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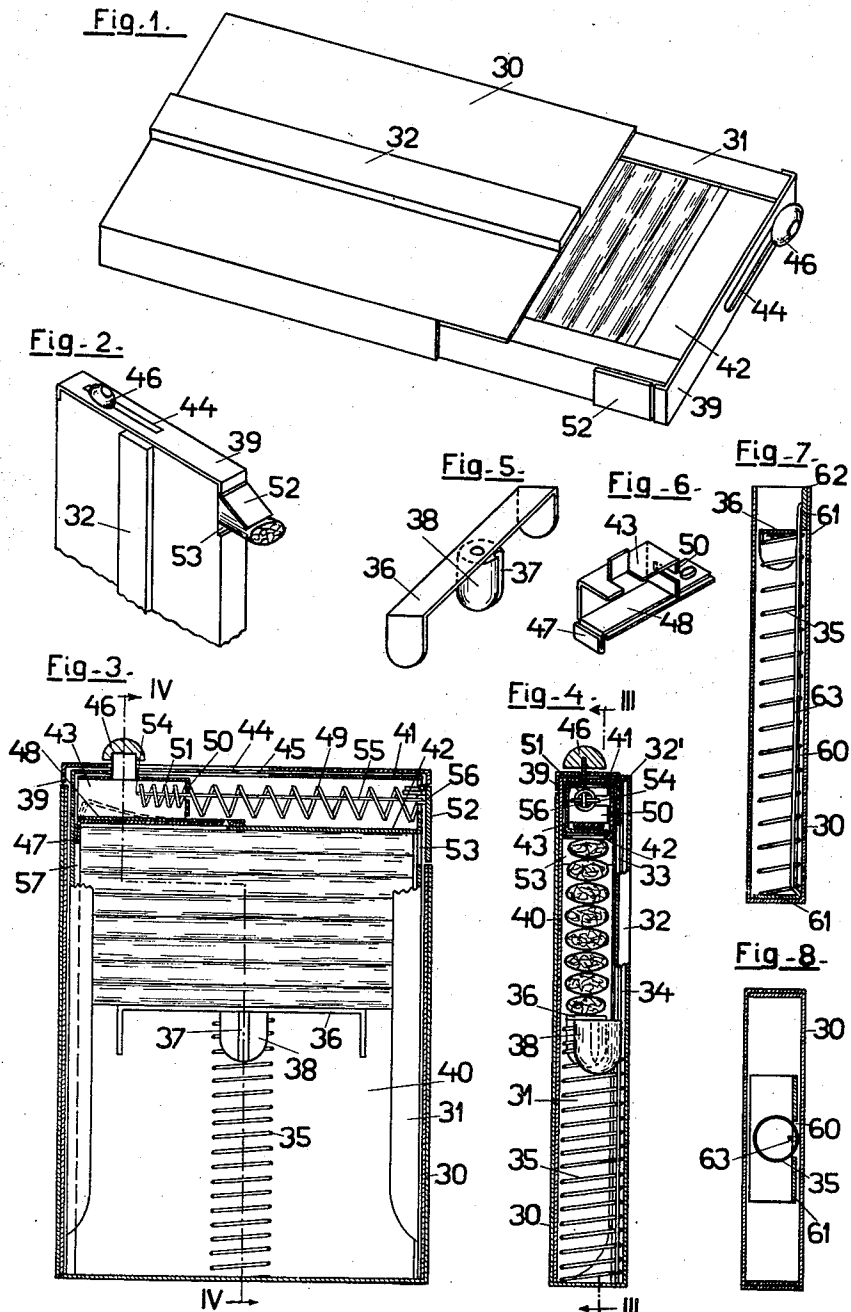
F. MUTZ

