

March 19, 1935.

S. ISAACS

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CIGARETTE HOLDER AND IGNITER

Filed Nov. 14, 1933

2 Sheets-Sheet 1

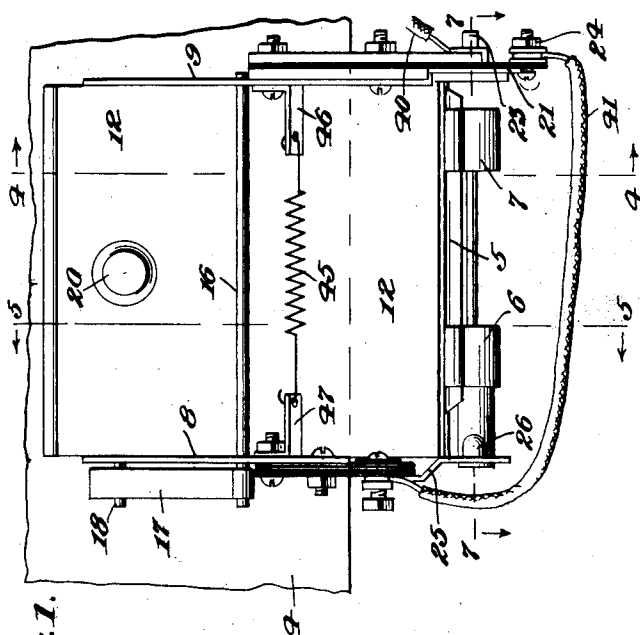


Fig. 1.

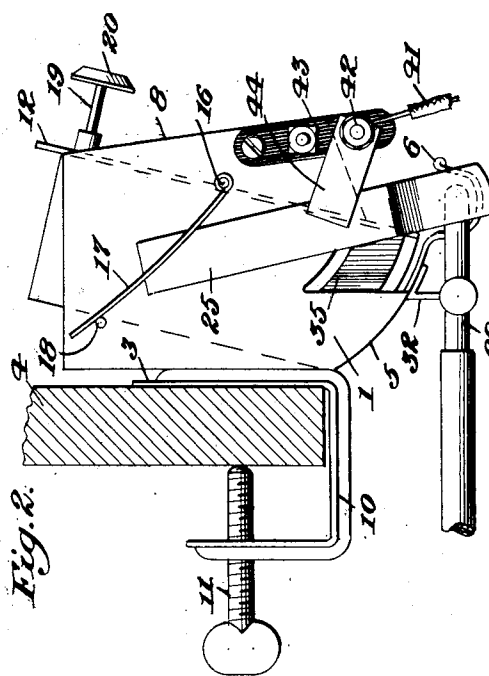


Fig. 2.

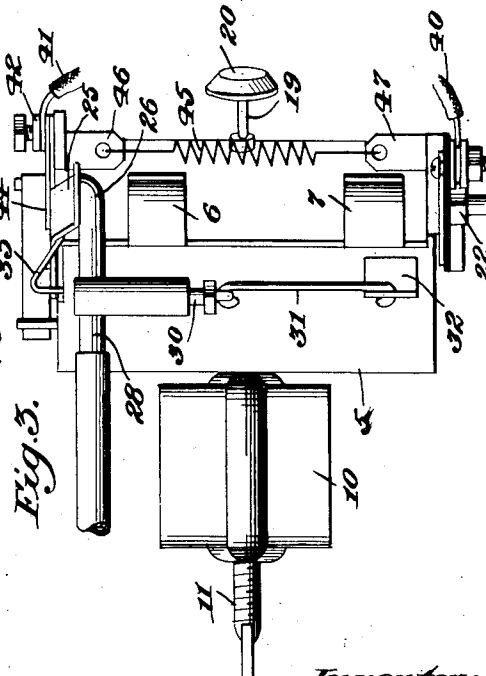


Fig. 3.

Inventor:
 Silas Isaacs,
 by *A. P. [Signature]*
 Att'y.

