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PELLET DISPENSER

Original Filed Oct. 14, 1963

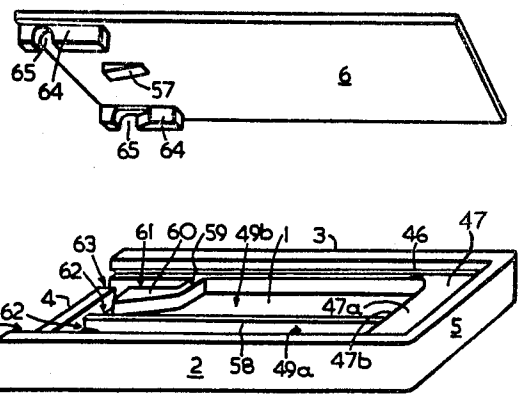


FIG. 1

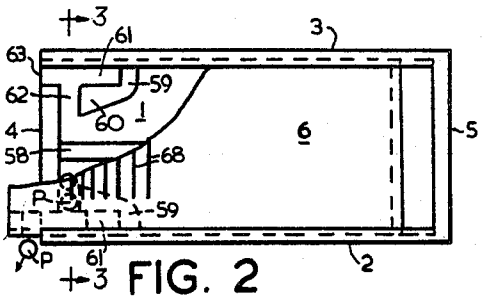


FIG. 2

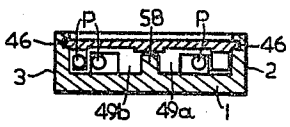


FIG. 3

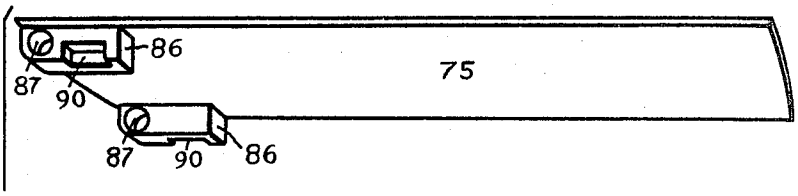
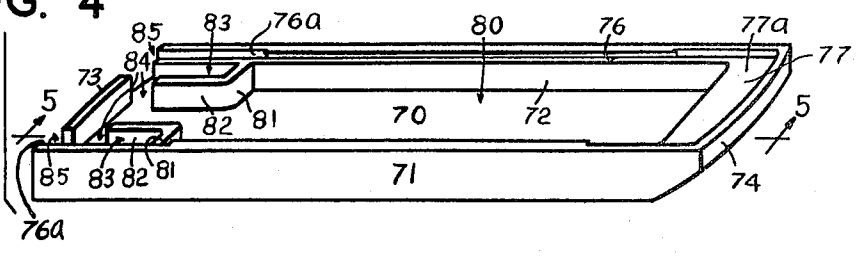


FIG. 4



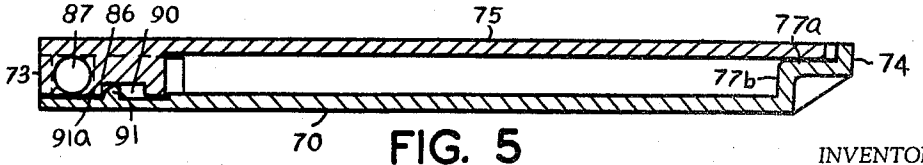


FIG. 5

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PELLET DISPENSER

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5 Claims. (Cl. 221—93)

This is a division of application Serial No. 315,927, filed October 14, 1963.

This invention has been devised to provide a pellet dispenser which will hold a number of pellets of uniform shape and size and which by a simple manipulation will dispense one pellet each time it is manipulated. The dispenser can be made to be carried in a pocket or handbag.

The dispenser comprises a rectangular case and a lid slidable in the case. The lid has stop means thereon limiting sliding movement of the lid in the case. The case has ducts therein which are adapted to hold a number of pellets in a single row. The case also has dispensing outlets therein. At one end the ducts are provided with inlets in communication with a pellet storing chamber defined by the case and the other ends are provided with outlets. Gates on the lid have pellet chambers therein and the lid is movable to move these chambers from an "in register" position relative to said ducts to a dispensing position in register with said outlets and simultaneously to occlude said ducts.