2,216,476

DISPENSING CONTAINER

Filed April 12, 1938

2 Sheets-Sheet 1



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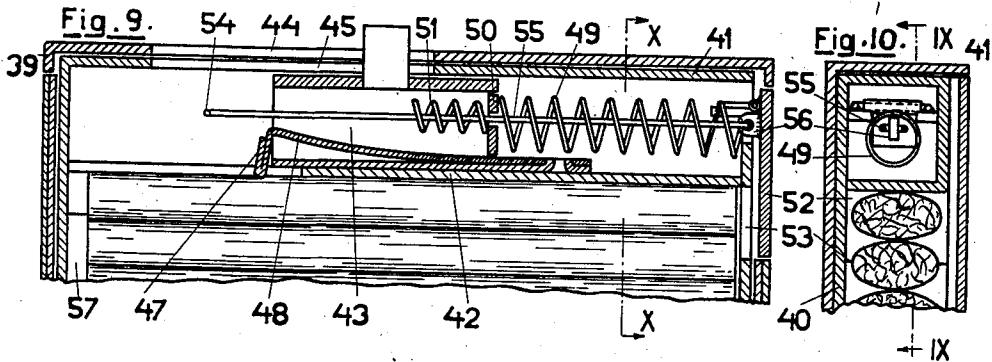
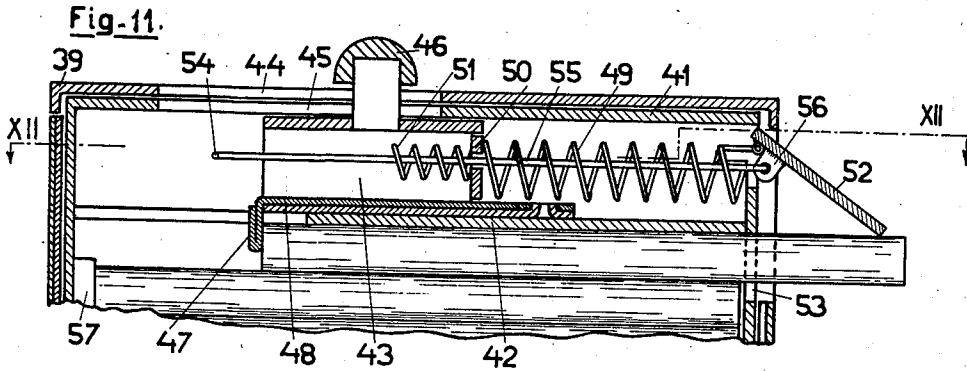
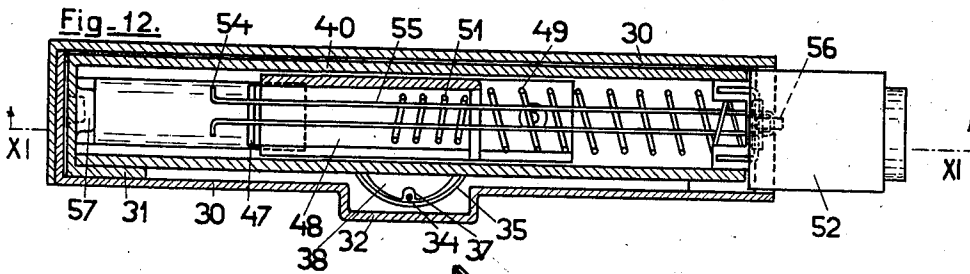
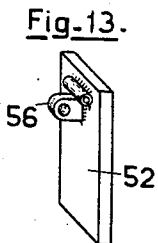
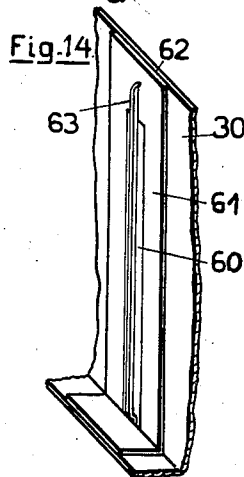
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2,216,476

DISPENSING CONTAINER

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2 Sheets-Sheet 2



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UNITED STATES PATENT OFFICE

2,216,476

DISPENSING CONTAINER

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mesne assignments, of one-half to himself and
one-half to Gustav Markowitsch, Vienna, Ger-
many

Application April 12, 1938, Serial No. 201,485
In Austria May 8, 1937

6 Claims. (Cl. 206—41.2)

This invention relates to containers for ciga-
rettes and similar substantially cylindrical ob-
jects having a dispensing device adapted to pre-
sent or deliver the objects one by one from the
container. The term containers is intended to
cover wrappers or pocket containers in which the
objects are sold and which may be thrown away
after being emptied, as well as refill-boxes of
more permanent construction.

The invention relates more particularly to con-
tainers in which the individual dispensing device
comprises a spring-stressed feeding device adapt-
ed to press a stacked batch of cigarettes or other
articles towards one end wall of the box, where
an ejecting device with a returning spring is pro-
vided.

In accordance with the invention, the coiled
spring provided for the actuation of the feeding
device is guided upon a straight wire extending
along the wall of the container. In the pocket
container this guidance is formed by a T-shaped
piece of wire, with the transverse member of the
T lying against the end-wall of the container op-
posite of the ejecting device and with the stem
or longitudinal member of the T guiding the
spring. In the embodiment of the invention in
which the container serves as a refill-box the
guiding wire is preferably arranged to lie in a
groove in the wall of the box.