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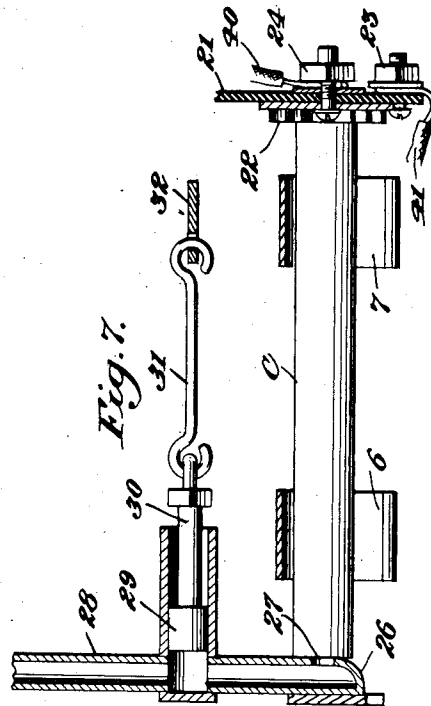
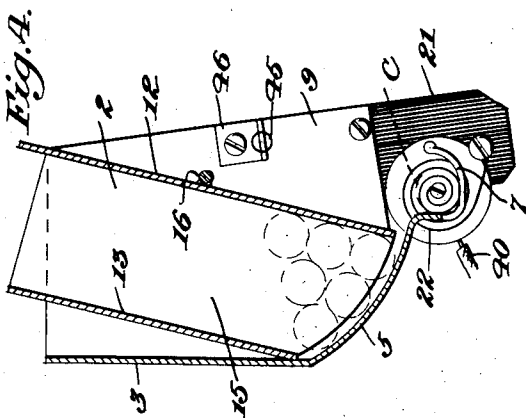
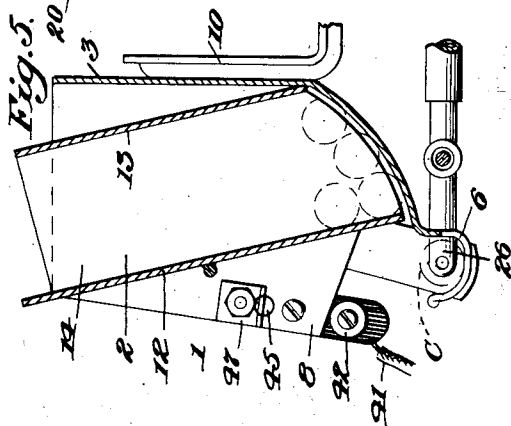
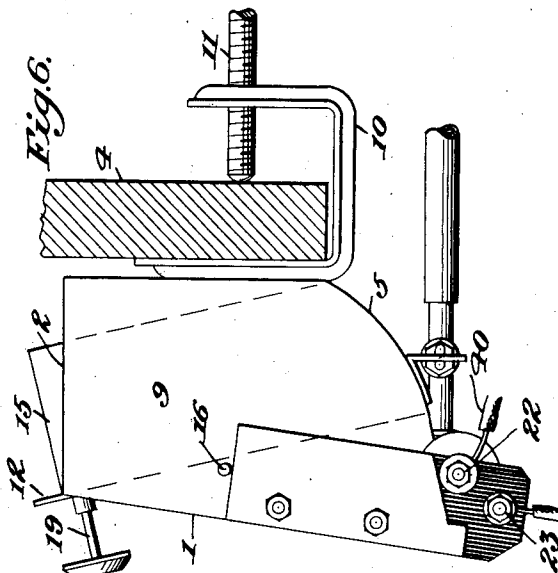
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CIGARETTE HOLDER AND IGNITER

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Inventor:
 Silas Isaacs,
 by *A. P. M. M. M.*
 Att'y.

UNITED STATES PATENT OFFICE

1,994,712

CIGARETTE HOLDER AND IGNITER

Silas Isaacs, Florence, N. Y., assignor to Harold
Walsworth Bell, Camden, N. Y.

