Nov. 7, 1950 B. STEIN 2,528,619

ELECTRIC LIGHTER AND DISPENSER FOR CIGARETTES

Filed Dec. 11, 1947

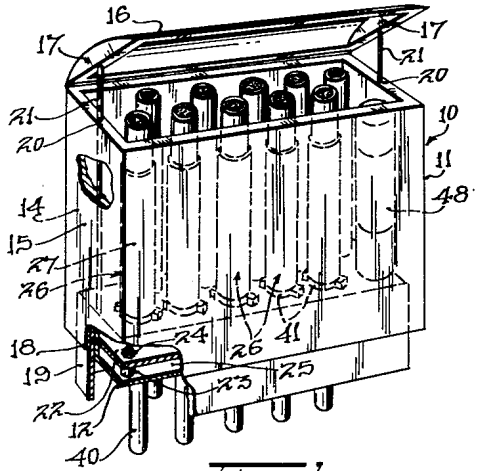

FIG. 1.

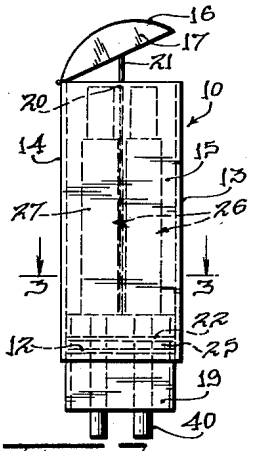

FIG. 2.

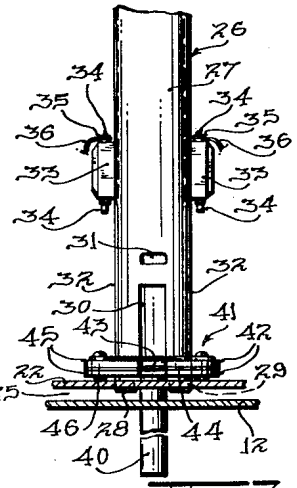

FIG. 7.

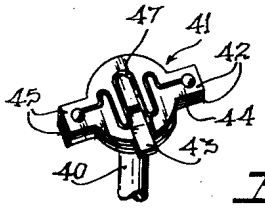

FIG. 6.

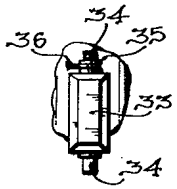

FIG. 8.

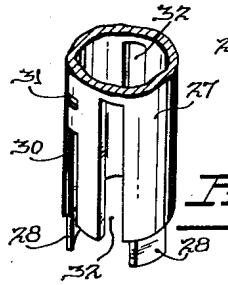

FIG. 5.

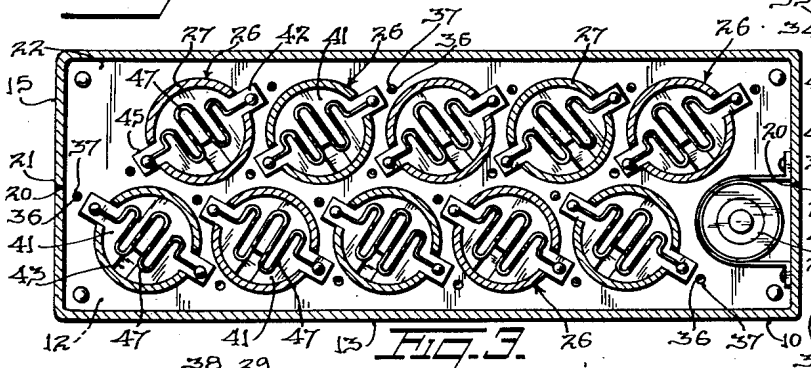

FIG. 3.

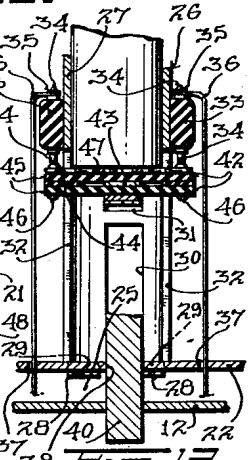

FIG. 12.

