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COMPLETE SPECIFICATION.

Cigar Lighter.

I, Dr. FERDINAND RINGER, an Austrian citizen, of 16, Philippovichgasse, Vienna XIX., Republic of Austria, 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:—

The invention relates to cigar lighters and aims at providing a cigar lighter utilising a composition rod of repeatedly ignitable material adapted to be ignited by friction, instead of the liquid fuel or match cord hitherto used for this purpose.

It has already been proposed to arrange in a casing a prepared stick ignitable by friction, said stick being advanced in said casing by a spring-constrained plunger and being ignited by a striking device in the form of a latch which at the same time continuously clamps said prepared stick.

The cigar lighter of the present invention on the other hand comprises a casing, a friction surface, a composition rod of repeatedly ignitable material, adapted to be ignited by rubbing against the said friction surface, and is characterised by clamping means adapted automatically to clamp said composition rod in position after it has been advanced, the said clamping means co-operating with the said composition rod and with a protecting sleeve serving as guide therefor.

In order more clearly to understand the invention, reference is made to the accompanying drawings, which illustrate diagrammatically and by way of example, various embodiments thereof, and in which:—

Fig. 1 shows in vertical section a constructional form of the cigar lighter with a hinged cover.

Fig. 2 is a vertical section of Fig. 1 at right angles to Fig. 1.

Fig. 3 is a transverse section of the cover guide.

Fig. 4 is a vertical section of a constructional form of a cigar lighter with a pull off casing partly broken away.

Fig. 5 is a transverse section of Fig. 4; and

Fig. 6 illustrates the connection between the carrier of the composition rod and the container.

Fig. 7 shows a longitudinal section of a bar shaped cigar lighter.

Fig. 8 is a transverse section of an automatic cigar lighter.

Fig. 9 shows a detail of Fig. 8.

Fig. 10 is a side elevation of a cigar lighter partly in section with a pivoted cover, part of the side wall being broken away from the casing in order to disclose the parts.

Fig. 11 is a plan view of the casing.

Referring to Fig. 1:—A protecting sleeve 1 for the composition rod 2 is provided in a preferably prismatic casing G. The protecting sleeve is open externally at the bottom end of the casing G and can be closed by a screw 3. The composition rod is movable in the sleeve 1 and a spring 4 bears against the bottom end thereof. The upper end of the protecting sleeve is slotted and enclosed in a yoke 5, the internal diameter of which may be adjusted by an eccentric 6, so that depending on the position of the eccentric 6, the slotted end portions of the protecting sleeve may be more or less forcibly pressed against the composition rod 2 thereby clamping it in a predetermined position.

The eccentric 6 carries a flexible actuating lever 7 cooperating with a cam 8 of the hinged cover frame 9. This frame 9 is hinged to the casing at 10 and at its upper end there is carried a lid 12 pivoted at 11. A spring 13 tends to force said lid 12 permanently against the end of the composition rod 2. The underside of the lid 12 is provided with a friction surface cooperating with the free end of the composition rod projecting from the protecting sleeve. At the end opposite the pivot 11 the lid 12 carries two guide pins 14, 15 pressed apart by helical springs 16. The guide pins cooperate on the one hand with guides or channels 19, 20 provided in the

side walls 17, 18 of the casing G and they are also guided by the top edges 21 of the side walls 17, 18. The guides or channels 19, 20 are arranged substantially at the same level as that in which the initial opening movement of the cover takes place. Starting from their initial position where the pins 14, 15 are at rest, the guides converge progressively to their ends, so that the pins 14, 15 are forced axially towards each other during the opening movement of the cover. Above that point at which the pins 14, 15 are in their position of rest, the side walls 17, 18 of the casing G are provided with vertical slots 22. The top edges 21 of the side walls 17, 18 are parallel to each other throughout and are nearer to each other than the guides 19, 20. The casing 20 is preferably provided with a chamber 23 for the reception of composition rod refills.