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10 Claims. (Cl. 219—32)

My invention relates to cigarette holders and lighters and has for its object to provide a simple and inexpensive device adapted to be carried on the instrument board of an automobile within easy reach of the driver, adapted to carry a substantial number of cigarettes and operable by the driver to feed a single cigarette into position to be lighted and to light it ready for the driver to grasp with his right hand and insert its end in his mouth.

With the general purpose and object above indicated my invention consists in the means hereinafter described and shown for holding and feeding the cigarettes; for igniting them; for supplying oxygen; for closing circuit to the igniting means; for utilizing the cigarette to hold the circuit closed and for also holding open the valve controlling the air suction and for utilizing the shortening of the cigarette as it is consumed for determining the breaking of the circuit, and closing of the valve.

With the above objects and other objects hereinafter described in view my invention consists in the combination and construction of elements hereinafter described and claimed.

Referring to the drawings:

Figure 1 is a front view of a cigarette holder and lighter embodying my invention.

Figure 2 is a side view of the right hand side of the device shown in Figure 1.

Figure 3 is a bottom view of the same.

Figure 4 is a vertical sectional view on line 4—4 of Figure 1, looking to the right.

Figure 5 is a vertical sectional view on line 5—5 of Figure 1, looking to the left.

Figure 6 is a side view of the left hand side of the device shown in Figure 1, and

Figure 7 is an enlarged cross sectional view on line 7—7 of Figure 1.

In the drawings, 1 indicates the outer fixed member of a hopper adapted to receive cigarettes and comprises a back plate having its upper portion 3 flat and adapted to fit against a vertical plate or board 4, such for instance as the instrument board of an automobile and having its lower portion 5 curved downward and forward and carrying at its lower edge strips 6 and 7 curved downward and then upward into trough like form so as to readily receive and support a cigarette and spaced apart a distance sufficient to permit the hand of the smoker to grasp the cigarette to remove it. The hopper 1 is open at top and front, 8 and 9 indicate the end plates of the hopper, shaped as shown, and extending forward having their lower portions curved downward and for-

ward corresponding to the curve of the lower portion of the back plate.

To the back of the upper portion of the back plate is secured a clamp 10 of any usual construction, here shown as having a clamping screw 11 adapted to bear against the back of the supporting board 4.

Fitting between the end plates 8 and 9 is the movable member 2 of the hopper. This is a rectangular box without top or bottom comprising front plate 12, back plate 13, and side plates 14 and 15. These side plates 14 and 15 are curved at their lower ends to correspond with the curve of the lower ends of the lower portion 5 of the back plate of the fixed member 1 of the hopper.

Extending across front plate 12 about midway between its upper and lower edges is a pivot rod 16 having bearings in end plates 8 and 9 with the end of this rod which has its bearings in plate 8 extending through it a substantial distance and having secured to it one end of an upwardly extending spring 17, the upper portion of which bears against a pin 18, the arrangement being such that the spring tends to hold the inner member 2 with its top tilted forward and its lower end tilted rearward and so that its open lower end is in line with and closed by the curved lower portion 5 of the back plate of the stationary member.

Above the pivot rod 16 front plate 12 is preferably provided with push rod 19 with button 20 for convenience in causing the movable member 2 to swing on its pivot rod 16 so as to carry the lower end of plate 12 to a position sufficiently forward of the lower forward edge of lower portion 5 of the back plate to permit a cigarette to drop through onto trough-shaped holders 5 and 6.

Secured to the end plate 9 is a downwardly and forwardly extending strip 21 of insulating material carrying in line with the axis of the holders 6 and 7 a heating coil 22 with terminals 23 and 24. When a cigarette has been dropped down onto holders 6, 7, one end will rest against heating coil 22 and, the circuit being closed through the coil and the coil becoming hot, the end of the cigarette will be heated and, if oxygen is supplied, will be ignited.