The invention will now be described with reference to the annexed drawings, wherein:

FIG. 1 is an exploded perspective view showing one embodiment of the pellet dispenser;

FIG. 2 is a plan view of the assembled dispenser of FIG. 1 with part of the lid broken away;

FIG. 3 is a sectional view taken on the plane 3—3 of FIG. 2;

FIG. 4 is an exploded perspective view showing an alternative embodiment of the pellet dispenser; and,

FIG. 5 is a sectional view of the assembled dispenser of FIG. 4 taken on the plane 5—5 of FIG. 4.

Referring now specifically to the embodiment of the dispenser shown in FIGS. 1–3, the case therein is rectangular and consists of a floor **1**, side walls **2**, **3**, end walls **4**, **5** and a lid **6** which is slidable in the case. For the latter purpose, the case has slide grooves **46** formed in the side walls **2**, **3** adjacent the top thereof and the lid **6** is shaped at its edges to slide in these grooves. The end wall **4** is lower than the end wall **5** to permit the lid to slide.

In the embodiment of the invention illustrated in FIGS. 1–3, the end wall **5** has a shoulder **47** with faces **47***a*–**47***b* formed thereon within the case. The face **47***a* forms a floor on which the lid slides and the face **47***b* forms one wall of a pellet storing chamber **49** defined by the case. As can be seen from FIG. 1, the chamber **49** is divided into isolated compartments **49***a* and **49***b* by a dividing partition **58**.

The side walls **2** and **3** each have an outlet slide channel forming member integral therewith adjacent the end wall **4**. These members each consist of a limb **59** projecting from the side walls into the case and an integral limb **60** which projects towards the end wall **4**. One face of each limb **60** forms, with the side wall adjacent thereto, a slide channel **61** and another face of each limb forms, with the end wall **4** and the lid **6**, ducts **62**. The latter ducts are each in communication at one end (inlet) with the compartments **49***a*–**49***b* of the body of the case.

The limbs **60** are broadened at their ends which form the ducts **62** whereby each of the ducts **62** can accommodate a plurality of pellets P in a single row. The slide channel structure is completed by slotted openings **63** formed at each end of the wall **4** in alignment with the slide channels **61**.

The lid **6** has formed on each side thereof a downwardly projecting gate **64** having a pellet receiving chamber **65** intermediate the ends thereof. The gates **64** are located and dimensioned to slide in the slide channels **61** and openings **63**. When the lid is in the assembled condition illustrated in FIGS. 2 and 3, the gates **64** are movable between a receiving position wherein the pellet chambers **65** are in registry with the outlet ends of the ducts **62** and a dispensing position wherein the chambers **65** are disposed to the exterior of the case. The latter condition is illustrated in FIG. 2. Movement of the gates **64** is accomplished simply by sliding the lid **6** back and forth in the grooves **46**. This movement is limited at the pellet receiving position by abutment of the lid **6** within the end wall **5** and in the dispensing position by abutment of a stop **57** formed on the lower surface of the lid with the end wall **4**.

Assembly of the lid **6** into the operative condition illustrated in FIGS. 2 and 3 is accomplished simply by sliding the lid over the lower end wall **4** and into the grooves **46**. Passage of the stop **57** over the end wall is facilitated by the inclined surface shown on the stop in FIG. 1 and the resiliency of the material from which the end wall **4** and lid **6** is fabricated. It is noted that this assembly requires that the stop be forced over the end wall and that once assembly is accomplished, the upright end surface of the stop **57** is opposed to the wall **4** to prevent inadvertent removal of the lid.