The position of the parts of the cigar lighter shown in Fig. 1 in full lines is that of rest. In this position, the eccentric 6 does not force the yoke 5 against the protecting sleeve 1, so that the composition rod is forced upwards by the spring 4 until it bears against the friction surface. On opening the lid the cam 8 moves the lever 7 and the eccentric 6 in such direction that the yoke 5 clamps the composition rod 2, said composition rod being at the same time ignited by the friction surface. Meanwhile, the pins 14, 15 move in the guides 19, 20 towards the rear side of the casing G and are forced towards each other. After the lid has reached the open position shown in dotted lines in Fig. 1, the pins 14, 15 spring outwards again. After extinguishing the flame the lid 12 is moved backwards, the pins 14, 15 sliding over the edges 21, so that the friction surface does not come into contact with the composition rod. When the lid returns into the initial position, the pins 14, 15 enter the slots 22, so that said lid moves downwards, the clamping device simultaneously releasing the composition rod 2.

Figs. 4, 5 and 6 show a bar shaped cigar lighter. The composition rod is again mounted in a slotted protecting sleeve serving as a guide and is pressed by a spring 4. The protecting sleeve is secured to a foot 32 and is provided at its upper end with projections 31. The protecting sleeve 1 is surrounded by a control sleeve 33 having fixed to the upper end thereof and in the level of the projections 31 eccentric catch stops 34, 35 (Fig. 5). At the bottom of the control sleeve 33 there is arranged a stop 36 which is adapted to co-act with a corresponding stop 37 on a cylindrical container sleeve 38. This

cylindrical sleeve 38 carries at its bottom end supported by the foot 32, a rectangular bayonet slot 39 co-operating with a pin 40 on the foot 32. The sleeve 38 is provided externally with a friction surface for the composition rod.

In the position of rest shown in Fig. 4, the pin 40 lies at the end of the horizontal branch of the bayonet slot 39. On turning the sleeve 38 in a counterclockwise direction the pin 40 moves into the position shown in Fig. 6 and the sleeve 33 is also rotated in a counterclockwise direction relatively to the sleeve 1, by virtue of the stops 36, 37 connecting the sleeve 33 with the sleeve 38. This rotation of the sleeve 33 brings the catch-stops 34, 35 attached thereto into engagement with the projections 31 on the protecting sleeve 1. The catch-stops do not yield, with the result that the projections 31 are forced towards one another and the protecting sleeve 1 and composition rod 2 are clamped in position. The sleeve 38 can then be pulled off through the vertical portion of the slot 39 and the composition rod may be ignited on the friction surface. After extinguishing the flame the sleeve 38 is again pushed over the composition rod and its carrier. By rotating the sleeve 38 in the clockwise direction the projections 31 are released by the catch stops 34, 35, and the protecting sleeve 1 releases the composition rod, which is pushed forward by the spring 4 until its free end strikes against the closed end of the sleeve 38.

The cigar lighter shown in Fig. 7 again comprises a protecting sleeve 1 slotted at its top end for the composition rod 2, this sleeve being surrounded by a clamping sleeve 41. The protecting sleeve 1 is provided with an intermediate partition against which bears the spring automatically advancing the composition rod. The clamping sleeve is rigidly connected, with a head 42 having axial slots 43 at diametrically opposite points. Stop pins 44 provided on the protecting sleeve 1 project through these slots. At the ends of the slots 43 fixed stop pins 45 are secured to the head 42 which is rigidly connected to the clamping sleeve 41. A spring 46 is mounted in a recess of the head 42 and bears against the intermediate partition of the protecting sleeve. The top of the clamping sleeve is slightly tapered, so that when the protecting sleeve is advanced, the latter and also the composition rod are clamped in position. Over the protecting sleeve and the clamping sleeve is placed an outer cylindrical sleeve 47 closed at one end 48 which serves to limit the automatic advance of the composition rod. At the open end of the outer sleeve are provided two dia-

metrically opposite axial slots 49, ending in a circumferential groove 50 or circumferential slots. The pitch of this circumferential groove 50 is less than the axial distance between the pins 44 and 45 in the clamping position, that is to say, when the protecting sleeve is pushed forward in the clamping sleeve. The friction surface 51 is secured on the outside of the outer sleeve 47.