Carried on the outer face of side plate 8 and extending downward and forward is a flat spring 25 carrying on its inner face the forwardly extending end of suction pipe 26 having opening 27 so arranged as to be in line with the axis of the holders 6, 7, and so in line with the cigarette carried by these holders. The rear end of this

tube 28 is connected by any suitable tubing with any convenient air suction device. At a suitable point in tube 28 is a valve 29 carried by a rod 30, the free end of which is connected by link 31 to an eye plate 32 secured to the under side of the lower portion 5 of the back plate of the stationary member of the hopper.

Spring 25 tends to normally press pipe end 26 against the end of the cigarette (C in Figure 7) and to also tend to hold tube 28 in such position that valve 29 will close the opening through the tube, but if this tendency of the spring to cause the closing of the valve is checked so as to hold it partly open, the suction through tube 28 will draw air through opening 27 and as pipe end 26 is in contact with the end of the cigarette, the air will be drawn into its other end so as to supply oxygen to the hot coil and so promote combustion sufficiently to ignite the cigarette.

In order to permit the cigarette to drop into position on the holders 6, 7, it is necessary to have the igniting coil 20 and the pipe end 26, at the time the cigarette is dropped, separated a sufficient distance and then, in order that its ends may be in operative contact with the coil and the pipe end, it is necessary to have them brought towards each other. The strip 21 which carries the igniting coil 22 is not intended to move towards or away from the end of the cigarette. Pipe end 26 being carried by spring 25 is, however, movable toward and from the cigarette end and is moved away from the cigarette end by a cam 35 carried on the outer face of end plate 14 of the inner hopper member 2, this cam being so formed that as the lower portion of this inner member 2 swings forward the cam will ride under spring 25 and cause its lower end to swing away from normal position so that pipe end 26 will be moved in a direction away from the igniting coil so that sufficient space will be left to permit of the cigarette dropping into place. On the return of the inner member 2 to normal position the cam 35 passes away from under spring 25 permitting pipe end 26 to press against the cigarette end and by its pressure to cause the cigarette to move sufficiently to bring its other end firmly against igniting coil 22. The movement of spring 25 caused by the action of cam 35 will cause valve 29 to open tube 28 so that air will be sucked in through opening 27. Release of spring 25 will cause valve 29 to move toward closing position.

Cigarettes as sold are, at least as regards the commonly sold brands, of uniform length and the length of the cigarette dropped into holders 6, 7, with its ends in contact respectively with the igniting coil 22 and the pipe end 26, is utilized to hold spring 25 from complete return to normal position and to also hold valve 29 from completely closing. Consequently, so long as spring 25 is so held air will continue to be sucked into opening 27 in pipe end 26 through the cigarette and, coil 22 being heated, oxygen is drawn in, very much as it is drawn through the cigarette in the operation of smoking, thus igniting the cigarette end.

In order to cause coil 22 to heat it is necessary to supply current. This may be supplied from any convenient storage or other battery, or other source of current. This circuit shown is through wire 40 to terminal 22, through coil 22, terminal 23, wire 41 to switch terminal 42 carried by plate 43 of insulated material secured to end plate 8 of outer member 1 of the hopper. This plate 43 carries on its outer face a spring contact 44 which extends rearward outside of and normally out of

contact with spring 25. Spring 25 carried by outer member 1 of the hopper is grounded in any usual way.

When, by pressure on button 20 the inner member 2 is caused to swing on its pivot rod 16 its lower end will swing forward to permit a cigarette to drop and by the action of cam 35 will force the lower end of spring 25 away from its normal position so that the cigarette may drop easily into holders 6, 7, and at the same time will cause spring 25 to contact with spring contact 44 closing circuit to the igniting coil, and at the same time will cause valve 29 to open tube 28 so that air will be drawn through the cigarette and its ignition ensured. On release of pressure on button 20 the inner member 2 will be returned to normal position by spring 17 but while by this movement causing cam 35 to be withdrawn from beneath spring 25, the lower end of the spring will be, by the cigarette, held sufficiently away from complete return to normal position that the spring will still be in contact with spring contact 44 so as to maintain current through the igniting coil. So long as the end of the spring is thus held valve 29 will be partly open and suction will be maintained through the cigarette.

