

1,370,631.

Patented Mar. 8, 1921.

Fig. 1.

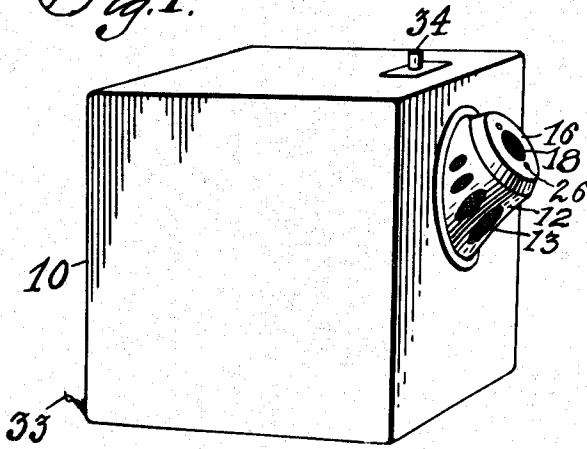


Fig. 2.

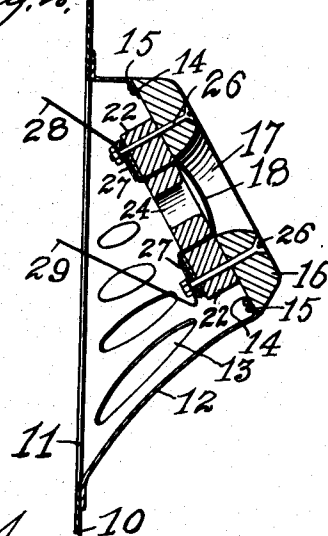


Fig. 3.

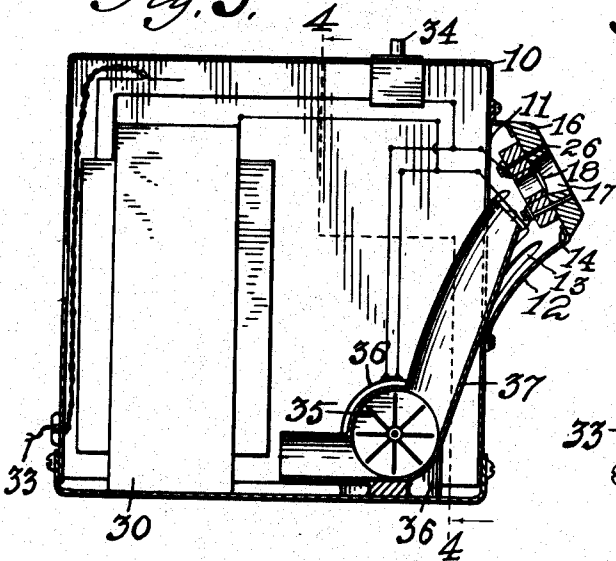


Fig. 4.

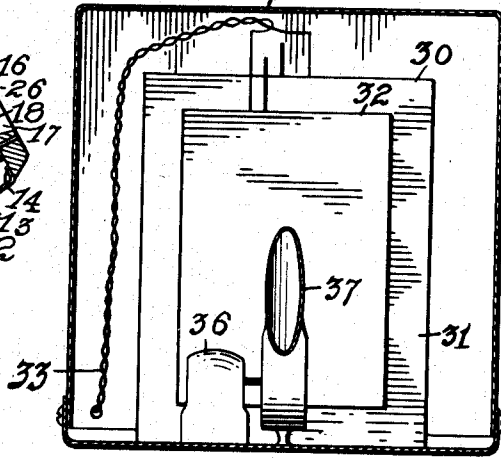


Fig. 5.

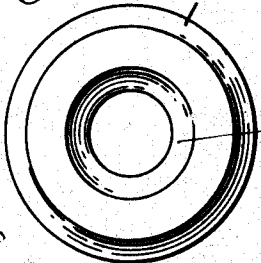


Fig. 6.

