Jan. 21, 1958 G. B. SWEET 2,820,464

CIGARETTE SNUFFER

Filed July 12, 1957

FIG. 1.

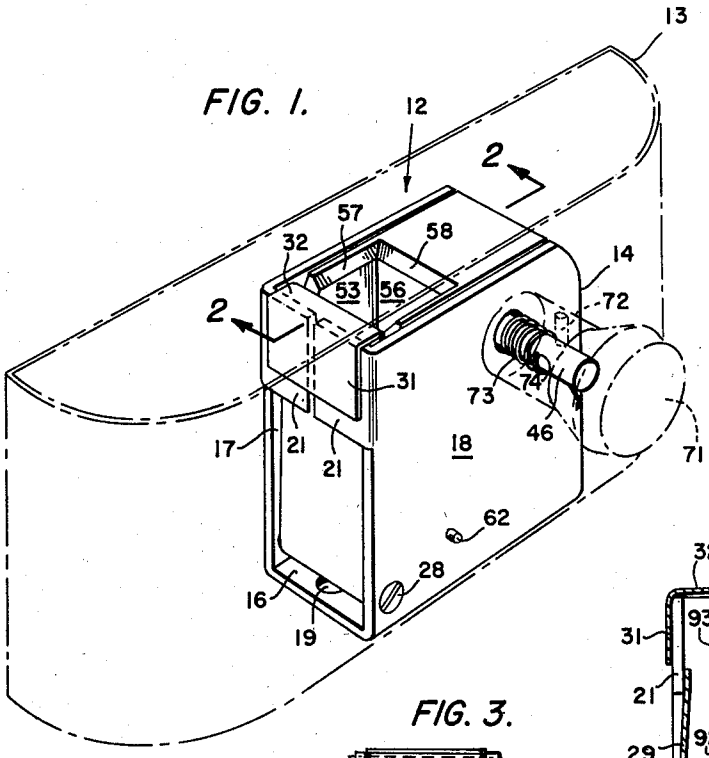


FIG. 8.

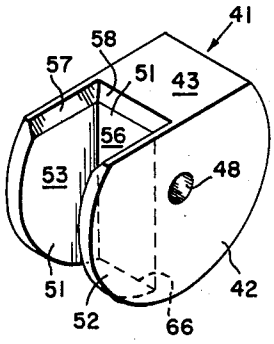


FIG. 2.

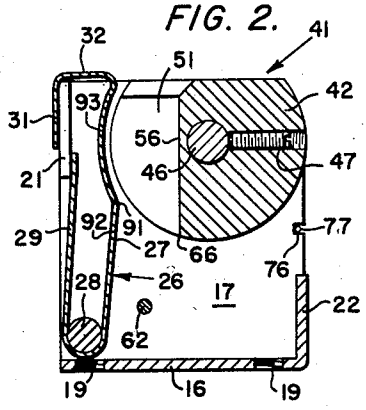


FIG. 3.

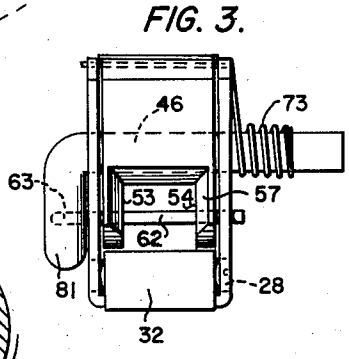


FIG. 5.

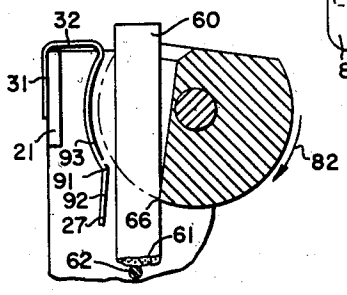


FIG. 4.

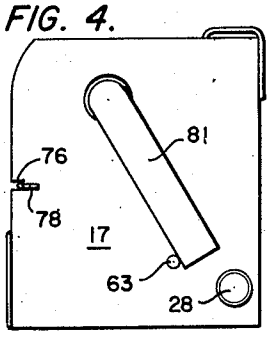


FIG. 7.