The cigarette thus lighted begins to burn away and as it does so its length is so much reduced that it will no longer hold spring 25 from return to normal position and as it does so return circuit is broken between spring 25 and spring contact 44 and valve 29 moves to completely closed position.

To aid in returning spring 25 to normal position I may use in addition to spring 17 a coil spring 45 having one end secured to an eye plate 46 on side plate 9 and its other end secured to eye plate 47 on side plate 8 on the portion of it forward of the portion cut away for cam 35.

Having thus described my invention what I claim is:

1. In a cigarette holder and lighter, an outer hopper member having a back and lower end and having forwardly extending sides, of which one carries an igniting coil and the other carries an element adapted to yield laterally, a source of current in circuit with the igniting coil, suction apparatus comprising a pipe carried by the yielding element of the other side having an inlet opening in line with the igniting coil, an inner hopper member open at its lower end pivotally mounted within the outer member, a circuit closing switch in the circuit of the igniting coil having normally separated terminals one of which is carried by the yielding side of the outer member and means carried by the inner member for causing the yielding element on the side of the outer member to move outward to force said switch terminals into contact.

2. In a cigarette holder and lighter, an outer hopper member having a back and lower end and having forwardly extending sides, of which one carries an igniting coil and the other carries a laterally yielding member, a spring tending to draw the yielding member inward, a source of current in circuit with the igniting coil, suction apparatus comprising a pipe carried by the yielding member of the other side having an inlet opening in line with the igniting coil, an inner hopper member open at its upper and lower ends pivotally mounted within the outer member, a circuit closing switch in the circuit of the igniting coil having normally separated terminals, a valve controlling the pipe of the suction apparatus and

means carried by the inner hopper member for closing the switch and simultaneously opening the valve of the suction pipe.

3. In a cigarette holder and lighter, an outer hopper member having a back and lower end and having forwardly extending sides, of which one carries an igniting coil and the other carries an element adapted to yield laterally, a source of current in circuit with the igniting coil, suction apparatus comprising a pipe carried by the laterally yielding element having an inlet opening in line with the igniting coil, an inner hopper member open at its upper and lower ends pivotally mounted within the outer member, a circuit closing switch in the circuit of the igniting coil having normally separated terminals one of which is carried by the yielding element carried by the side of the outer member, a valve controlling the pipe of the suction apparatus operably connected with said yielding side of the outer member, and means carried by the inner member for so moving the yielding element on the side of the outer member as to force the switch terminals together and to open the valve of the air suction means, and means tending to return the yielding member to initial position.

4. In a cigarette holder and lighter, an outer hopper member having a back and lower end and having forwardly extending sides, of which one carries an igniting coil and the other carries a downwardly extending spring, a source of current in circuit with the igniting coil, suction apparatus comprising a pipe carried by the downwardly extending spring of the other side having an inlet opening in line with the igniting coil, an inner hopper member open at its upper and lower ends pivotally mounted within the outer member, a circuit closing switch in the circuit of the igniting member having normally separated terminals one of which is carried by the downwardly extending spring on the side of the outer member, a valve controlling the pipe of the suction apparatus having its movable element operatively connected with said downwardly extending spring on the side of the outer member, and means carried by the inner member for so moving said downwardly extending spring as to open said valve.

5. In a cigarette holder and lighter, an outer hopper member having a back and lower end and sides extending forward from its back, an igniting coil carried by one side, suction apparatus comprising a pipe carried by the other side having an inlet opening in line with the igniting coil, an inner hopper member open at its lower end and so pivotally mounted within the outer member that forward movement of its lower end will cause a cigarette to drop over the edge of the bottom of the outer member, a normally open current supply circuit for the igniting coil, a valve normally closing the suction pipe and means carried by the inner hopper member for closing the current supply circuit and simultaneously opening the valve of the suction pipe.