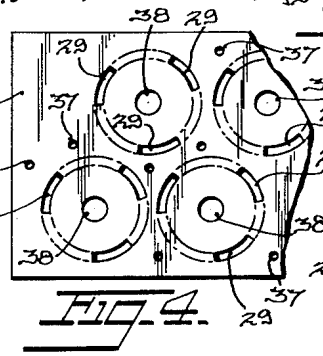

FIG. 4.

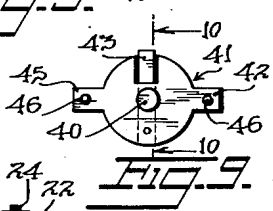

FIG. 9.

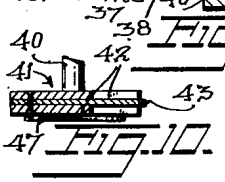

FIG. 10.

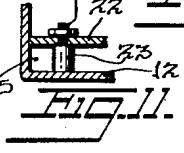

FIG. 11.

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ELECTRIC LIGHTER AND DISPENSER FOR CIGARETTES

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Application December 11, 1947, Serial No. 791,000

4 Claims. (Cl. 219—32)

1

This invention relates to a combined cigarette dispenser and electric lighter.

More particularly, the invention relates to a cigarette case and lighter which if made of small size, may be carried in the pocket, and which, if made of large size, may serve as a table model, or the like, the case having individual cigarette dispensing means and means for automatically lighting the cigarette being dispensed, that is by puffing on the raised cigarette while still in the case and then the cigarette may be withdrawn by the lips of the smoker.

An object of the present invention is to provide a cigarette dispensing machine which will dispense a convenient number of cigarettes to be carried about in the pocket, which machine has automatic means for individually lighting the cigarette being chosen by the smoker.

Another object is to provide a safe and efficient pocket lighting device which is compact and inexpensive and may also be made of sufficient size to be used as a table model for heating a resistance element adapted to light a cigarette.

A further object is to provide a cigarette-dispensing machine consisting of a rectangular case having a hinged cover, push rods for dispensing the cigarettes, a shroud for covering the push rods and means connecting the cover and shroud for automatically lifting the shroud to expose the push rods when the cover is opened.

Another object is to provide a dispenser as aforesaid for a number of cigarettes in which each cigarette is dispensed one at a time by a push rod mechanism which automatically lights the cigarette being dispensed.

Another object is to provide a dispenser as aforesaid in which the push rod mechanism of a cigarette already dispensed is held in an inoperative position until reloaded with another cigarette.

For further comprehension of the invention, and of the objects and advantages thereof, reference will be had to the following description and accompanying drawings, and to the appended claims in which the various novel features of the invention are more particularly set forth.

In the accompanying drawings forming a material part of this disclosure—

Fig. 1 is a perspective view of a cigarette-dispensing machine made in accordance with this invention, the lower left hand corner being broken open and the cover being in partially opened position.

Fig. 2 is a side view of the machine with the cover partly opened,

2

Fig. 3 is an enlarged section on the line 3—3 of Fig. 2.

Fig. 4 is a plan of a portion of the false bottom of the machine.

Fig. 5 is a fragmentary perspective view of a cylinder of the machine.

Fig. 6 is a perspective view of the lighter part of the machine cigarette-dispensing device.

Fig. 7 is a fragmentary elevational view of a lighter and dispensing unit.

Fig. 8 is an enlarged view of one of the main contacts.

Fig. 9 is a bottom plan view of Fig. 6.

Fig. 10 is a section on the line 10—10 of Fig. 9.

Fig. 11 is a fragmentary vertical sectional view of a corner of the case showing the false bottom.

Fig. 12 is an enlarged fragmentary vertical sectional view of one of the cigarette-dispensing devices.

