheel mounted on a shaft in the lighter body, and with the other end is supported by a casing part movably connected to the lighter body.

According to the present invention there is provided a pyrophoric lighter in which a flint spring bears with one end through the intermediary of a flint on a friction wheel mounted on a shaft in the lighter body, and with the other end is supported by a casing part movably connected to the lighter body, characterized in that said casing part is pivotally mounted on said friction wheel shaft and said flint spring extends in a flint tube fixed to said lighter body whereas said other end of the flint spring extends outside said flint tube and is longitudinally guided by a movably mounted guide member and is supported through the intermediary of said guide member on said casing part.

The guide member may be fixed to the flint spring end remote from the friction wheel, and means may be provided for preventing the movement of the said member in the spring relaxing sense beyond a predetermined limit after the casing part has been pivotally moved relative to the lighter body.

The guide member may consist of a slide having a flat main portion in longitudinally guided engagement with said lighter body and a flange bent from said main portion and connected to said other spring end, which is supported on said casing part through the intermediary of said flange.

The slide and flint spring tube may be laterally spaced from each other within the casing part movably connected to the lighter body so that a space adapted to accommodate at least one spare flint is provided in said casing part between said slide and flint tube.

The invention is illustrated by way of example in the accompanying drawings, in which:—

Fig. 1 is a partly sectional side elevation showing the lighter in ignited position;

Fig. 2 is a partly sectional side elevation showing the same lighter in position for receiving a flint;

Fig. 3 is a cross-sectional view of the lighter, taken on line III—III Fig. 1, and

Fig. 4 is a top plan view showing, as a detail, a slide member connected to the flint spring.

The lighter body, which holds all essential parts of the lighter, consists of a rolled-up sheet metal cylinder 1, which is open on one side and at both ends. The fuel tank 2 is pushed into the body 1, which is formed at its longitudinal edges with three pairs of projecting lugs 3, 4 and 5 (Fig. 1). The upper pair of lugs 3 carries a pivot pin or shaft 6 on which the friction wheel 7 is rotatable and the cover 8 is pivotally mounted. The tube 11 containing the flint 9 and the spring 10 is held by the lugs 4, each of which embraces one half of the tube. The tube 11 has a filling opening 12 for the flint.

The spring 10 is rigidly connected at its end remote from the flint to the flange 13 of a slide 14. Preferably the spring is passed over a tongue 15 which is bent from that flange to extend parallel to the flat main portion of slide 14. The lower pair of lugs 5 forms the longitudinal guideways for the slide 14. These guideways consist of the inwardly bent longitudinal margins 16 of the lugs 5 (Fig. 3) and of a resilient tongue 17, which is bent at right angles from a transverse or end wall 18 connected to the lugs 5 by small, laterally bent lugs 19 and determining the distance between lugs 5. The lower end of tube 11 is stuck through and gripped in a central aper-

[*Price 3s. 0d.*]

ture in the transverse or end wall 18. A tilting spring 22 pushed on the flint tube 11, in a manner known from other lighters, is supported at one end by the transverse wall 18 and bears with its other end against the end wall of a rocker lever 23, which is longitudinally guided with that end wall along the tube 11 and accelerates the pivotal movement of the cover, effected with the finger. The rocker lever 23 also holds the cover in its respective end positions.

The sparking mechanism described hereinbefore is covered in the normal position of the lighter by a channel-shaped casing part 24 pivotally movable about the friction wheel shaft 6. In the normal position of the lighter, shown in Fig. 1, the apertured end wall 25 of that casing part supports the flange 13 of slide 14 against the action of the flint spring 10 and thus forms an abutment for the spring end remote from the flint.

In that position and during the initial and final phases of its pivotal movement from and to said position, respectively, the flanges of the channel-shaped casing part 24 are in guided engagement with the lugs 5, and more particularly with the lugs 19 of the end wall 18.

Due to the spacing of the slide 14 from the flint tube 11 a small space is left free between those parts and the lugs 5. That space may be used for keeping at least one spare flint 31. The tongue 17 extends longitudinally in that space and has a window 28. The slide 14 has a similar window 29 (Fig. 4). When the slide has been pulled into its open position, both windows 28 and 29 register. A boss 21 projecting outwardly at the end of tongue 17 engages the upper edge of the window 29 of the slide to form a stop limiting the opening movement thereof (Figure 2).

Next to the window 29 the slide 14 is formed with an outward bulge 30 (Fig. 4) to enlarge the space for keeping the spare flint 31.

When the slide 14 is in its active position (Fig. 1), in which it holds the flint spring 10 strained, the slide shuts off the spare flint space from the outside.