6. In a cigarette holder and lighter, an outer hopper member having a back and lower end and sides extending forward from its back, an igniting coil carried by one side, suction apparatus comprising a pipe carried by the other side having an inlet opening in line with the igniting coil, an inner hopper member open at its lower end and so pivotally mounted within the outer member that forward movement of its lower end will cause a cigarette to drop over the edge of the bottom of the outer member, a normally

open current supply circuit for the igniting coil, a valve normally closing the suction pipe and means carried by the inner hopper member for closing the current supply circuit and simultaneously opening the valve of the suction pipe, and a spring for returning the inner hopper member to initial position.

7. In a cigarette holder and lighter, an outer hopper member having a back and lower end and sides extending forward from its back, an outwardly yielding element carried by one of the sides, an igniting coil carried by said yielding element, suction apparatus comprising a pipe carried by the other side having an inlet opening in line with the igniting coil, an inner member open at its lower end and so pivotally mounted within the outer member that forward movement of its lower end will cause a cigarette to drop over the edge of the bottom of the outer member, a normally open current supply circuit for the igniting coil, a valve normally closing the suction pipe and means carried by the inner hopper member for forcing the outwardly yielding element on the side of the outer hopper member outward to increase the distance between the igniting coil and the pipe of the suction apparatus and simultaneously closing the current supply circuit and opening the valve of the suction pipe.

8. In a cigarette holder and lighter, an outer hopper member having a back and lower end and sides extending forward from its back, an igniting coil carried by one side, suction apparatus comprising a pipe carried by the other side having an inlet opening in line with the igniting coil, an inner hopper member open at its lower end and so pivotally mounted within the outer member that forward movement of its lower end will cause a cigarette to drop over the edge of the bottom of the outer member, means for supporting the cigarette so dropped in line with the igniting coil and the opening of the suction pipe, a normally open current supply circuit for the igniting coil, a valve normally closing the suction pipe and means carried by the inner hopper member for closing the current supply circuit and simultaneously opening the valve of the suction pipe.

9. In a cigarette holder and lighter, an outer hopper member having a back and lower end and sides extending forward from its back, an igniting coil carried by one side, suction apparatus comprising a pipe carried by the other side having an inlet opening in line with the igniting coil, one of said elements being so carried as to be outwardly movable and being so arranged that the distance between the igniting coil and the suction pipe is normally slightly less than the length of a cigarette, an inner hopper member open at its lower end and so pivotally mounted within the outer member that forward movement of its lower end will cause a cigarette to drop over the edge of the bottom of the outer member, means carried by the outer hopper member to receive the cigarette so dropped and sustain it in line with the igniting coil and with the opening in the suction pipe, a normally open current supply circuit for the igniting coil, a valve normally closing the suction pipe and means carried by the inner hopper member for causing the outwardly movable element carried by the side of the outer hopper member to move outward to increase the distance between the igniting coil and the suction pipe so as to permit the dropped cigarette to assume position in line therein and for simul-

taneously closing the circuit of the igniting coil and opening the valve of the suction pipe.

10. In a cigarette holder and lighter, an outer hopper member having a back and lower end and sides extending forward from its back, an igniting coil carried by one side, suction apparatus comprising a pipe carried by the other side having an inlet opening in line with the igniting coil, one of said elements being so carried as to be outwardly movable and being so arranged that the distance between the igniting coil and the suction pipe is normally slightly less than the length of a cigarette, an inner hopper member open at its lower end and so pivotally mounted within the outer member that forward movement of its lower end will cause a cigarette to drop over the edge of the bottom of the outer member, means carried

by the outer hopper member to receive the cigarette so dropped and sustain it in line with the igniting coil and with the opening in the suction pipe, a normally open current supply circuit for the igniting coil, a valve normally closing the suction pipe and means carried by the inner hopper member for causing the outwardly movable element carried by the side of the outer hopper member to move outward to increase the distance between the igniting coil and the suction pipe so as to permit the dropped cigarette to assume position in line therein and for simultaneously closing the circuit of the igniting coil and opening the valve of the suction pipe, and means for returning the inner hopper member to initial position.

SILAS ISAACS.