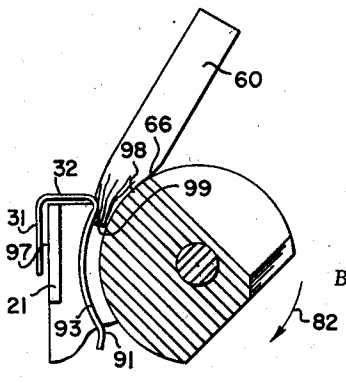
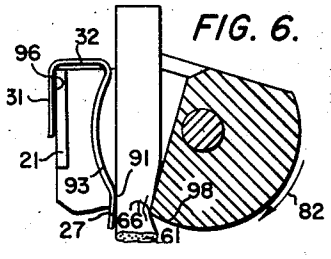


FIG. 6.



INVENTOR.
GERALD B. SWEET

BY Rothrock & West

ATTORNEYS

United States Patent Office

2,820,464

Patented Jan. 21, 1958

2,820,464

CIGARETTE SNUFFER

Gerald B. Sweet, Sacramento, Calif.

Application July 12, 1957, Serial No. 671,656

4 Claims. (Cl. 131—237)

The invention relates to devices for crushing the burning ends of cigarettes and cigars.

While numerous varieties of ash trays and snuffers have made their appearance, particularly in automobiles, the majority of such devices have been utilized in putting out the burning tobacco particles by mashing the cigarette in an end-wise direction against a plate or screen mounted on the devices, this procedure frequently being accompanied by the dispersal of still burning particles by air movement within the automobile.

Still other devices have been used which are supposed both to snuff the cigarette and to receive or store the butt. Such devices are characterized by the generation of unpleasant smoke odors in the event the snuffer fails to do a complete job, an all too frequent occurrence.

It is therefore an object of the invention to provide a cigarette snuffer which is highly reliable in performance.

It is another object of the invention to provide a cigarette snuffer which is relatively inexpensive, is durable and long-lived and has but few moving parts to get out of order.

It is yet a further object of the invention to provide a cigarette snuffer in which the burning tobacco particles are physically separated from the unburned material.

It is a still further object to provide a snuffer in which the quenched cigarette is urged into a position from which it can be observed to verify complete snuffing.

It is yet another object of the invention to provide a generally improved cigarette snuffer.

Other objects, together with the foregoing, are attained in the embodiment described in the following description and shown in the accompanying drawing in which:

Figure 1 is a front perspective of the snuffer in a typical environment, an encompassing container for the snuffed cigars and cigarettes being shown in outline, the rotating knob also being shown in outline more clearly to reveal the underlying structure;

Figure 2 is a median vertical section, the plane of section being indicated by the line 2—2 in Figure 1;

Figure 3 is a top plan;

Figure 4 is a rear side elevation;

Figure 5 is a fragmentary section comparable to the section shown in Figure 2, but with the roller rotated into abutment with a cigarette to be snuffed;

Figure 6 is a view comparable to Figure 5 but with the roller rotated into such position that pinching of the cigarette has commenced;

Figure 7 is comparable with Figure 6 but with the roller approaching its maximum extent of rotation;

Figure 8 is a perspective of the roller.

While the cigarette snuffer of the invention is susceptible of numerous physical embodiments, depending on the environment and requirements of use, substantial numbers of the herein shown and described embodiment have been made and used and have performed in an eminently satisfactory manner.

The cigarette snuffer of the invention generally characterized by the numeral 12, is conveniently disposed in and at least partially encompassed by an elongated storage tray 13, shown in outline, the tray 13 being mounted, for example, on the dashboard of a motor vehicle, train or airplane.

In its preferred embodiment the snuffer 12 comprises a generally box-shaped housing 14 including a bottom panel 16 and a pair of upstanding opposite side walls 17 and 18, appropriate threaded apertures 19 in the bottom panel being provided for mounting purposes, if desired. A pair of in-turned ears 21 on the upper portion of one end of the housing and an up-turned flange 22 on the lower portion of the other end of the housing, as can be seen most clearly in Figure 2, complete the housing structure.