The cigarette-dispensing machine, indicated generally by reference numeral 10, comprises, according to this invention, a rectangular case 11 having a bottom wall 12, a front wall 13, a rear wall 14, end walls 15 and a hinged cover 16. The hinged cover is slightly hollow and has end walls 17. The bottom wall 12 is inset in the vertical walls and these walls, enclose a space as 18 into which the shroud or guard 19 may telescope as shown in Fig. 1. The walls 15 each contains a tiny vertical bore 20 for a strand of relatively stiff piano wire 21, the piano wire being connected at the bottom to the top of the shroud 19 and at the top to the two end walls 17. Thus when the cover 16 is opened, the strands of piano wire are pulled upwardly, raising the shroud 19 in the guideway 18 and when the cover is closed, the strands of piano wire push the shroud down again, the wire being stiff enough to perform this function but being flexible enough to bend above the walls 15 as the cover 16 swings.

The case also has a false bottom 22 suitably supported above the bottom wall 12 by posts 23 and bolts 24, thus providing a chamber 25 for receiving electric circuit wires, as will later more fully appear.

There are a plurality of cigarette dispensing devices 26 supported on the bottom 22. In a dispenser which is intended to be carried about in the pocket, the number of devices 26 is naturally limited by size and may be restricted to a single unit if desired. In stationary models, such as table models or display models, the number may be considerable.

Each device 26 includes a cylinder 27 which is secured to the false bottom by depending tabs 28

which extend through slots 29 in the false bottom and are bent over, as shown in Fig. 12. The cylinder has a relatively long wide vertical slot 30 extending from its bottom upwardly a considerable distance as shown. Above slot 30 is a short transverse slot 31. Ninety degrees in either direction from slots 30 and 31 are two wide vertical guideway slots 32. Insulated blocks 33 are secured to the outer wall of the cylinder at the tops of the guideways 32 and each block 33 has an electrical contact 34 the lower end of which depends from its block and the upper end of which extends above its block and has secured thereto, by a nut 35, an electric wire 36. These wires pass through orifices 37 in the false bottom into the chamber 25.

The false bottom 22 and the bottom 12 have aligned orifices 38 at the axis of each cylinder. A push rod 40, shown foreshortened in Fig. 12, is slidably disposed in said orifices. A disc-like member 41 is rigidly secured to the top of the push rod 40 and is adapted to slide in the tube or cylinder 27. This member consists of two superposed discs 42, of insulating material such as Micarta, between which is disposed an end portion of a leaf or blade spring 43, which spaces the discs 42 apart. To fill the space between the discs, one or more fillers 44 are employed. To permit proper flexing of the free end portion of the spring, the discs and fillers are suitably cut away above and below the spring as best seen in Figs. 6, 9 and 10. The discs have wings or projecting tongues 45 at right angles to the spring and these wings slide in guideways 32. Rivets 46 passing through the wings secure the discs and fillers 44 rigidly together. The top heads of the rivets form electrical contacts and a resistance wire element 47, coiled flat on top of the top disc 45, bridges the two contact point rivets 46.

A battery 48 is disposed in one corner of the case and the two wires or other usual forms of conductors 36 of each device are suitably led to the battery through the chamber 25 in a well known manner. The two wires 36 of each device are normally disconnected, but are electrically connected when the rivets 46 are pushed into contact with the posts or contacts 34, the circuit then being from one wire 36 through the contact 34 connected thereto, through the contacting rivet 46 to the resistance wire, through the resistance wire, heating it to a red glow, to the other rivet 46, and thence through the other contact 34 to the other wire or other conductors 36. The wires 36 are one a positive and one a negative, in the usual manner, and all positive wires 36 of the devices are led to the battery in parallel to one terminal thereof and all negative wires 36 of the devices are led to the battery in parallel to the other terminal therof. While one battery is shown, other batteries may be grouped therewith if desired.