When the sleeve 47 is removed the protecting sleeve 1 is advanced by the spring 46 and the composition rod is thus firmly clamped and can be ignited by rubbing it on the friction surface. When the cigar lighter is pushed into the outer sleeve 47, the stop pins 44 first strike the inner edge of the circumferential groove 50. Therefore on pushing the cigar lighter in further the protecting sleeve 1 is drawn back in the clamping sleeve 41 until, for instance, the pins 44 strike against the rear ends of the slots. In this position the head and therefore also the sleeves 1 and 41 are turned, so that the fixed stop pins also enter into the circumferential groove 50. In this position the outer sleeve 47 and the cigar lighter are locked together. At the same time the composition rod has been unclamped by withdrawing the protecting sleeve 1, so that said composition rod can move upwards under the action of the spring 4, until it strikes against the end 48 of the outer sleeve 47. If it be required to remove the composition rod again from the outer sleeve for fresh use, then the head 42 is first turned, until the stop pins 44, 45 enter the slots 49 and the cigar lighter is thereupon pulled out from the outer sleeve 47. At the same time the protecting sleeve 1 is forced forward by the spring 46 so that the composition rod is again clamped in its outer position ready for a fresh ignition.

Figs. 8 and 9 illustrate an automatic cigar lighter. In the casing are provided a protecting sleeve 1 with the composition rod 2, and the clamping sleeve 41 with the slots 43, in which slots the stop pins 44 of the protecting sleeve 1 are movably arranged. Said sleeve 1 is pressed upwardly by a spring (not shown) mounted inside the clamping sleeve 41. The composition rod is clamped, for example, by means of projections (not shown) on the outside of the sleeve 1, which when forced against the clamping sleeve, cause the protecting sleeve to grip the composition rod. The clamping device is actuated by a bell-crank lever 52 provided with a cam 53 and acting through the medium of an intermediate lever 65 serving simply as a transmitter of pressure to a pin 44. The bell crank lever 52 is constrained by a

spring, tending to turn it in a clockwise direction. The upwardly extending arm of the lever 52 is provided with an elongated slot 54 cooperating with a stud 55 secured to the lid of the casing. The lid 56 of the casing is provided with guide ribs 57 which run in guides 58 on the top edge of the casing. A chamber 59 is provided in the lid 56 of the casing in which the spring actuated friction surface 60 is set edgewise and the narrow side edge of which cooperates with the point of the composition rod. At the front side of the casing a spring-actuated bolt 61 is provided, which projects into the path of the lid 56 of the casing. Moreover the lid of the casing carries a downwardly projecting yoke 62 near the composition rod, engaging a latch 63 pivoted in the casing or on the clamping sleeve. A spring 64 permanently tends to pull the latch 63 into the path of the composition rod. The lever 65 interposed between the cam 53 and the pin 44 is pivoted on the casing at 66 and a rod 67 is connected with its free end. This rod carries an external push button 68 projecting through a slot in the casing.

In the closed position of the automatic cigar lighter shown, the latch 63 is held in the path of the composition rod by the spring 64. The composition rod is unclamped, the protecting sleeve 1 having been pushed back against the action of its spring by means of the pins 44 under the action of the cam 53 and the composition rod is in contact with the latch 63. If now the bolt 61 be withdrawn from the path of the lid 56, the bell crank lever 52 is turned by its spring and moves the lid 56 to the right. At the same time the cam 53 releases the pin 44, so that the protecting sleeve is pushed upwardly by its spring in the sleeve 41 and clamps the composition rod 2. The latch 63 has been pushed out of the path of the composition rod by the yoke 62. The narrow side face of the friction surface 60 first strikes against the point of the composition rod, passes over it and ignites said rod. After extinguishing the composition rod, the lid and also the lever 52 are again returned into the initial position, the cam 53 depressing the lever 65 and thereby retracting the sleeve 1 by means of the pin 44 whilst the latch 63 again blocks the composition rod. If the composition rod has to be unclamped by hand, while the cigar lighter is open, for the purpose, for example, of inserting fresh composition rods therein, the protecting sleeve 1 is drawn back by moving the button 68 and thus the lever 65, downwards.

