This invention relates to improvements in cigarette and cigar dispensing devices which are equipped with means for lighting a cigarette or cigar previous to its delivery; and its primary object is to provide a device of the class specified with a removable receptacle adapted to receive ashes or burned stubs of cigarettes and adapted to act primarily as a means of preventing lighted cigarettes from falling to the floor as a safety measure as well as a convenience.

Another object is to provide a cigarette dispensing and lighting device with means adapted to receive a lighted cigarette, said means acting as a support therefor, whether the cigarette is delivered by the device itself, or whether it is temporarily set down by the smoker for the purpose of resuming smoking of the same after a certain time.

A still further object is to provide simple and convenient means for receiving a lighted cigarette as and when delivered by the device through the operation of its dispensing member, said receiving means being placed directly above a suitable receptacle, preferably of a removable nature, adapted to receive ashes and burned stubs of cigarettes, etc.

Other objects and advantages of the present invention will more fully appear as the description proceeds and will be set forth and claimed in the appended claims.

Cigarette dispensing and lighting devices have heretofore been used especially as articles of motor car equipment where the same may be conveniently connected to a source of electric supply and to means for creating suction, such as the vacuum tank or the intake manifold of the engine.

Such devices usually comprise a magazine or container adapted to hold a stack of cigarettes free to descend one by one into or upon a receiving member which is adapted to isolate and remove the cigarette thus received to a dispensing position.

These devices are furthermore provided with means which are operatively associated with the dispensing member or which are independent thereof, for forcing the cigarette against an igniting coil which is normally inoperative but which is rendered operative as the cigarette is thus moved against it, said cigarette forcing means usually comprising a sleeve or suction member controlling a valve or passage through which suction may be exerted as the igniting position is reached.

In such devices it is desirable that suitable means be provided for receiving or depositing a lighted cigarette at the time of its actual delivery by the dispensing member or at any other time to suit the convenience of the user. Furthermore, it is desirable that such a receiving means or receptacle, which may also be used as an ash tray or cigarette stub receiver, be easily detachable from and replaceable in operative position so that the refuse matter contained therein may be conveniently dumped out without marring the interior furnishings of the car or other place where the device is mounted.

Besides being an added convenience for the benefit of the smoker, such a receptacle constitutes an actually necessary precautionary measure, because when provision for receiving the lighted cigarette delivered by the device is not made, there is the ever present danger of a cigarette falling to the floor or to some other exposed part of the car with an attendant danger. This possibility is intensified by the fact that these devices are usually exposed so that any one can operate them and a child or an inexperienced person may thus cause serious damage.

In view of this possibility cases have been known where the lack of a feature of this character has been deemed sufficient cause for refusal of fire insurance, the use of a device not thus equipped, not being approved by the fire underwriters.

For purposes of illustration, the drawings show two different embodiments of my invention, and referring to said drawings:

Fig. 1 is a front view in elevation partly sectioned and broken away of a cigarette lighting and dispensing device embodying my invention;

Fig. 2 is a side sectional view in elevation through line 2—2 of Fig. 1;

Fig. 3 is a fragmentary front sectional...
view in elevation of the lower part of said device showing the position of the various parts after the dispensing member has reached its dispensing position;

Fig. 4 is a fragmentary side view in elevation through line 4—4 of Fig. 3;

Fig. 5 is a fragmentary front view in elevation of the lower part of the device showing the ash tray or receiver detached therefrom;

Fig. 6 is a fragmentary rear view in elevation of the lower part of the device with the ash tray or receiver inserted in position;

Fig. 7 is a fragmentary front view in elevation partly sectioned showing the lower part of the device fitted with a removable ash receiver of a different construction;

Fig. 8 is a fragmentary side sectional view in elevation through line 8—8 of Fig. 7; and

Fig. 9 is a fragmentary plan view of the ash receiver shown in Figs. 7 and 8.

The present invention does not refer to cigarette dispensing and lighting devices per se, since devices consisting of a container for a plurality of cigarettes provided with means for dispensing and lighting a cigarette at a time therefrom have been heretofore known. Devices of this character have also been described and claimed by me in two other patent applications entitled "Cigarette igniting coil control", and "Cigarette igniting device", filed simultaneously herewith.

Specifically, this invention relates to an improvement supplementing and completing the usefulness of this class of devices, and insuring the safety of their operation, said improvement being in the nature of a detachable ash receiver depending from the lower end of the device, adapted to collect ashes, burned stubs of cigarettes, etc., and adapted to be conveniently removed and replaced for the purpose of damping its contents elsewhere.

The invention also includes suitable means for receiving and holding the lighted cigarette delivered by the device within easy reach of the user, directly over the ash receiver, preventing the possibility of a lighted cigarette falling on the floor and thus lessening fire dangers and insuring clean and sanitary conditions.

The drawings illustrate a device similar to the one illustrated in Figs. 10, 11, 12 of my other patent application for Cigarette igniting device above referred to, but for the sake of clarity, the operation of the device will be described also in the present case in order to set in evidence the advantages of the present invention.