The operation of the dispensing machine is as follows: Normally all of the push rods 40 are in their lowermost positions with their lower ends covered by the shroud 19. Assuming that each cylinder 27 contains a cigarette, all devices will be in the same condition. The smoker then opens the cover 16, which via the wires 21, raises the shroud 19, exposing the lower ends of the push rods 40. The smoker then pushes upwardly on one of the push rods. It is immaterial which one. The correlated spring 43 slides in the slot 30 with the discs 42 sliding in the cylinders 27 and the tongues 45 sliding in the slots 32. The cigarette if present, remains in contact with the wire 47 and is pushed upwardly as the member 41 is pushed upwardly. The free end of the spring 43 is flexed sufficiently as it strikes the top end wall of the slot 30 and is stopped temporarily thereby, to permit said end to leave the slot 30 and to enter the slot 31. Said end of the spring 43 is freed of stress as it enters the slot 31. However, as the upward movement of the rod 40 is continued, the free end of the spring strikes and is stopped by the top wall of the slot 31, while the disc 41 and its stem continue to move, thereby against stressing and flexing the spring. The rivets 46 are thus forced into contact with the contacts 34, and current passes through the resistance, lighting the cigarette. The cigarette is then puffed on while it is still resting on the hot resistance element and then it may be pulled out of the cylinder by the lips and puffed on to "catch" the smouldering end before it can go out.

When the cigarette is withdrawn, the member 41 drops by gravity after the push rod 40 is released, until the spring 43 touches the bottom of the slot 31. It rests at this position with the spring deenergized or unstressed, and at this position the rivets 46 are spaced from the contacts 34 so that the resistance is isolated from electrical current. Furthermore, if the case is tipped so that the member 41 falls by gravity to the top of the slot 31, the resistance will still be isolated since the spring must be energized or flexed before electrical contact is effected. This is a safety feature which is quite important for if electric contact were made accidentally or inadvertently, a fire might be started in the case. In other words when the push rod 40 is moved upwardly with the spring 43 in slot 31, when the spring 43 engages the top of slot 31 the rivets 46 will be spaced from the contacts 34. To effect contact it is necessary to push the rod 40 up further, flexing and energizing the spring 43, before the contacts 34 engage the rivets 46. The spring breaks the contact when the push rod is released. That part of the tube or cylinder 27 between the slots 30 and 31 constitutes a bar which aids in preventing the loaded devices from reaching a position where the resistance is heated until the push rod is deliberately operated.

Since the spring 43 remains in slot 31 after the cigarette is withdrawn, the smoker will not inadvertently try to obtain a cigarette from a cylinder which is empty, since the push rods 40 of empty cylinders remain at a different level above the level of the push rods of the clinders containing cigarettes. The free end of the spring 43 may remain at all times in the slot 31 if desired, as when the device is to be used as a pocket lighter.

When the dispenser is empty, a cigarette is pushed into each cylinder and each member 41 is pushed, by said cigarette, with sufficient force to push spring 43 from slot 31 into slot 30.

While I have illustrated and described the preferred embodiment of my invention, it is to be understood that I do not limit myself to the precise constructions herein disclosed and the right is reserved to all changes and modifications coming within the scope of the invention as defined in the appended claims.

Having thus described my invention, what I claim as new and desire to secure by United States Letters Patent is:

1. A cigarette dispensing device for lighting and dispensing any selected cigarette of a plurality of such cigarettes before it is withdrawn from the device comprising a case, a plurality of dispensing and lighting devices arranged in par-

allel relation and in parallel rows in the case, each device being upright and in spaced relation to the adjacent devices and each including a push rod mechanism having a stem projecting downwardly below the case, a resistance member supporting the lower end of a cigarette, a cylinder guiding the cigarette, an insulating member slidable non-rotatably in the cylinder and carrying the resistance member, a blade spring projecting radially through the cylinder and carried by the insulating member, a pair of spaced contacts on the outside of the cylinder and in vertical alignment with the respective ends of the resistance member and means on the cylinder halting the movement of the projecting outer end of the spring toward the contacts before the contacts are bridged by the resistance member, the blade spring yielding to permit the final part of the movement of the resistance member into contact with said contacts.