Figs. 10 and 11 show another embodiment of an automatic cigar lighter. In

this embodiment, the casing again encloses the composition rod 2 and the clamping sleeve 41¹. The clamping device may be actuated in any desired manner and preferably by means similar to those described with reference to Figs. 8 and 9. The lid 85 is mounted on a pivoted spring-controlled carrier 87 having projections 107 on the front edge thereof which cooperate with projections 108 on the locking lever 76. A carrier 83 for a friction surface is provided in the lid and is acted upon by a spring 86. The friction surface carrier is provided with a chamber 109 containing the friction surface, the latter being advanced automatically. The front end of this chamber may be closed by a slide 110 guided in a dovetail groove. The rear wall 111 of this chamber is acted upon by a strong spring 112, forcing this wall against the friction surface. On both sides of the bottom edge of the wall 111 stop pins 113 are provided which cooperate with studs 114 at the top side of the cigar lighter. On the side walls of the friction surface carrier 83 are mounted pivoted projections 115, which lie flat when moved in one direction and move into a predetermined position when moved in the opposite direction. These pivoted projections cooperate with guiding surfaces 116 on both sides of the composition rod 2, the said guiding surfaces ending in recesses 117, 118.

On the rear side of the cigar lighter, but within the casing a pivoted hook 119 is provided, which engages into a recess 120 at the rear end of the locking lever 76 and is normally held in engagement by a spring. 121 is a button extending outwards through the chamber and allowing the hook 119 to be released.

In order to operate the cigar lighter the button 121 is first operated and the lever 76 is thereupon turned by operating the button 77, so that the projections 108 are disengaged from the projections 107 of the lid carrier 87, so that the latter can swing over, the amount of swing of the carrier being however deliberately exaggerated in Fig. 10 in order to show details of the carrier. At the very beginning of this movement the projections 113 come out of contact with the studs 114, so that the friction surface is firmly held in position in the chamber 109, the wall 111 being firmly forced against the friction surface. At the same time the pivoted projections 115 turn anticlockwise, come out of the recesses 118, slide along the guiding surfaces 116, and enter into the recesses 117. The rubbing surface while passing over the composition rod ignites the latter. After

use of the cigar lighter the lid is turned clockwise against the action of its actuating spring and returned into its position of rest.

The pivoted projections 115 which cannot turn in the clockwise direction thus strike in the upright position against the guiding surface 116, raise the friction surface carrier 83 together with the friction surface of the igniting stick until the lid has reached the initial position, in which the pivoted projections again enter into the recesses 118 and the projections 113 come into contact with the studs 114, whereby the wall 111 is forced away from the friction surface, so that said friction surface can also advance under the action of a spring, not shown, by an amount corresponding to the wear thereon. The thickness of the friction surface when set on edge is less than the diameter of the composition rod, so that the friction surface is subject to wear uniformly over its entire width.

The cigar lighters of the present invention may be constructed in a simple manner so as to function as table, wall or household lighting devices.

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

1). A cigar lighter comprising a casing, a friction surface, a composition rod of repeatedly ignitable material adapted to be ignited by rubbing against the said friction surface, characterised by clamping means adapted automatically to clamp the said composition rod in position after it has been advanced, the said clamping means co-operating with the said composition rod and with a protecting sleeve serving as guide therefor.

2). A cigar lighter as claimed in claim 1, in which the composition rod is clamped by jaws on the protecting sleeve movable radially or radially and axially relatively to said composition rod.

3). A cigar lighter as claimed in claim 1 or 2, in which the casing and its lid are so connected with the clamping means that on closing the lid, the clamping means are thrown out of operation and on opening the lid the clamping means are thrown into operation.

4). A cigar lighter as claimed in claim 1 or 2, in which a support carrying the composition rod and the protecting sleeve serving as guide therefor is connected with the casing by means of a bayonet joint.

5). A cigar lighter as claimed in claim 4, in which the clamping device actuating the clamping jaws is itself actuated by a

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rotary movement around the axis of the composition rod which rotary movement is derived from the rotary component of the movement of the bayonet joint.

5 6). A cigar lighter as claimed in claim 3 or 4, in which a clamping sleeve surrounds the protecting sleeve and effects clamping by an axial movement of the protecting sleeve relatively thereto, and
10 in which stops provided on the protecting sleeve co-operate with control means in such a manner that on opening the lid or removing the casing the clamping means are thrown into operation, whilst on closing
15 the lid or replacing the casing the clamping means are thrown out of operation.