When the flint 9 held between spring 10 and friction wheel 7 has been used up, the lighter is brought into the horizontal position shown in Fig. 2, the casing part 24 is swung open and the slide 14 is moved into its open position as far as permitted by the stop boss 21 on tongue 17. Thus a complete removal of the slide from its guideways is prevented. In that position of the slide 14 the filling opening 12 of the flint tube 11 is open and the windows 28, 29 of tongue 17 and slide 14, respectively, are in register to enable the spare flint 31 to be taken. Now the spare flint 31 can be inserted into the flint tube 11. A new spare flint can be placed into the spare flint space, if desired. Then the slide 14 is pushed back along its guideways in the sense of arrow 26 to strain the spring 10. The casing part 24 is closed in the sense of arrow 27 to act again as a support for the slide flange 13 and of the spring end. Thus the lighter is ready for use again. The size of the spare flint space, which may be capable of receiving several spare flints, is determined by the distance between flint tube 11 and slide 14. Owing to the clearance required for depressing the tongue 17 so that the slide can be moved entirely out of its guideways, that distance will in any case be sufficient to permit at least one flint to be accommodated in the space confined by the window 28 of the tongue 17.

What we claim is:—

1. A pyrophoric lighter in which a flint spring bears with one end through the intermediary of a flint on a friction wheel mounted on a shaft in the lighter body, and with the other end is supported by a casing part movably connected to the lighter body, characterized in that said casing part is pivotally mounted on said friction wheel shaft and said flint spring extends in a flint tube fixed to said lighter body whereas said other end of the flint spring extends outside said flint tube and is longitudinally guided by a movably mounted guide member and is supported through the intermediary of said guide member on said casing part.

2. A pyrophoric lighter as claimed in claim 1, in which the guide member consists of a slide having a flat main portion in longitudinally guided engagement with said lighter body and a flange bent from said main portion and connected to said other spring end, which is supported on said casing part through the intermediary of said flange.

3. A pyrophoric lighter as claimed in claim 1 or 2, in which said casing part is of channel section and has an end wall supporting said other end of said flint spring through the intermediary of said guide member.

4. A pyrophoric lighter as claimed in claim 2 or 3, in which said casing part is pivotally movable on said friction wheel shaft to permit said spring to relax and means are provided which prevent a movement of the slide in the spring relaxing sense beyond a predetermined position after said casing part has thus been moved.

5. A pyrophoric lighter as claimed in claim 4, in which said casing part is pivotally movable on said friction wheel shaft between a first position, in which it holds said spring strained, and another position, in which it permits said spring to relax, characterized in that the slide is rigidly connected to said other end of said spring and in longitudinally guided engagement with a pair of lugs rigid with and projecting from the lighter body and in guiding engagement with said casing part in a final phase of its movement from said other position to said first position, further characterized by a resilient guide member disposed between

ture in the transverse or end wall 18. A tilting spring 22 pushed on the flint tube 11, in a manner known from other lighters, is supported at one end by the transverse wall 18 and bears with its other end against the end wall of a rocker lever 23, which is longitudinally guided with that end wall along the tube 11 and accelerates the pivotal movement of the cover, effected with the finger. The rocker lever 23 also holds the cover in its respective end positions.

The sparking mechanism described hereinbefore is covered in the normal position of the lighter by a channel-shaped casing part 24 pivotally movable about the friction wheel shaft 6. In the normal position of the lighter, shown in Fig. 1, the apertured end wall 25 of that casing part supports the flange 13 of slide 14 against the action of the flint spring 10 and thus forms an abutment for the spring end remote from the flint.

In that position and during the initial and final phases of its pivotal movement from and to said position, respectively, the flanges of the channel-shaped casing part 24 are in guided engagement with the lugs 5, and more particularly with the lugs 19 of the end wall 18.

Due to the spacing of the slide 14 from the flint tube 11 a small space is left free between those parts and the lugs 5. That space may be used for keeping at least one spare flint 31. The tongue 17 extends longitudinally in that space and has a window 28. The slide 14 has a similar window 29 (Fig. 4). When the slide has been pulled into its open position, both windows 28 and 29 register. A boss 21 projecting outwardly at the end of tongue 17 engages the upper edge of the window 29 of the slide to form a stop limiting the opening movement thereof (Figure 2).

Next to the window 29 the slide 14 is formed with an outward bulge 30 (Fig. 4) to enlarge the space for keeping the spare flint 31.

When the slide 14 is in its active position (Fig. 1), in which it holds the flint spring 10 strained, the slide shuts off the spare flint space from the outside.