Referring to the drawings, 10 designates a magazine or container provided with a chamber 11 adapted to receive a plurality of cigarettes stacked one on top of the other. Said chamber is open at the lower end, while at the top it is closed by a cover 12 hinged at 13 to the back of the container.

The lower end of the device is provided with two coaxial laterally extending sleeves 14, 15 in which is rotatably mounted a dispensing member 16 which is tubular in form and is provided at one end with a stud or projection 17, extending through and beyond the closed outer end wall 18 of sleeve 15. A button or knob 19 is mounted upon extension 17 and may be used for causing the rotary movement of the dispensing member. That part of the dispensing member which is delimited by the inner surfaces of side walls 20, 21, of the container is half cut away to form an open top receiving chamber semi-circular in section, which in the normal position of the dispensing member shown in Fig. 1, forms a bottom for chamber 11 and a receiving chamber for the lowermost cigarette 22 contained in said chamber.

Said dispensing member is provided at its free end with an insulating block 23, rotatable therewith, carrying an igniting coil 24 spirally wound upon its inner surface and attached at one end to an axial contact bar 25, rotatably mounted within a tubular terminal 26, provided through a stationary insulating block 27 mounted at the end of sleeve 14, and having the other end connected to a contact member 28 slightly projecting endwise from insulating block 23, adapted to come in contact with a contact surface 29, integral with a terminal bar 30 which is mounted within another tubular terminal 31, inserted through stationary insulating block 27.

32, 33, designate two electric wires leading from a suitable source of electric supply to terminals 29, 31 respectively.

When the dispensing member is rotated and contact member 28 abuts against contact surface 29, the igniting coil becomes inserted into the circuit and is energized. The rotatory movement of the dispensing member is limited substantially to 180° from its normal position shown in Fig. 1 to its dispensing position shown in Figs. 3 and 4 and the energization of the coil preferably takes place during the period of travel of the dispensing member from one point to another, the coil becoming de-energized as or slightly before the dispensing position is reached. This prevents the possibility of the coil becoming overheated or burning out through an unduly prolonged energization, the fraction of time required by the movement of said dispensing member being sufficient in practice to cause the cigarette to become lighted.

The lighting of the cigarette occurs first by shifting the cigarette within the receiving chamber of the dispensing member close to the igniting coil at the same time that the igniting coil is energized, and then by exerting suction at the other end by some sur-
able means. In the case of a motor car suction means are provided either by the vacuum tank or by the intake manifold to which an inlet tube 34 leading to the inside of sleeve 15 may be connected.

The axial shifting movement of the cigarette is effected by means of a suction member 35 which is axially movable in relation to the dispensing member but is constrained to rotate therewith.

To this end the suction member is provided with a cross pin 36, which passes through an elongated slot (not shown) provided in the dispensing member, said pin projecting through a cam slot 37 provided in sleeve 15 and extending through the wall thereof, for an arc sufficient to allow 180° displacement of said pin about the axis of said sleeve.

Slot 37 has a cam shaped outline which from its starting point is first directed inwardly up to a peak point 38, and then is directed in the opposite direction to the end point 39, which is transversely in line with the starting point. The action of said cam slot during the semi-circular movement of the dispensing member is therefore first to cause the suction member to advance inwardly, forcing cigarette 22 towards the igniting coil, and then to withdraw, resuming its original position when the end of the slot is reached. Both the dispensing member and the suction member are provided with ports or openings such as 40 which register with inlet 84 during the time when the coil is energized, that is, during the major part of the travel of the dispensing member from its normal position to its dispensing position.

The result of this arrangement is that when the dispensing member is moved to its dispensing position, the cigarette within its receiving chamber is shifted close to the igniting coil, while the coil is energized and the suction member which engages the opposite end of the cigarette is connected to the source of suction, therefore, up to a point slightly before the dispensing position is reached, the cigarette is subjected to the heat of the coil at one end and suction at the other end, becoming ignited in the usual way.

As the dispensing position is reached, the suction member has been withdrawn through the action of the cam slot, releasing the lighted cigarette and since the receiving chamber of the dispensing member is now upside down, the cigarette is free to fall out therefrom.

The cigarette may come directly into contact with the coil or else the coil may be protected by perforated mica shield 24 if desired. The suction member is also preferably provided with a shield 35 formed of perforated metal or of fine mesh wire netting inserted between the mouth of the suction member and the suction chamber thereof.

The object of said shield being to prevent loose particles of tobacco from reaching the suction system clogging the same.

In many devices of this character the igniting of the cigarette only takes place when the dispensing position is reached, the release of the cigarette being effected only during the return movement of the member causing its axial displacement. If the device is inadvertently left in this dispensing position however, the cigarette will continue to burn becoming shorter and then falling out of its own accord. In both cases it is therefore desirable to provide means adapted to receive the lighted cigarette thus delivered by the device preventing the same from falling to the floor, spreading ashes all around and possibly causing damage.

In those devices which have come to my notice, a feature of this character is lacking, and it is the purpose of the present invention to provide such a feature in a practical and convenient form.