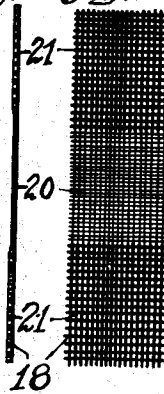
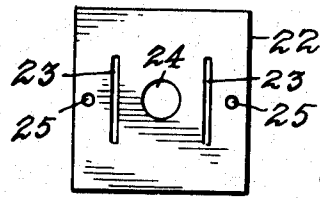


Fig. 7.

Fig. 8.



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UNITED STATES PATENT OFFICE.

DUDLEY B. CLARK, OF JAMESTOWN, NEW YORK, ASSIGNOR TO CLARK, OSGOOD AND ALLISON, INCORPORATED, A CORPORATION OF NEW YORK.

ELECTRIC CIGAR-LIGHTER.

1,370,631.

Specification of Letters Patent.

Patented Mar. 8, 1921.

Application filed December 17, 1919. Serial No. 345,573.

To all whom it may concern:

Be it known that I, DUDLEY B. CLARK, a citizen of the United States, residing at the city of Jamestown, in the county of Chautauqua and State of New York, have invented certain new and useful Improvements in Electric Cigar-Lighters, of which the following, taken in connection with the accompanying drawings, is a specification.

The invention relates to electrical igniters or lighters, the special use being shown as a tobacco lighter, and the present invention pertains to the construction shown in my Letters Patent No. 1,253,575, dated January 15, 1918. As in my former construction, the increase and decrease of resistance is exerted in certain portions of the electrical resistance conductor according as it is desired to secure high or low temperature at certain points in said conductor by the addition or subtraction of conductive material, and particularly the high resistance material at the point where more heat is required. The subtraction of the conductive material is attained by punching, drilling or thinning that portion of the metal so that the bridging between the holes or openings will be heated to a higher temperature than the surrounding material.

The object of the present improvement is, first, to provide a grid or lighting element with connections through a push switch to a transformer so that the lighter may be attached to the regular electric light or other circuit as a source of electrical supply, the transformer changing from high circuit to a sufficiently low circuit to attain the desired purpose; and second, to control the heat of the heating element and blow all ashes or other foreign matter therefrom by means of an electrically propelled fan from which the air under force is carried to within a short distance of the inner side of said heating element and passes out through the openings in the same preventing clogging; and the invention consists in the novel features and combinations hereinafter set forth and claimed.

In the drawings, Figure 1 is a perspective view of the cigar or tobacco lighter, showing the lighter head on the side of the same and the momentary push switch on top of the case. Fig. 2 is a vertical sectional view of the lighter head showing the lighting element and the manner of attaching the same.

Fig. 3 is a similar sectional view of the lighter head, and also a vertical sectional view of the entire case and fan, showing an end view of the transformer and its connection through the momentary push switch to the opposite ends of the heating element. Fig. 4 is a sectional view at line 4—4 in Fig. 3 showing a side elevation of the transformer and the manner of connecting the same, also showing the motor and blower connected in series with the transformer and momentary contact switch. Fig. 5 is a plan view of the non-combustible head of the lighter showing the opening in the same beneath which the grid or lighting element is placed. Figs. 6 and 7 show edgewise and plan views of the lighting element or grid showing the construction of the same with the thin central portion. Fig. 8 is a plan view of the slotted block of non-combustible material in which the heating element or grid is mounted.

Like characters of reference refer to corresponding parts in the several views.

The numeral 10 designates the casing which is preferably made of sheet metal, and has the lighter head opening 11 preferably upon one side though it may be placed on top of the same. The lighter head consists of a ventilating hood and support 12 which is provided to cover the opening 11, being attached to the case 10 preferably by means of suitable screws though it may be spot welded to the casing. In order to ventilate the interior of the casing 10 and the lighter head around the heating element, a series of ventilating openings 13 are provided preferably around the lower side of the hood 12. These openings 12 are preferably screened, as shown in Fig. 1, in order to prevent cigar ashes and other dirt and dust entering the casing 10.

The support hood 12 is made tubular and has an inturned flange 14 around its outer end to receive thereon the non-combustible, preferably machined lava, ring 16 which is attached to the hood 12 by means of screws 15 through the inturned flange 14. The lava ring has the central opening 17 within which the end of the cigar is placed to light the same.