When the flint 9 held between spring 10 and friction wheel 7 has been used up, the lighter is brought into the horizontal position shown in Fig. 2, the casing part 24 is swung open and the slide 14 is moved into its open position as far as permitted by the stop boss 21 on tongue 17. Thus a complete removal of the slide from its guideways is prevented. In that position of the slide 14 the filling opening 12 of the flint tube 11 is open and the windows 28, 29 of tongue 17 and slide 14, respectively, are in register to enable the spare flint 31 to be taken. Now the spare flint 31 can be inserted into the flint tube 11. A new spare flint can be placed into the spare flint space, if desired. Then the slide 14 is pushed back along its guideways in the sense of arrow 26 to strain the spring 10. The casing part 24 is closed in the sense of arrow 27 to act again as a support for the slide flange 13 and of the spring end. Thus the lighter is ready for use again. The size of the spare flint space, which may be capable of receiving several spare flints, is determined by the distance between flint tube 11 and slide 14. Owing to the clearance required for depressing the tongue 17 so that the slide can be moved entirely out of its guideways, that distance will in any case be sufficient to permit at least one flint to be accommodated in the space confined by the window 28 of the tongue 17.

What we claim is:—

1. A pyrophoric lighter in which a flint spring bears with one end through the intermediary of a flint on a friction wheel mounted on a shaft in the lighter body, and with the other end is supported by a casing part movably connected to the lighter body, characterized in that said casing part is pivotally mounted on said friction wheel shaft and said flint spring extends in a flint tube fixed to said lighter body whereas said other end of the flint spring extends outside said flint tube and is longitudinally guided by a movably mounted guide member and is supported through the intermediary of said guide member on said casing part.

2. A pyrophoric lighter as claimed in claim 1, in which the guide member consists of a slide having a flat main portion in longitudinally guided engagement with said lighter body and a flange bent from said main portion and connected to said other spring end, which is supported on said casing part through the intermediary of said flange.

3. A pyrophoric lighter as claimed in claim 1 or 2, in which said casing part is of channel section and has an end wall supporting said other end of said flint spring through the intermediary of said guide member.

4. A pyrophoric lighter as claimed in claim 2 or 3, in which said casing part is pivotally movable on said friction wheel shaft to permit said spring to relax and means are provided which prevent a movement of the slide in the spring relaxing sense beyond a predetermined position after said casing part has thus been moved.

5. A pyrophoric lighter as claimed in claim 4, in which said casing part is pivotally movable on said friction wheel shaft between a first position, in which it holds said spring strained, and another position, in which it permits said spring to relax, characterized in that the slide is rigidly connected to said other end of said spring and in longitudinally guided engagement with a pair of lugs rigid with and projecting from the lighter body and in guiding engagement with said casing part in a final phase of its movement from said other position to said first position, further characterized by a resilient guide member disposed between

* C L M S *

said lugs to guide said slide and prevent its movement in the spring relaxing sense beyond a predetermined limit after the movement of said casing part from said first to said other position, and an end wall which rigidly spaces said lugs apart and in which said flint tube is held.

6. A pyrophoric lighter as claimed in claim 2, in which the slide and flint tube are laterally spaced from each other within the said casing part to provide therein a space adapted to accommodate at least one spare flint.

7. A pyrophoric lighter as claimed in claim 6 when appendant to claim 5, in which said space adapted to accommodate at least one spare flint is provided between said lugs.

8. A pyrophoric lighter as claimed in claim 6 or 7, in which said slide is formed and arranged to close said space adapted to accommodate at least one spare flint towards the outside.

9. A pyrophoric lighter as claimed in claim 5, which comprises a stop member affixed to said lighter body and in which said slide is formed with an aperture, said aperture having an edge adapted to engage said stop member to prevent the movement of said slide in the spring relaxing sense beyond a predetermined limit after the casing part has been pivoted from said first to said other position.

10. A pyrophoric lighter as claimed in claim 9, in which said stop member has an aperture registering with said aperture in said slide in the position of the slide corresponding to the relaxed condition of the spring.

11. A pyrophoric lighter as claimed in anyone of claims 6—8, in which said slide is formed with an outward bulge to enlarge said space.

12. A pyrophoric lighter of the type described, constructed and arranged substantially as described hereinbefore with reference to the accompanying drawings.

For the Applicants,
F. J. CLEVELAND & COMPANY,
Chartered Patent Agents,
29 Southampton Buildings,
Chancery Lane, London, W.C.2.

Leamington Spa: Printed for Her Majesty's Stationery Office, by the Courier Press.—1957.
Published at The Patent Office, 25, Southampton Buildings, London, W.C.2, from which copies may be obtained.

* C L M S *