The coiled spring serving as feed spring is
made of thin wire and is stiffened in the required
manner by the laterally disposed guiding wire
which it encircles with its coils. This arrange-
ment is characterized by extreme simplicity as
compared with types of construction hitherto
known in the art. Moreover the spring with its
guidance so stiffens the container that there may
be used cheaper sorts of cardboard than are
generally employed for the manufacture of ordi-
nary containers of the same size. In this way the
cost of the dispensing device may be completely
or partly compensated for. By securely arrest-
ing the feeder at the lower end of the container
and thus cancelling the action of the feed spring
filling of the container is facilitated. This ar-
restment is preferably maintained as long as the
container is stored and only released before the
container is opened to take out the first of the
objects packed therein. The cigarettes or the
other objects stowed or packed in the container
may be thus relieved of pressure exerted upon
them by the coiled spring during the time of
storage.

Ejection of the first or uppermost one of the
stacked batch of objects is effected by means of

a sliding element coacting with the inner of two
flaps covering the ejecting or upper end of the
container, which sliding element is of a U-shaped
cross-section so as to embrace this inner flap.
As a returning spring for the sliding element there
is provided an elastic endless band which on the
one hand engages in two notches in the inner flap
and on the other hand is passed around the fin-
ger-piece or other outwardly extending projection
on the sliding element, so that the india rubber
band does not come into contact with the ciga-
rettes or other contents. In the refill-box con-
structed in accordance with the invention a
coiled wire spring is also provided as a returning
spring for the ejector.

In the container the feeder and the ejector
may also each be made from a piece of wire, and
in this way not only may the cost of material
and manufacturing be reduced as compared with
when stamped sheet-metal parts are used, but
also sharp edges are avoided by which the con-
tainer or its contents might be injured. The
fixing of the feeder to the outer cover of the con-
tainer is rendered extremely simple in this case,
since the wire is easily bent to form a hoop which
is made to project out of the container, so that
it may be secured by means of a piece of card-
board or the like passed through it.

In the drawings showing a preferred construc-
tion of a refill-box as well as a modified construc-
tion of the shell:

Fig. 1 is a perspective view of the refill-box
with the drawer-like refill frame partly pulled
out,

Fig. 2 is a perspective view of the closed box
during the delivery of a cigarette,

Figs. 3 and 4 are two longitudinal sections of
the box taken on the lines III—III of Fig. 4, re-
spectively on the lines IV—IV of Fig. 3,

Figs. 5 and 6 are perspective views of the feed-
er and of a part of the ejecting device,

Figs. 7 and 8 are a longitudinal section and a
cross-section, respectively, of a modified form
of the outer shell of the box on a reduced scale,

Fig. 9 is a section taken on the lines IX—IX
of Fig. 10 in enlarged scale of the ejecting device
after the ejecting operation,

Fig. 10 is a section taken on the lines X—X of
Fig. 9,

Fig. 11 is a section taken on the lines XI—XI
of Fig. 12 in enlarged scale of the ejecting device
during the ejecting operation,

Fig. 12 is a section taken on the lines XII—XII
of Fig. 11,

Figs. 13 and 14 are perspective views of two different details.

The refill-box shown in the drawings comprises an outer shell or envelope 30 and a drawer-like frame 31 holding the batch of cigarettes. The shell is of rectangular cross-section with a longitudinal groove 33 in the middle of which the keeper wire 34 is provided. According to Figs. 1, 2, 4 and 12 this groove is formed by a raised rib or ledge 32. The upper end of the wire 34 which may be replaced by a strip of sheet-metal, is in this case fixedly secured by an inwardly bent tongue 32', to which it may also be attached by soldering. The lower end of the wire or strip is soldered to the bottom of the shell. According to Figs. 7, 8 and 14 the groove 33 is formed by a longitudinal slot 60 in a member 61 inserted in the shell and having two walls adjacent to the one main wall and to the bottom of the shell, respectively. The keeper wire 34 or metal strip replacing the same may either be bent around the edges of the inserted element 60, or, if this latter be made of sheet metal, be formed of a strip 63 of material left standing when punching the slot 60, this strip being in integral connection with the element 61 at its lower end. With its upper end the strip 63 is bent out of the plane of the element 61 and stretched until its upper end comes to lie upon the solid material of the element 61 above the slot 60, where it is fixedly secured by applying a touch of solder. A connection between the shell and the element 61 may be provided by soldering these parts together at their upper edges at 52 or by sticking these parts together, according to whether the shell 30 and the element 61 be made of sheet-metal or of non-metallic material. In the latter case it may be preferable for the insert 61 to be made to extend over the entire clear width of the shell 30.