The lighting device consists of a grid or plate 18 which has the perforations 19 through its central portion, the immediate central part having a larger number of said

perforations. Said perforations 19 assist in delaying the flow of the electrical current therethrough and thereby increase the resistance and heat of said plate or grid 18 and particularly the bridging portion between the perforations 19. Said central portion of the grid 18 is made thinner than the ends, as shown at 20 in Fig. 6, and the larger number of perforations 19 through the central portion 20 increases the resistance at that point so that the resistance at said central portion is greater and it thereby attains a higher degree of heat. Each of the end portions 21 are of sufficient thickness to permit the electrical current to flow freely to the thinner central portion 20 to thereby insure the quick heating of said central portion.

The grid 18 is supported preferably upon a block 22 of non-combustible material, preferably asbestos board, having the spaced slots 23 each side of a central opening 24 which continues the opening 17 in the lava ring 16, suitable holes 25 being provided in each end of the block 22 for the attaching bolts 26 to place the opening 24 as an extension of the opening 17 though smaller, which bolts 26 extend up through the machined lava ring 16. The ends 21 of the grid 18 are turned and held against the inner side of the block 22 by being received in the copper terminals or folded plates 27, each end 21 and folded plate 27 being firmly held by the nut on the inner end of each bolt 26. The grid 18 passes up through one of the slots 22 and crosses over the central opening 24 and beneath opening 17 and down through the opposite slot 23 and is then turned to be received in the terminals 27. The electrical connecting wires 28 and 29 are held in contact with the terminals 27 by the bolts on the nuts 26. The grid 18 is preferably made of nichrome or other high resistance metal for electricity. The perforations 19 preferably extend centrally from edge to edge of the grid so that the electrical current cannot escape around said perforations but must pass through and heat the bridging therebetween.

The numeral 30 designates a step-down transformer for the electrical current which has the iron core 31 and windings 32, the transformer 30 having a wire connecting cable 33 to the source of electrical energy. The transformer is connected to a momentary contact switch 34 which is preferably of the push switch type so that the grid 18 may be heated to incandescence for a short space of time by pushing in the push switch 34. The wires 28 and 29 also connect in series with the push switch 34 and the transformer 30 by the wires 29.

A fan blower 35 with motor 36 is also connected in series with the push switch 34 and transformer so as to simultaneously receive

the electrical current when the push switch 34 is actuated. The fan 35 is mounted in a tubular casing 37 which has the open end 38 within the casing 10 and extends up to within a short distance of the opening 24 in the block 22 which supports a grid 18.

This arrangement of the blower with conducting tube to the inner side of the resistance grid 18 at its central portion 20 permits lighting a cigar or cigarette without drawing on the same through the lips, as the fan forces the air through the openings 20 in the hot grid 18 into the cigar thereby lighting the cigar. The blower 35 is operated by the same push button switch 34 that lights the grid 18 to incandescence within the opening 11. At the same time also the fan 35 blows away all dust, dirt, cigar ashes and similar substance from the grid 18 and keeps the perforations 20 open so that the grid does not get clogged and inoperative but is always ready for use.

It is apparent that the support for the grid 18 is simple, being composed of the three pieces, the hood 12, machined lava ring 16 and block 22. The step-down transformer 30 is for use upon electric lighting circuits. It is apparent that this simple cigar lighter may be used with a storage battery, making a safe cigar lighter for use on airplanes or motor trucks or lorries or wherever gasoline is used.

I claim as new:—

1. In combination with a cigar lighter head, an igniting element for a cigar connected through a step-down transformer to a lighting circuit as an electrical source of supply to heat said igniting element.

2. In a cigar lighter, a lighting head including a disk having spaced slots, an igniting element disposed across the space between the slots and on the outer face of the disk and having its ends extending through the slots and then turned outwardly at an angle and engaged with the inner face of the disk, a guard superimposed on the outer face of the disk, wires in circuit, and screws extending through the guard, through the disk and through the ends of said element and connected to the respective wires.

