

PATENT SPECIFICATION

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PROVISIONAL SPECIFICATION

Improvements in or relating to Pyrophoric Lighters for Cigarettes and the like

We, ERNEST EDWARD BEECH, of 29, Shrubland Road, Walthamstow, London, E.17, BARNETT PEARLMAN, of 28, St. Stephen's Close, Avenue Road, London, N.W.8, both British subjects, and HOWARD WALL LIMITED, of 25-37, Hackney Road, London, E.2, a British Company, do hereby declare the nature of this invention to be as follows:—

10 This invention relates to improvements in pyrophoric lighters for cigarettes and the like of the kind in which a "flint" of ferrocium or like pyrophoric material, is held by means of a spring against a thumb wheel by rotation of which sparks are produced to ignite petroleum vapour from an impregnated wick.

20 The present invention is directed towards the provision of a construction of such lighters which is relatively inexpensive to manufacture and simple to assemble, and which presents improved means for mounting the "flint" and its spring in relation to the lighter case. The invention is further directed to the provision of novel means for placing the flint spring in tension, and for mounting the wick tube in the lighter casing.

30 According to the invention, tension is applied to the flint spring, which is mounted in a tube in the known manner, by the insertion into the open end of such tube of a slidable plug or pin having a lug or projection extending at right angles to its axis; which lug enters into a slot, for example a bayonet-slot, provided in the flint tube or in a wall of the lighter casing. Rotation of the pin when the spring is compressed brings the lug into the locking part of the bayonet-slot, to hold the flint pressed against the striking wheel.

45 The inner end of the flint tube is split and bent out to form flat upper and lower ears or plates between which the striking wheel is mounted upon a pivot pin extending through the two ears or plates.

50 The flint tube is advantageously secured in position upon an upper wall of

the lighter casing by means of a strip of sheet metal bent to enclose the tube and secured to the lighter casing by soldering or in any other convenient 55 manner. The said bent strip of sheet metal may advantageously be secured for example, by means of a screw engaging in a screw-threaded hole in the lighter casing and passing through the said strip. 60 With such a construction, the striking wheel and the flint tube may be withdrawn from the lighter casing as a single unit by removing the screw, thus facilitating cleaning or repair. 65

In a convenient constructional form of the invention, three of the side walls of a lighter casing extend upwardly beyond the upper plate thereof on which the operating mechanism is mounted, and a 70 cover plate is secured to such upward extensions.

A gap provided in such cover plate is filled by a cap or lid provided between the upward extensions of the two side 75 walls of the casing; this cap or lid also extends downwardly at its free end towards the casing, to form with the upward extensions of the casing, a substantially closed chamber having as its 80 lower member the plate upon which the operating mechanism is mounted.

Through an aperture provided in one end of this chamber there is inserted a tube in which may be assembled a flint, 85 a spring, and a slidable plug or pin. One end of this tube is slit axially and the end parts thereof bent to form parallel flat plates spaced apart one from the other. A pivot pin is rivetted through 90 holes in such flat plates and a striking wheel mounted on the pivot pin to rotate between the two plates, in a horizontal plane.

A bayonet or like slot is formed in the 95 other end of the tube, into which slot passes a lug extending at right angles to the axis of the plug. The plug is pushed inwardly into the tube, compressing the spring and urging the flint into contact with the striking wheel, until rotation of 100 the plug causes the lug thereon to enter

into the locking part of the bayonet or like slot.

It will be seen that there is thus provided a single unit, which can be assembled or removed from the lighter casing as desired in one piece, comprising the means for producing the spark whereby the impregnated wick of the lighter may be ignited.

The flint tube is secured in position within the above-described upper chamber of the lighter casing by means of a strip of sheet-metal bent to lie in contact with a portion of the periphery of the tube and held upon the bottom wall of the chamber by means of a screw, which may also serve to hold in position a leaf spring whereby the cap of the chamber is held in the open

or the closed position.

A wick tube is provided extending from within the main body of the lighter casing to the plate upon which the operating mechanism is mounted. The end of the wick tube projects only just above such plate, and instead of a snuffer of the conventional type being provided upon the cap of the lighter, the wick is merely enclosed within the upper chamber by closing the cap to complete the end wall of such chamber.

Dated this 10th day of October, 1940.