Adjacent one end of the housing is a resilient, heat-conducting member 26, such as a steel leaf spring, configured, tensioned and braced in such a fashion that the vertical innermost portion, termed a buffer strip 27, resiliently bends in a fore and aft direction about a cross-pin 28, extending between the walls 17 and 18, substantially as a center. The lower end of the strip 27 is recurved about the cross-pin 28 and extends upwardly to form a bracing portion 29 abutting the inner surface of the ears 21. An initial tension is impressed on the spring legs 27 and 29 tending to urge the leg 27 in a direction toward the opposite end of the housing. This urgency is limited by interference between a stop strip 31 connected to the spring leg 27 by a connecting strip 32, the stop strip 31 abutting the outer surface of the ears 21 and thus defining a base or zero position for the spring leg 27, as appears most clearly in Figure 2. Separation between the stop strip 31 and the ears 21 occurs as deflection of the spring leg 27 takes place, as is shown in Figures 6 and 7.

The spring leg 27, in other words, exerts a continuing spring force in a direction away from the ears 21 and in a direction toward a cooperating snuffing member, generally termed a roller 41.

The roller 41 comprises a generally circular or disc-shaped body 42, a segment being removed or scalped from the uppermost portion of the body, however, to provide an upper surface 43 substantially co-planar with the upper edge of the snuffer housing 14 in normal roller attitude, as can be seen by reference to Figures 1 and 2. The roller body 42 is rotatably mounted in the housing owing to the provision of a transverse shaft 46 journaled in the housing side walls 17 and 18, the roller being secured to the shaft 46 by a set-screw 47, as shown in Figure 2, a transverse opening 48 in the roller body accommodating the shaft 46.

The roller body 42 has formed therein on the side facing the spring leg 27 a vertical throat 51 bounded on opposite sides by a pair of flanges 51 and 52 whose inner facing surfaces, 53 and 54, respectively, define the sides of the vertical throat or channel, the rearward boundary of the throat being designated by the numeral 56.

The upper margins of the throat are beveled, as at side bevels 57 and at rear bevel 58, in order to conduct or guide the cigarette 60 downwardly into the throat cavity, the cigarette being positioned at a predetermined height by abutment of the ember 61 against a cross pin 62 extending transversely between the sides of the housing and projecting some little distance from the rear side 17 thereof, as at 63. The lower margin 66 of the throat forms, with the tangent of the disc body, a corner or edge which is but slightly in excess of ninety degrees and is therefore comparatively sharp.

Rotation of the roller 41 is effected by turning a knob 71 mounted as by a set screw 72 on the outer end of the shaft 46, the inner or shank end of the knob 71 having

formed therein an elongated cavity (not shown), adapted to receive a spiral torsion spring 73 having one end inserted in an opening 74 in the shaft, the other end of the spring 73 extending toward the adjacent end of the housing and passing transversely across the end of the housing in a pair of registering notches 76, the transverse spring portion 77 being recurved as at 78 around the rear housing wall 17 so as securely to anchor the distal end of the spring.

The spring 73 initially has established therein a torsional stress tending to rotate the shaft 46, and thus the roller 41, in a counter-clockwise direction, when viewed as in Figure 2. The roller is provided with a limit stop mechanism causing the roller to halt with the throat in the vertical attitude shown in Figure 2. The limit stop mechanism includes a rearward extension of the shaft 46, the extension being bent at right angles to the shaft axis to form an arm 81. The arm 81 abuts the transverse pin extension 63. It can therefore be seen that whereas the roller can be rotated by hand in the clockwise direction indicated by the arrow designated 82 through well in excess of ninety degrees of arc, upon releasing the knob 71, the urgency of the torsion spring 73 will rotate the roller in a counter-clockwise direction; but upon abutment of the arm 81 with the pin 63 the roller will assume the normal or base position shown in Figure 2, with the throat in vertical attitude, in ready-for-use condition.