3. In a cigar lighter, a lighting head including a disk, an igniting element on the outer face of the disk having its ends extending beyond the inner face of the disk and turned at an angle and engaged with the inner face of the disk, a guard superimposed on the outer face of the disk, electric wires for the element, and combined means connected to the wires and to the guard and disk for securing the parts in their recited relation.

4. In a cigar lighter, a lighting head comprising a heating disk spaced above a heat and electric insulation disk by insulation blocks, said disks connected to one another

by bolts through said blocks, a resistance cigar igniting element attached in said heating disk, said igniting element connected through a step-down transformer to a lighting circuit as a source of electrical supply.

5 5. In combination with a cigar lighter head, an igniting element for a cigar comprising a grid having a thinner central portion than the ends thereof to increase the resistance at that point, and the ends of said igniting element connected through a step-down transformer to a lighting circuit as an electrical source of supply to give an igniting heat to said central portion.

15 6. A cigar lighter comprising a casing, a non-combustible two-piece lighter head on said casing having a central hole therethrough, a flat perforated igniting element supported between the parts of said lighter head across said hole to permit circulation of air through said hole and perforated element, and means within said casing to drive the air through said hole and perforate igniting element into a cigar end in said hole to light the same.

20 7. A cigar lighter comprising a casing, a non-combustible lighter head supported on said casing having an opening therethrough, a rigid igniting element supported in said opening on said lighting head comprising a sheet of high resistance metal having a series of central perforations to increase the resistance and superheat the central portion of said sheet, suitable electrical connection to said sheet to heat the same, and a blower within said casing to blow the heat from said igniting element into the cigar to ignite the same.

30 8. A cigar lighter comprising a casing, a non-combustible two-piece lighter head having a central hole therethrough, said pieces attached to one another, the inner non-combustible piece having spaced slots therethrough one each side of said hole, a flat perforate igniting element inserted through said slots and across said hole therebetween, the ends of said igniting element held in suitable retaining terminals, and electrical connection thereto to heat said igniting element.

40 9. A cigar lighter comprising a casing, a ventilated hood support attached to the side of said casing, a lighter head attached to said support comprising a lava ring having a hole central thereof to receive the lighting end of a cigar, an asbestos block attached to the inner side of said lava ring

having a diminished continuation of said hole in said lava ring therethrough, spaced slots each side of said hole in said block, a flat perforate igniting element received through said slots and across said hole in said block, folded terminals to receive the ends of said igniting element, a momentary push switch and a step down transformer within said casing and connected to said terminals in series to momentarily heat said igniting element, and a fan blower and motor connected in said series to momentarily blow the air through said igniting element while heated to light the end of the cigar.

10. In a cigar lighter, a tubular support having perforations in its sides, a centrally apertured guard extending over the outer end of the support, a disk of less diameter than the guard secured in the hood and adjacent the inner face of the guard and having its periphery spaced from the inner circumference of the hood to allow air to enter between the hood and the disk periphery, and an energizable igniting element carried by the disk.

11. In a cigar lighter, a support, a guard borne by the support and having a cigar-receiving aperture, a disk beneath the guard having its periphery exposed so as to contact with the air to cool same, and an igniting element borne by the disk.

12. In a cigar lighter, a lighting head, igniting means, means to heat the igniting means, and means to force a blast of air against the igniting means upon heating of the igniting means.

13. In a cigar lighter, igniting means, means to force a blast of air against the igniting means, and means to simultaneously heat the igniting means and to operate the air forcing means.

14. In a cigar lighter, a tubular member, a lighting head on one end of the member, a rotary fan at the opposite end of the member, and means to operate the fan and simultaneously to heat the igniting means.

15. In a cigar lighter, a tubular member, a lighting head connected to the member, a fan also connected to the member, and means to operate the fan and simultaneously to heat the igniting means.

In testimony whereof I have affixed my signature in the presence of two witnesses.
DUDLEY B. CLARK.

Witnesses:

H. A. SANDBERG,
H. P. ANDERSON.