D. YOUNG & CO.,
21, Bourne End Road,
Northwood, Middlesex,
Agents for the Applicants.

COMPLETE SPECIFICATION

Improvements in or relating to Pyrophoric Lighters for Cigarettes and the like

We, ERNEST EDWARD BEECH, of 29, Shrubland Road, Walthamstow, London, E.17, BARNETT PEARLMAN, formerly of 28, St. Stephen's Close, Avenue Road, London, N.W.8; now of 9-13, Redchurch Street, London, E.2, both British subjects, and HOWARD WALL LIMITED, of 25-37, Hackney Road, London, E.2, a British Company, 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 improvements in pyrophoric lighters for cigarettes and the like of the kind in which a "flint" of ferrocerium or like pyrophoric material, is held by means of a spring against a thumb wheel by rotation of which sparks are produced to ignite petroleum vapour from an impregnated wick.

The present invention is directed towards the provision of a construction of such lighters which is relatively inexpensive to manufacture and simple to assemble, and which presents improved means for mounting the "flint" and its spring in relation to the lighter case.

The invention is applied to pyrophoric lighters of the kind in which there is provided as a unitary assembly a flint tube, a striking wheel pivotally mounted in one end of the flint tube, a pyrophoric element within the tube, a spring within the tube, and a pin having a lateral projection thereon to engage in a bayonet slot in the end of the flint tube remote from the striking wheel, and according to

the invention such assembly is secured to the body of the lighter casing by means whereby there is also secured to the casing a spring whereby a lid or cover pivotally mounted on the body of the casing is held in either its open or its closed position.

The invention may be carried into practice as shown in the accompanying drawing, in which

Figure 1 is a side elevation of a lighter constructed in accordance with the invention, parts whereof are indicated in broken lines,

Figure 2 is a plan of the lighter shown in Figure 1, similarly having parts of the lighter indicated in broken lines,

Figure 3 is a section on the line A—B of Figure 2, and

Figure 4 is a detail view hereinafter more fully described.

As shown in the drawing, tension is applied to a flint spring 1, which is mounted in a tube 2 in the known manner, by the insertion into the open end of such tube of a slidable plug or pin 3 having a lug or projection 4 extending at right angles to its axis, which lug enters into a slot, for example a bayonet-slot 5 provided in the flint tube 2 or in a wall of the lighter casing. Rotation of the pin 3 when the spring 1 is compressed brings the lug 4 into the locking part of the bayonet-slot 5 in order to hold a flint 6 pressed against a striking wheel 7.

The inner end of the flint tube 2 is split and bent out to form flat upper and lower ears or plates 8 between which the striking wheel 7 is mounted upon a pivot

9 extending through the two ears or plates.

The flint tube 2 is advantageously secured in position upon an upper wall 5 of the lighter casing by means of a strip of sheet metal 10 bent to enclose the tube 2 and secured to a part 11 of the lighter casing. The said bent strip of sheet metal 10 may advantageously be secured 10 for example, by means of a single screw 12 engaging in a screw-threaded hole in the part 11 of the lighter casing and passing through the said strip. With such a construction, the striking wheel 7 and the 15 flint tube 2 form a single unit as shown in Figure 4, and may be withdrawn from the lighter casing as an integral part by removing the screw 12 thus facilitating cleaning or repair.

20 In a convenient constructional form of the invention, as shown in the drawing, Figures 1 to 3, parts 13 of the side walls of a lighter casing extend upwardly beyond the upper plate 11 thereof on 25 which the operating mechanism is mounted, and a cover plate 14 is secured to such upward extensions.

A gap provided in such cover plate is filled by a cap or lid 15 pivoted between 30 the upward extensions 13 of the side walls of the casing; this cap or lid 15 also has a downward extension 16 at its free end, to form with the upward extensions 13 of the casing, a substantially closed chamber 35 having as its lower member the plate 11 upon which the operating mechanism is mounted.

Through an aperture provided in one end of this chamber there is inserted an 40 assembly comprising the tube 2, the flint 6, the spring 1, and the slidable plug or pin 3. One end of the tube 2 is slit axially and the end parts thereof bent to form parallel flat plates 8 spaced apart 45 one from the other. The pivot pin 9 is rivetted through holes in these plates 8 and the striking wheel 7 mounted on the pin 9 to rotate between the two plates, e.g. in a horizontal plane.

50 A bayonet or like slot 5 is formed in the other end of the tube, into which slot passes a lug 4 extending at right angles to the axis of the plug. The plug 3 is pushed inwardly into the tube, compressing 55 the spring and urging the flint 6 into contact with the striking wheel 7, until rotation of the plug causes the lug 4 thereon to enter into the locking part of the bayonet or like slot 5.

60 It will be seen that there is thus provided a single unit, which can be assembled or removed from the lighter casing as desired in one piece, comprising the means for producing the spark 65 whereby the impregnated wick of the

lighter may be ignited.