In operation, once the dispenser is assembled into the condition shown in FIG. 2, with pellets confined in the compartments **49***a* and **49***b*, it is merely necessary to slide the lid **6** back and forth within the limits defined by the end wall **5** and stop **57** to dispense pellets in one at a time fashion. During this operation, the compartment **49***a* or **49***b* from which the pellets are dispensed, is controlled by orientation of the dispenser by the user. Specifically, if it is desired to dispense pellets only from the compartment **49***a*, the dispenser is held at the position shown in FIG. 2 so that gravity will assist the movement of pellets from the compartment **49***a* into and through the duct **62** in communication therewith. Similarly, if it is desired to dispense pellets from the compartment **49***b*, it is simply necessary for the user to invert the dispenser from the position shown in FIG. 2 so that gravity will assist the movement of pellets from the compartment **49***b* into the duct **62** in communication therewith. To assure that pellets enter the ducts **62**, it is also desirable to occasionally tip the dispenser to a position where the pellets will feed to the ends of the dispenser containing the ducts under the force of gravity.

During the dispensing operation, the shoulder **47** functions to occlude the pellet confining compartments **49***a* and **49***b*, even when the lid is slid to the extended position where the stop **57** abuts the end wall **4**. Thus, pellets cannot inadvertently pass the edge portions of the lid. In the dispensing operation, the gates **64** also perform an occluding function to prevent the inadvertent passage of pellets into the slide channels **61**. Specifically, as can be seen from the lower portion of FIG. 2, when the chambers **65** are in the dispensing position, the portions of the gates **64** to the right thereof function to close the outlets of the ducts **62**. The latter characteristic has the advantage that it prevents pellets from jamming the gates **64** during the dispensing operation.

The construction of the dispenser shown in FIGS. 1–3 is completed by finger gripping serrations **68** formed on the upper surface of the lid **6**. Although these serrations

may be omitted without materially departing from the invention, it is believed apparent that they enhance the ease of operation of the dispenser.

It is noted that the form of the dispenser illustrated in FIGS. 1–3 has the advantage that it provides for the storage and selective dispensing of two different types of pellets. Specifically, one type of pellet may be confined in and dispensed from the compartment 49*a*, while another type of pellet may be confined in and dispensed from the compartment 49*b*. Although the operation of the dispenser has been described with reference to the alternative dispensing of pellets, designated at P, from either one of the compartments 49*a* and 49*b*, it is to be understood that pellets might also be dispensed simultaneously from both compartments by tipping the dispenser to an upright orientation wherein the end wall 4 is disposed at the lower extremity thereof.

Referring now to FIGS. 4 and 5, the embodiment of the dispenser illustrated therein differs from that described with reference to FIGS. 1–3 primarily in that no dividing partition is provided in the pellet storage chamber and that the stop structure for the lid is considerably modified. The embodiment of the dispenser shown in FIGS. 4 and 5 includes a rectangular case defined by floor **70**, side walls **71** and **72**, end walls **73** and **74**, and a lid **75** slidable on said end and side walls. For the latter purpose, the case has slide grooves **76** formed in the side walls **71** and **72** adjacent the top thereof and the lid **75** is shaped at its edges to slide in these grooves. The end wall **73** is lower than the end wall **74** to permit the lid to slide.

In the embodiment of the invention illustrated in FIGS. 4 and 5, the end wall **74** has a shoulder **77** with faces **77***a* and **77***b* formed thereon within the case. The face **77***a* forms a floor on which the lid **75** slides and the face **77***b* forms one wall of a pellet storing chamber **80** defined by the case.

The side walls **71** and **72** each have an outlet slide channel forming member integral therewith adjacent the end wall **73**. These members each consist of a limb **81** projecting from the side walls into the case and an integral limb **82** which projects towards the end wall **73**. One face of each limb **82** forms, with the side wall adjacent thereto, a slide channel **83** and another face of each limb forms, with the end wall **73** and the lid **75**, a duct **84**. These ducts, as can be seen from FIG. 4, include an inlet end in communication with the chamber **80** and an outlet end in communication with the slide channel **83** adjacent thereto. The slide channel structure is completed by slotted openings **85** formed at each end of the wall **73** in alignment with the slide channel **83**.

The lid **75** has a downwardly projecting gate **86** on each side at one end thereof. The gates **86** are provided with pellet receiving chambers **87** extending through one end thereof and stop slots **90** formed in the other end thereof. The stop slots **90**, as will become more apparent subsequently, cooperate with stops **91** formed on the floor **70** to limit slidable movement of the lid **75**. To facilitate slidable movement of the lid **75**, the gates **86** are located and dimensioned to slide in the slide channels **83** and openings **85**.