2. A cigarette dispensing machine comprising a case having a bottom plate, a battery in the case, dispensing devices for individually dispensing the cigarettes, each of said devices including a cylinder upstanding from said plate, the cylinder having opposed vertical guideways having a long vertical slot between the guideways and having a short slot in vertical spaced relation to and above said long slot, electric positive and negative contacts at the outside of the cylinder and in upward spaced relation to the small slot, said plate having an orifice at the axis of the cylinder, a push rod mechanism including a stem in the plate orifice and a disc in the cylinder, said disc being connected to the stem and having guiding tongues in said guideways and projecting through the cylinder, a resistance across the top face of the disc and terminating on said tongues outside of the cylinder for bridging said contacts when the disc is raised to heat said resistance, and a blade spring slidable in said long slot and slidable out of the long slot into the short slot, whereby when said stem is down and the cylinder contains a cigarette in contact with the disc, raising the stem to carry the resistance into contact with said contacts results in heating the resistance and igniting the cigarettes, said spring first sliding in the long slot and then sliding in the small slot and retaining said push rod mechanism in a raised position after the cigarette is withdrawn, said spring being sufficiently stiff to maintain the resistance out of engagement with the contacts when the spring is unstressed and at the top of the small slot, the spring engaging the top of the small slot before the resistance bridges said contacts necessitating flexing of the spring to effect heating of the resistance, and means for conducting current from the battery to said contacts.

3. A cigarette dispensing machine comprising a case having a bottom plate, parallel spaced dispensing devices for individually dispensing any selected cigarette in said devices, each of said devices including a cylinder upstanding from the plate, the cylinder having opposed vertical slots therethrough constituting guideways, having a long vertical slot between the guideways and having a short vertical slot in upward spaced relation to said long slot, and electric contacts at the sides of the cylinder, the plate having an orifice at the axis of the cylinder, a push rod mechanism including a stem in the plate orifice and an insulating disc in the cylinder, said disc having a connection to the stem and having guiding tongues projecting through the opposed slots, a resistance across the top face of the disc and terminating on said tongues for bridging the contacts when the disc is raised to heat the resistance, and a blade spring slidable in said short and long slots, whereby when said stem is down and the cylinder contains a cigarette in contact with the disc, the resistance is unheated, said resistance being heated to ignite the cigarette on the raising of the stem to carry the resistance into contact with said contacts, said spring first sliding in the long slot and then sliding in the small slot and retaining said push rod mechanism in a raised position after the cigarette is withdrawn, the free end of said spring engaging the top of the small slot before the resistance bridges the contacts and being sufficiently stiff to maintain the resistance below the contacts when the spring is unstressed necessitating flexing of the spring to effect heating of the resistance, said case having a bottom below the plate forming a chamber and the plate having orifices adjacent said devices, and a battery in the case above the chamber, the contacts having wires extending from the battery through the last mentioned plate orifices into said chamber.

4. In an article of the character described, a tube provided with a pair of longitudinally arranged opposed slots each closed at one end and open at the other end and with a transverse slot in proximity to and between the closed ends of the longitudinal slots, a heating element terminating in a first pair of spaced apart contacts, a member supporting the element and slidable therewith in the tube, said member having a pair of opposed tongues arranged respectively in the respective longitudinal slots, a second relatively fixed pair of contacts in longitudinal alignment respectively with and in longitudinal spaced relation to the first pair of contacts and beyond the transverse slot, and a blade spring carried by the element supporting means and having a free end arranged to enter the transverse slot, the spring being sufficiently stiff to resist movement of the first pair of contacts into engagement with the second pair of contacts after said free end engages the top wall of the transverse slot, said spring flexing to permit such engagement and to permit limited movement of the tongues in the longitudinal slots upon manual pressure applied to the supporting means for the element.

BERNARD STEIN.

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