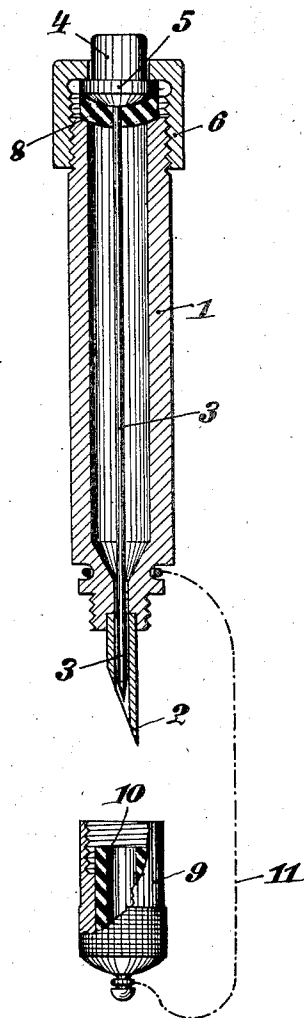


June 13, 1933.

K. STERNBERG
INSTILLATION DEVICE
Filed June 30, 1931

1,913,618



K. Sternberg
INVENTOR

By: Marks & Clerk
ATTYS.

UNITED STATES PATENT OFFICE

KARL STERNBERG, OF VIENNA, AUSTRIA; FRIEDRICH WEISSENSTEIN, ADMINISTRATOR OF SAID KARL STERNBERG, DECEASED, ASSIGNOR, BY MESNE ASSIGNMENTS, TO BONICOT CORPORATION OF AMERICA, OF NEW YORK, N. Y.

INSTILLATION DEVICE

Application filed June 30, 1931, Serial No. 547,951, and in Germany July 5, 1930.

This invention relates to improvement in injecting devices and more particularly to devices specially constructed for injecting or depositing special liquids in cigarettes, cigars and tobaccos, such liquids acting to avoid the harmful effects produced by nicotine.

The invention has for its primary object to provide a simple and effective device for injecting liquids in cigarettes and like tobacco articles at a point therein which will effectively prevent the nicotine being drawn into the mouth of the smoker during smoking.

A further object of the invention is the provision of a device for injecting liquid into tobacco articles which, at each operation, deposits a predetermined and uniform quantity of the liquid, thereby avoiding undue wetting of the tobacco, the quantity of liquid discharged from the device, however, being sufficient to impregnate a zone within the cigarette and prevent passage of the poisonous fumes.

A further object of the invention is the provision of an injecting device which includes means for preventing the obstruction of the discharge orifice for the liquid.

A further object is the provision of an injecting device including a container in which the liquid may be safely stored for long periods without danger of deterioration or leakage.

With the foregoing and other objects in view the invention consists in the various structural features to be hereinafter more fully described by reference to the accompanying drawing, in which the figure is a longitudinal section of an injecting device constructed in accordance with the invention.

Referring to the drawing in detail, the numeral 1 indicates a cylindrical container which is open at one end to permit of the convenient introduction of the liquid and is provided at its opposite end with a restricted passage communicating with a tubular member 2 which latter is bevelled at its outer extremity to provide a penetrating point for convenience of its insertion in the terminal of a cigarette or like tobacco article. The tubular injecting member 2 is of such length that when it is introduced into the end of

a cigarette, for instance, it terminates within the latter at a point where the liquid solution should be deposited.

The bore of the injecting member 2 is in line with the axis of the hollow container 1 and a cleaning rod 3 provided with a pointed terminal lying within the member 2 extends throughout the entire length of the latter as well as the container 1. The cleaning rod 3 is of less diameter than the interior of the tubular member 2 so as to permit of the free passage of liquid from the open terminal of the member 2, as during the injection of a quantity of liquid into a cigarette.

The cleaning rod 3 is connected at its end opposite the member 2 with an actuating button 4 which is located externally of the container 1 and provided with a flange 5. A cap 6 is removably threaded on the open end of the container 1 and is provided with an opening through which the push button 4 projects so that the latter is exposed and is conveniently accessible to the user. The flange 5 confines the button 4 in position and prevents the latter from being withdrawn from the cap. A rubber disc or diaphragm 8 is confined between the open end of the container 1 and the flange 5 and normally retains the latter in the outwardly projected position illustrated. The cleaning rod 3 is of such length that, with the button 4 in the normal position shown in the drawing, the pointed extremity of the rod lies just inside of the open end of the tubular injecting member 2 so that upon depression of the button 14 the rod 13 is forced outwardly, thereby clearing the bore of the injecting member 2 and ensuring free passage of the liquid.