7). A cigar lighter as claimed in claim 6, in which the protecting sleeve which
20 is axially guided in the clamping sleeve is permanently forced outwards into or towards the clamping position by means of a spring.

8). A cigar lighter as claimed in claim 25 6 and 7, in which the protecting sleeve is provided with stops projecting through narrow slots in the clamping sleeve and co-operating directly with the casing or indirectly with the lid, in such a manner
30 that on replacing the casing or closing the lid the protecting sleeve is automatically drawn back, the clamping means being thus thrown out of operation.

9). A cigar lighter as claimed in claim 35 8, in which stops are provided on the clamping sleeve which are in substantially the same axial plane as the stops of the protecting sleeve, the two stops co-operating with a bayonet joint provided
40 in the casing of the cigar lighter.

10). A cigar lighter as claimed in claim 45 9, in which the pitch of the circumferential groove of the bayonet joint is less than the distance between the stops of the protecting sleeve and the clamping sleeve in the clamping position so that on inserting the composition rod into its casing and on locking said rod the two stops
50 approach each other and the clamping is thus released.

11). A cigar lighter as claimed in claim 55 2 and 3, in which the clamping of the composition rod is accomplished by spring actuated clamping means movable at right angles to the composition rod.

12). A cigar lighter as claimed in claim 11, in which the clamping means is actuated and controlled by the movement of the lid.

60 13). A cigar lighter as claimed in claim 3, having manually operable actuating means for the clamping device which allows the clamping to be released when the lid is open.

65 14). A cigar lighter as claimed in either

of claims 3 or 4, in which a stop limiting the feed of the composition rod is provided on either the casing or the clamping sleeve.

15). A cigar lighter as claimed in claim 14, in which the closed end of the casing itself forms the stop for the composition rod which is automatically fed on releasing the clamping means. 70

16). A cigar lighter as claimed in claims 3 and 14, in which the extent of the automatic feed of the composition rod is limited by a movable, preferably rocking, stop on the casing or the clamping sleeve which is so actuated depending on the control of the clamping and the movement of the lid of the casing that on opening the lid the stop moves out of the path of the composition rod before the friction surface co-operates with said composition rod and after the latter has been clamped, while in the closing movement of the lid the stop is moved into the path of the composition rod after the friction surface has passed over the composition rod, but before the latter has been unclamped. 75 80 85 90

17). A cigar lighter as claimed in claim 1, in which the friction surface is arranged in the lid of the casing and the movement of the lid and the feed of the composition rod are so controlled that the friction surface comes into contact with the composition rod during the opening movement of the lid but remains out of contact with the composition rod during the closing movement of the lid. 95 100

18). A cigar lighter as claimed in claim 17, in which the lid carries members coacting with curved guides on the body of the casing in such a manner as to keep the lid with its striking surface out of contact with the composition rod, during the closing movement of said lid. 105

19). A cigar lighter as claimed in claim 18, in which a carrier for the friction surface is yieldably mounted in the lid. 110

20). A cigar lighter as claimed in claim 19, in which the friction surface is automatically advanced in its carrier and is firmly clamped during the working movement while in the position of rest the friction surface is free to move. 115

21). A cigar lighter as claimed in claim 20, in which a wall of the guide of the friction surface forced by a strong spring towards or against the said friction surface is provided with projections cooperating with stationary projections arranged on the stationary part of the cigar lighter for releasing the friction surface. 120 125

22). A cigar lighter as claimed in claim 21, in which the front wall of the guide containing the friction surface is 130

formed by a slide so as to enable the friction surface to be readily inserted into the carrier therefor.

23). A cigar lighter as claimed in claim 5 19, in which the width of the friction surface set on edge is less than the diameter of the composition rod.

24). A cigar lighter as claimed in claim 10 23, in which the friction surface and the composition rod are so arranged relatively to each other, that before the friction surface passes over the composition

rod, said friction surface strikes against the composition rod.

25). The cigar lighters, constructed, 15 arranged and adapted to operate, substantially as described with reference to the accompanying drawings.

Dated this 13th day of April, 1933.
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Agent for the Applicant.

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