The coiled spring 35 serving as the feed spring is fitted over the wire 34 or the metal strip 63 in order to obtain a reliable guidance of the spring and of the feeder in spite of the small diameter of the wire of which the spring is formed and of the slight tension imparted to the spring to provide for a careful packing of the cigarettes in the box. In the illustrated embodiment the feeder 36 is also guided along the wire 34 or the strip 63 by virtue of the fact that it carries a small block 38 of wood, synthetic resin, or the like material on its side remote from the cigarettes, said block having a longitudinal groove 37 engaging the wire or strip as shown in Figs. 3 and 5.

The refill-frame or drawer 31 is provided with a cap 39 on its end which while forming a projecting abutment, is flush with the walls of the shell 30 when the drawer 31 is pushed into the latter. The main wall 40 and the bottom of the drawer are closed to form a prismatic hollow space by means of the angular piece 42 of sheet-metal secured, for instance by soldering, to the body of the drawer. Within this hollow space the plunger 43 is slidably arranged, consisting of an essentially U-shaped sheet metal body with a finger-piece 46 projecting outwards through the slots 44, 45 in the bottom of the drawer and its cap 39, and with an inwardly projecting ejecting tongue 47. This tongue is not bent away immediately from the sheet metal body 43 but from a plate spring 48 connected thereto against the action of which the tongue may be brought into the position indicated in Fig. 9 and in dotted lines in Fig. 3, in which the tongue remains within the outlines of the piston 43.

This position is assumed by the tongue 47 under

the influence of the pressure exerted by the feeding spring through the intermediary of the batch of cigarettes upon the tongue during the return movement of the ejector after the dispensing of a cigarette. Only after the plunger has returned to its position of rest the tongue is enabled to snap back to its position indicated in Fig. 11 and in full lines in Fig. 3 behind the next cigarette. The ejecting tongue is thus prevented from damaging the next cigarette of the batch during the return movement of the ejector and from having this movement jammed by the cigarettes. A rib 57 arranged in the plane of the tongue 47 when in its position of rest provides for the space necessary to enable the ejecting tongue to snap behind the next cigarette of the batch.

Besides the return spring 49 kept tensioned between the side wall of the drawer 31 and the front wall 50 of the ejecting plunger the ejecting device is also provided with a second, weaker, spring 51 serving a similar purpose to the elastic band 27 in Fig. 7 namely for the elastic closure of a flap 52 covering the delivery aperture 53. This spring 51 is kept tensioned between the inner side of the front wall 50 of the plunger 43 and the rectangularly bent ends 54 of a hair-pin bent wire 55 the top of which is inserted in an eyelet 56 provided upon the flap 52 hingedly connected to the drawer 31 as shown also in Fig. 13. When the ejector is moved towards the outlet aperture the tension of the spring 51 is relieved, the delivered cigarette being thus enabled to raise the flap 52 (as in the case of the packet) without encountering any resistance which might otherwise cause the cigarette to be crushed or deformed as shown in Fig. 11.

Attention is drawn to the fact that the feeder checks the movement of the ejecting tongue after the delivery of the last cigarette, so that the user is at once warned of the box being empty.

I claim:

1. A container for substantially cylindrical objects of the one-by-one dispensing type, comprising a shell, said shell comprising side walls and end walls, a drawer-like frame adapted to be filled with a batch of said objects and to be inserted into said shell, apertures in one of the end walls of said shell and said frame adjacent to the ends of said objects, said apertures being in alignment when said frame is inserted into said shells, hand actuated ejecting means provided in said frame and adapted to eject said objects one by one through said apertures, a feed plate supporting said objects and slidably arranged in said shell, a coiled spring provided within said shell and acting upon said feed plate, and a straight line guide member of small cross section arranged in said shell at right angles to the axes of said objects in the middle of the length of said objects between said objects and one of the side walls of said shell, disposed parallel to a plane defined by the axes of said objects, a groove provided in said side wall and adapted to accommodate said guide member, the coils of said spring encircling said guide member.