As hereinabove described, the flint tube 2 is secured in position within the above-described upper chamber of the lighter casing by means of the sheet-metal strip 70 10, which is bent to lie in contact with a portion of the periphery of the tube and is held upon the bottom wall 11 of the chamber by means of the screw 12, which 75 also serves to hold in position a leaf spring 17 whereby the cap 15 of the chamber is held in the open or the closed position. If desired, the free end of the strip 10 may be secured to the plate 11 80 by a second screw 18.

A wick 19 is provided extending from within the main body of the lighter casing to the plate 11 upon which the operating mechanism is mounted. The end of the wick projects only just above such plate. 85 into a shallow recess 21 provided therein, and a snuffer 20 of the conventional type registering with the recess 21 may be provided upon the cap 15 of the lighter, or the wick may merely be enclosed within 90 the upper chamber by closing the cap 15 to complete the end wall of such chamber.

Having now particularly described and ascertained the nature of our said invention and in what manner the same is to 95 be performed, we declare that what we claim is:—

1. A pyrophoric lighter for cigarettes or the like of the kind in which there is provided as a unitary assembly a flint 100 tube, a striking wheel pivotally mounted, in one end of the flint tube, a pyrophoric element within the tube, a spring within the tube, and a pin having a lateral projection thereon to engage in a bayonet 105 slot in the end of the flint tube remote from the striking wheel, wherein such assembly is secured to the body of the lighter casing by means whereby there is also secured to the casing a spring where- 110 by a lid or cover pivotally mounted on the body of the casing is held in either its open or its closed position.

2. A pyrophoric lighter as claimed in Claim 1, wherein the securing means com- 115 prises a strip of sheet metal bent to enclose the flint tube and secured to the lighter casing in any convenient manner.

3. A pyrophoric lighter as claimed in Claim 2, wherein the bent sheet metal 120 strip is secured to the lighter casing by means of a screw engaging in a screw threaded hole provided therefor in the casing and passing through apertures in the strip and in a leaf or other spring 125 whereby the cap or cover is maintained in its closed or opened positions.

4. A pyrophoric lighter as claimed in Claim 1, wherein the flint tube is mounted upon the lighter casing in such a manner 130

that the striking wheel provided at one end of the tube lies substantially within a plane parallel to that of the surface of the casing upon which the operative parts 5 of the lighter as assembled.

5. A pyrophoric lighter according to any of the preceding claims, wherein the upper surface of the casing upon which the operative parts are mounted is provided with a recess, into which extends 10 the end of a wick provided within the reservoir and passing through an aperture in the casing, such recess also being

adapted to receive the open end of a wick snuffing tube provided upon a cap or cover 15 pivotally mounted upon the said surface.

6. A pyrophoric lighter for cigarettes or the like, constructed and operating substantially as hereinabove described with reference to the accompanying 20 drawing.

Dated this 21st day of August, 1941.

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

Fig. 1.

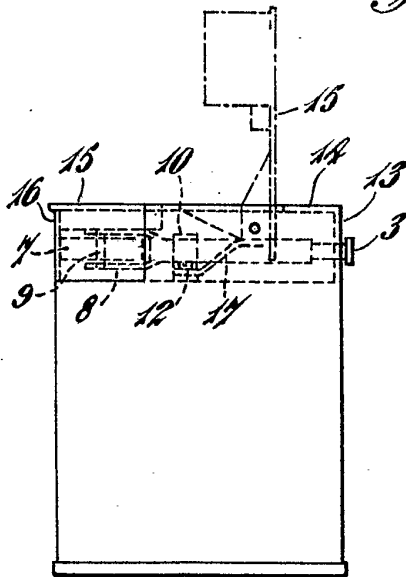


Fig. 3.

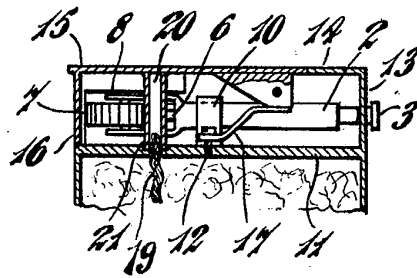


Fig. 2.

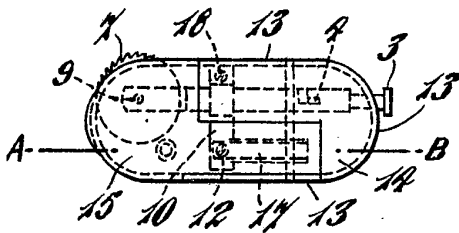


Fig. 4.