I therefore provide the dispensing device with a receptacle or container located at the underside thereof, such as shown at 41, said receptacle being adapted to collect ashes, burned stubs, etc., and being detachable, so that its contents may be dumped out when desired. In addition to said receptacle or receiver, I also preferably provide one or more receiving or supporting members 42, 43 which are made out of strip metal and extend downwardly from the rear of the device to a certain distance from the dispensing member, terminating in an upwardly directed hook formed portion 44, which is adapted to receive and retain the cigarette falling out of the dispensing member. Said receiving or supporting members are preferably somewhat inclined towards the front, so that the receiving portion thereof, 44, is slightly ahead of the lower end of the container, facilitating the removal of the cigarette therefrom.

The cigarette therefore does not fall to the bottom of receptacle 41, but remains suspended above said receptacle being supported by members 42, 43, as shown in Fig. 3.

As stated, receptacle or ash receiver 41 is preferably made detachable for the reason stated, and this end may be attained in a number of ways, two possible arrangements being illustrated in the drawings.

In the arrangement shown in Figs. 1 to 6, the lower end of the container at the rear is provided with two upwardly inclined recesses 45, 46, each having a lateral extension such as 47, at its inner end, said recesses are adapted to receive the free ends of two spring arms 48, 49, which are attached close to the lower end of receptacle 41 at 50, 51. The free end of each arm is bent out outwardly to form a laterally extending projection such as 52, adapted to register and to interlock with extensions 47, of recesses 45, 46.

Spring arms 48, 49 are each provided with...
a forwardly extending portion 58, 54, which project through openings 55, 56, provided through the rear wall of receptacle 41, said openings permitting portions 53, 54 being moved a certain distance towards one another. Therefore by pressing said portions inwardly, the arms will be forced to move in the same direction so that lateral projections 52 of said arms will become disengaged from lateral extension 47, of recesses 45, 46, and the ash receiver or receptacle 41 may be removed by sliding the free ends of arms 43, 49, out of recesses 45, 46.

The receptacle is now engaged from the device shown in Fig. 5 and after its contents have been dumped out, it can be replaced by once more pressing arms 43, 49 together and inserting their free ends through slots 45, 46, up to a point where lateral projections 52 can snap into lateral extensions 47, this position being clearly illustrated in Figs. 3 and 6.

As stated before, the device is also preferably provided with means for supporting a lighted cigarette above the ash receiver, preventing the cigarette from falling into said receiver, said means comprising two downwardly extending hook formed members 42, 48. Said members may be attached to the lower end of the container at the rear, their attaching ends being inserted within slots or recesses 57, 58 provided through the lower rear wall of said container 10 and being secured in position by means of screws 59.

It is obvious that an ash receiver may be detachably connected to the device in a number of ways, for instance, in Figs. 7 to 9, I illustrate another type of ash receiver 60, which is merely an elongated receptacle extending underneath the device, provided with two upwardly extending end walls 61, 62, having outwardly bent flanges 63, 64, adapted to register with the lower edges of the container 65, 66.

Each lower end wall of the container is provided with a depending pin or stud, comprising a stem portion 67 and a head portion 68, the clearance between the surface of said lower ends of the side walls of the container and said heads, being sufficient to admit the thickness of flanges 63, 64.

Said flanges are provided with inwardly directed slots or recesses 69, 70, adapted in their turn to engage and to interlock with stem portions 67 of said studs.

The receptacle is inserted in and removed from its operative position by utilizing the natural tendency of the sheet metal of which its end walls are formed to spring back, the normal position of said end walls being that represented in Fig. 7, where the studs are inserted within slots 69, 70, which interlock therewith. To remove the receptacle it is sufficient to press the upper part of said end wall towards one another, causing slots 69, 70 to become disengaged from the studs, and inversely in order to place the receptacle in position it is sufficient to once more press its end walls towards one another and then release them while held close to the studs, allowing the slots once more to interlock with said studs.

In view of the many possible ways in which my invention may be applied, the drawings are to be considered as being intended for purposes of illustration only and not in a limiting sense; therefore, I reserve myself the right to carry my invention into practice in any way or manner which may enter fairly into the scope of the appended claims.

I claim:
1. In a device of the class described a container having delivery means at one end, and a receptacle adjacent said end, movable arms secured to the receptacle, said arms having portions for engaging the receptacle to limit the movement thereof and said container having downward opening recesses at its lower part shaped to receive said arms upon upward movement of the receptacle relative to the container and enable the arms to be detachably engaged by the container to hold the receptacle removably in position.
2. In a device of the class described, a container having delivery means at one end, and a receptacle adjacent said end, and movable arms attached to said receptacle, said arms having projections and said receptacle having recesses for said projections to limit the movement of said arms, said container having recesses in one face with extensions at their inner ends, and the arms bearing portions at their outer extremities to engage said extensions when inserted in said last-named recesses, to hold the receptacle removably in position.
3. In a device of the class described, a container having delivery means at one end, and a receptacle adjacent said end, the receptacle having upward extending arms attached thereto at one side and the container having downward inclined recesses in one lower edge with extensions at their inner ends to receive said arms and hold the receptacle in place on the container.

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