When the user wishes to snuff his or her cigarette it is only necessary that the cigarette be inserted, ember downwardly, into the throat, the pin 62 positioning the cigarette in proper vertical location, as appears most clearly in Figure 5. The user thereupon grasps the knob 71 and rotates it in the clockwise direction 82. A slight angular displacement of the roller brings the lower throat edge 66 into abutment with the adjacent cylindrical wall of the cigarette, as shown in Figure 5.

As rotation is continued, the edge 66 of the roller urges the cigarette into abutment with the spring leaf leg 27 and, more particularly, against the point 91 of the leg 27 formed at the junction of the substantially linear lower portion 92 of the leg 27 and the arcuate upper portion 93 thereof.

As will be observed in Figure 6, the throat edge 66 pinches the cigarette as roller rotation urges the cigarette against the transverse point 91, there being also a slight deflection to the left, of the upper spring portions 93, 32 and 31, as indicated by the slight separation 96 between the limit stop portion 31 and the adjacent housing ears 21.

Continued rotation of the roller effects a somewhat complicated but highly effective motion. Intermediate the position shown in Figures 6 and 7 the throat edge 66 not only pinches the cigarette in the general locality shown in Figure 6 but the edge 66 also urges the cigarette toward the left and upwardly in a generally arcuate path, concurrently pressing the cigarette against the spring point 91 and widening even more the separation between the spring portion 31 and the housing ears 21, the spacing assuming the general proportions indicated by the numeral 97 in Figure 7. Upon the roller edge's 66 having passed upwardly beyond the leaf spring point 91, the lower end of the cigarette between the original pinched portion and the ember portion 61 is progressively pinched,

the roller edge 66 swinging upwardly somewhat faster than the cigarette is itself moved upwardly. It is believed that when the arcuate spring portion 93 is reached, the arcuate portion 93 has a retarding effect on the upward movement of the cigarette. In any event, as the roller edge 66 swings upwardly at a slightly greater velocity than the cigarette, a rolling or pressing or flattening effect occurs, the bottom rounded portion 98 of the roller flattening the ember end of the cigarette and causing it to assume the tapered shape shown in Figure 7. The transversely flattened tip 99 of the cigarette is in close proximity to both the roller portion 98 and the arcuate spring portion 93, each of which portion is constructed of a heat conducting material. Consequently, while a large quantity of burning particles are mechanically squeezed away or separated from the unburned tobacco and paper, the ashes falling below, the remaining embers are quenched by contact with the adjacent relatively cold metallic boundary walls.

By the time the respective elements reach the position shown in Figure 7, the cigarette is totally snuffed. Slight additional knob rotation frees the pinched tip 99 of the cigarette and permits the cigarette by gravity to fall to the right and downwardly into the container 13; or, alternatively permits the user to grasp the projecting cigarette butt, inspect it for any unlikely, but possible remaining embers to be eliminated and to discard the butt into the container.

It therefore can be seen that I have provided a cigarette snuffer which not only makes efficient and multiple use of its component elements, but which also provides an inexpensive and durable device whose operation is interesting to the user.

I claim:

1. A cigarette snuffer comprising a housing, a leaf spring mounted on one end of said housing, a roller rotatably mounted in said housing, said roller having formed therein a throat facing said leaf spring, said throat terminating at its upper end in a beveled edge and at its lower end in a substantially right angled edge, means for urging said roller in one direction of rotation, means for limiting the extent of rotation of said roller in said one direction of rotation, means for positioning a cigarette disposed vertically in said throat at a predetermined location, and means for rotating said roller in the other direction of rotation against the urgency of said roller urging means.

2. The device of claim 1 wherein said rotating means includes a shaft journaled in opposite side walls of said housing, said shaft having said roller mounted thereon, and a rotating knob mounted on one end of said shaft.

3. The device of claim 2 wherein said roller urging means includes a spring spirally wound on said shaft, said spring having one end mounted on said shaft and the other end mounted on said housing, the direction of winding being such as to urge the upper end of said throat in an angular direction toward said leaf spring.

4. The device of claim 3 wherein said roller limiting means includes an extension of said shaft on the side of said housing distant from said knob, said shaft extension being bent at right angles and being abuttable with an extension of said cigarette positioning means.

No references cited.