2. A container for substantially cylindrical objects of the one-by-one dispensing type, comprising a shell, said shell comprising side walls and end walls, a drawer-like frame adapted to be filled with a batch of said objects and to be inserted into said shell, apertures in one of the end walls of said shell and said frame adjacent to the ends of said objects, said apertures being in alignment when said frame is inserted into said shells, hand actuated ejecting means provided in

said frame and adapted to eject said objects one by one through said apertures, a feed plate supporting said objects and slidably arranged in said shell, a coiled spring provided within said shell and acting upon said feed plate, a straight line guide member of small cross section arranged in said shell at right angles to the axes of said objects in the middle of the length of said objects between said objects and one of the side walls of said shell, disposed parallel to a plane defined by the axes of said objects, a sheet member being fixedly secured inside said shell upon said side wall, a slot extending at right angles to the axes of said objects and provided in said sheet member, said guide member being accommodated in said slot, the coils of said spring encircling said guide member.

3. A container for substantially cylindrical objects of the one-by-one dispensing type, comprising a shell, said shell comprising side walls and end walls, a drawer-like frame adapted to be filled with a batch of said objects and to be inserted into said shell, apertures in one of the end walls of said shell and said frame adjacent to the ends of said objects, said apertures being in alignment when said frame is inserted into said shells, hand actuated ejecting means provided in said frame and adapted to eject said objects one by one through said apertures, a feed plate supporting said objects and slidably arranged in said shell, a coiled spring provided within said shell and acting upon said feed plate, a sheet member being fixedly secured inside said shell upon one of the side walls of said shell, a slot extending at right angles to the axes of said objects in the middle of the length of said objects, a strip of material left standing in the middle of said slot, said strip serving as a guide member, the coils of said spring encircling said guide member.

4. A container for substantially cylindrical objects of the one-by-one dispensing type, comprising a shell, said shell comprising side walls and end walls, a drawer-like frame adapted to be filled with a batch of said objects and to be inserted into said shell, apertures in one of the end walls of said shell and said frame adjacent to the ends of said objects, said apertures being in alignment when said frame is inserted into said shells, hand actuated ejecting means provided in said frame and adapted to eject said objects one by one through said apertures, a feed plate supporting said objects and slidably arranged in said shell, a grooved member being fixedly secured to said feed plate, a coiled spring provided within said shell and acting upon said feed plate, and a straight line guide member of small cross section arranged in said shell at right angles to the axes of said objects in the middle of the length of said objects between said objects and one of the side walls of said shell, disposed parallel to a plane defined by the axes of said objects, said grooved member being arranged to engage with, and to be guided by said guide mem-

ber, the coils of said spring encircling said guide member.

5. A container for substantially cylindrical objects of the one-by-one dispensing type, comprising a shell, said shell comprising side walls and end walls, a drawer-like frame adapted to be filled with a batch of said objects and to be inserted into said shell, apertures in one of the end walls of said shell and said frame adjacent to the ends of said objects, said apertures being in alignment when said frame is inserted into said shells, hand actuated ejecting means provided in said frame and adapted to eject said objects one by one through said apertures, a flap being hingedly connected to said shell so as to cover said apertures, elastic means being interposed between said flap and said hand operated ejecting means, said elastic means holding said flap in its covering position and having their tension diminished on the approaching of said ejecting means to said apertures, a feed plate supporting said objects and slidably arranged in said shell, a coiled spring provided within said shell and acting upon said feed plate, and a straight line guide member of small cross section arranged in said shell at right angles to the axes of said objects in the middle of the length of said objects between said objects and one of the side walls of said shell, disposed parallel to a plane defined by the axes of said objects, the coils of said spring encircling said guide member.

6. A container for substantially cylindrical objects of the one-by-one dispensing type, comprising a shell, said shell comprising side walls and end walls, a drawer-like frame adapted to be filled with a batch of said objects and to be inserted into said shell, apertures in one of the end walls of said shell and said frame adjacent to the ends of said objects, said apertures being in alignment when said frame is inserted into said shells, hand actuated ejecting means provided in said frame and adapted to eject said objects one by one through said apertures, said ejecting means comprising a plunger, a return spring interposed between said plunger and said frame, a lug on, and projecting from said plunger, adapted to push said objects through said apertures, and elastic means provided between said plunger and said lug so as to allow said lug to be pressed from its projecting position substantially within the outlines of said plunger, a feed plate supporting said objects and slidably arranged in said shell, a coiled spring provided within said shell and acting upon said feed plate, and a straight line guide member of small cross section arranged in said shell at right angles to the axes of said objects in the middle of the length of said objects between said objects and one of the side walls of said shell, disposed parallel to a plane defined by the axes of said objects, the coils of said spring encircling said guide member.

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