For the purpose of filling the container 1 with the liquid used for treating tobacco, the cap 6, push button 4 and disc 8 are removed, the rod 3 being withdrawn with the push button. During the filling operation discharge of liquid from the container 1 is prevented by a second cap 9 which is threaded on the end of the container 1 and is provided with a hollow rubber plug 10 snugly receiving the projecting member and closing the open end of the latter. In order to prevent

loss of the cap 9 the latter is preferably connected with the container 1 by means of a chain or other flexible article indicated in dotted lines at 11 in the drawing. When the container is filled with the liquid solution the cap 6, button 4 and rod 3 are replaced and the injecting device is in condition for use.

Only a single drop of liquid passes out of the injecting member 2 at each actuation or depression of the push button 4 and cleaning rod 3. The quantity constituting each drop depends not only upon the viscosity and the cohesion of the liquid in the vessel as well as on the degree of pressure exerted by the compressed disc 8, but also on the clearance space provided between the cleaning rod 3 and the interior of the injecting member 2. Upon depression of the button 4 the thin liquid annulus present in the now annular space between the rod 3 and the inner wall of the member 2 is pulled forward and leaves the member 2 in the form of a drop. It will be understood that the rubber disc or diaphragm 8 acts to restore the push button 4 to initial position following a depression thereof and when compressed tends to exert a pressure on the body of liquid contained in the container 1 assisting in the injection of a drop of liquid from the open end of the member 2. However, the displacement of the diaphragm or disc is so slight as to effectively restrict the quantity of liquid ejected or discharged to a single drop, thereby avoiding the discharge of an undue quantity of liquid into the cigarette or like tobacco article and ensure the discharge of uniform quantities of liquid at each operation.

Due to the provision of the cleaning rod 3 and the connection of the latter with the button 4 it is moved axially through the interior of the ejecting member 2 at each depression of the button 4 and effectively clears out any particle of tobacco which may enter the member 2 and tend to obstruct the passage for the discharge of the liquid. The device possesses the further advantage that drops of liquid may be dispensed with equal facility and accuracy irrespective of the quantity of liquid in the container.

The device is preferably constructed of material which is acid-proof and the inside of the container is preferably covered with tin, chrome or the like, while the cleaning rod may be constructed of non-corrosive steel.

What I claim is:

1. In combination, a hollow container having one end open, an injecting member at the opposite end of the container having a discharge opening therein, a rod extending through the discharge opening of the injection member, and a button carried by said rod and projecting from the open end of the container.

2. In combination, a hollow container having one end open, an injecting member at the

opposite end of the container having a discharge opening therein, a rod extending through the discharge opening of the injection member, and a button carried by said rod and projecting from the open end of the container, said rod having a pointed end movable through the injecting member.

3. In combination, a hollow container having one end open, an injecting member at the opposite end of the container having a discharge opening therein, a rod extending through the discharge opening of the injection member, a button carried by said rod and projecting from the open end of the container, and a compressible seating member interposed between the open end of the container and said button.

4. In combination, a hollow container having one end open, an injecting member at the opposite end of the container having a discharge opening therein, and a rod extending through the discharge opening of the injection member, said injecting member and rod having pointed ends.

5. In combination, a hollow container having one end open, an injecting member at the opposite end of the container having a discharge opening therein, and a rod extending through the discharge opening of the injection member, said injecting member and rod having pointed ends and said rod extending substantially throughout the entire length of discharge opening of the injecting member.

6. In combination, a hollow container having one end open, an injecting member at the opposite end of the container having a discharge opening therein, a rod extending through the discharge opening of the injection member, said rod extending substantially throughout the entire length of the container and of the discharge opening of the injecting member, and a button located at the open end of the container and connected with the rod for displacing and causing the latter to project from the open end of the injecting member.

7. In combination, a hollow container having one end open, an injecting member at the opposite end of the container having a discharge opening therein, a rod extending through the discharge opening of the injection member, a button carried by said rod and projecting from the open end of the container, and cap members applied to the opposite ends of the container, one of said cap-like members confining the button and the other cap-like member closing the injecting member.

In testimony whereof I affix my signature.

KARL STERNBERG.