When the lid **75** is in the assembled condition illustrated in FIG. 5, the pellet chambers **87** in the gates **86** are movable between a receiving position in register with the outlet ends of the ducts **84** and a dispensing position disposed to the exterior of the case. In these positions, the gates **86** are at the opposite limits of their slidable movement within the slide channel **83**. These limits are provided by abutment of the stops **91** with the ends of the stop slots **90**.

Assembly of the lid **75** into the operative condition illustrated in FIG. 5 is accomplished simply by sliding the lid over the end wall **73** and into the grooves **76**. Passage of the gates **86** over the stops **91** is facilitated by arcuate surfaces **91***a* formed on the stops **91** and by the resiliency of the material from which the floor **70**, lid **75**, gates **86**, and stops **91** are fabricated. To facilitate the resilient deflection of the lid **75** during this assembly operation, the upper walls of the slide grooves **76** are cut away, as shown at **76***a*, at the ends of the slot adjacent the slide channel **83**. It is noted that the assembly of the lid into the operative condition requires that the gates **86** be forced over the stops **91** and that once assembly is accomplished, the upright surfaces of the stops **91** are opposed to the inner ends of the stop slots **90** to prevent inadvertent removal of the lid.

In operetion, once the dispenser is assembled into the condition illustrated in FIG. 5, with pellets confined therein, it is merely necessary to slide the lid **75** back and forth, within the limits defined by the stop slots **90**, to effect the dispensing of pellets in one at a time fashion. During this operation, the dispenser is preferably held in positions corresponding to those described with reference to the operation of the FIGS. 1–3 embodiment of the invention. Thus, by selectively orientating the dispenser, pellets may be dispensed from either one or both of the chambers **87**.

During the dispensing operation, the shoulder **77** functions to occlude the pellet storage chamber **80**, even when the lid **75** is slid to the extended dispensing position. Thus, pellets cannot inadvertently pass by the edge portions of the lid. In the dispensing operation, the gates **86** also perform an occluding function to prevent the inadvertent passage of pellets into the slide channels **83**. Specifically, when the chambers **87** are in the dispensing position, the portions of the gates **86** to the right thereof function to close the outlets of the ducts **84**. The latter characteristic has the advantage that it prevents pellets from jamming the gates during the dispensing operation.

It is to be understood that the invention is not intended to be limited to the specific details of the embodiments herein described, but rather is defined by the following claims.

What is claimed is:

1. A pellet dispenser for holding and dispensing pellets of uniform shape and size, said dispenser comprising:

(a) a rectangular case having a floor with peripheral side and end walls fixed thereto and extending upwardly therefrom, one of said end walls having a first slot formed therethrough adjacent one of said side walls and a second slot formed therethrough adjacent the other of said side walls;

(b) first and second partition members joined to said side walls adjacent the respective first and second slots in said one end wall, said partition members each comprising:

(1) a first limb extending inwardly from the side wall joined thereto in spaced substantially parallel relationship to said one end wall; and,

(2) a second limb extending from said first limb towards said one end wall in spaced substantially parallel relationship to the side wall joined thereto to define with said side wall, said first limb and the floor a slide channel aligned with and of substantially the same width as the slot adjacent thereto, said second limb terminating short of said one end wall to define therewith a duct extending into said slide channel of sufficient width to permit the passage of pellets therethrough in single file relationship;

(c) a lid slidable on said side and end walls and said partitions to define therewith and with said floor a pellet storing chamber;

(d) first and second gates fixed to said lid and extending downwardly therefrom slidably into the respective slide channels defined by said first and second partition members, said gates each having therein a pellet receiving chamber;

(e) stop means cooperating between said lid and case to limit sliding movement of said lid; and wherein:

(1) said lid is movable to move the pellet receiving chamber in each of said gates from a normal position aligned and in communication with the duct in the slide channel therefor to and through the slot aligned with said slide channel to an exposed position to the exterior of the case; and,

(2) each of said gates in the latter position functions to close the duct in the slide channel therefor.

2. A pellet dispenser according to claim 1, including:

(a) channels formed in said side walls to slidably receive said lid;

(b) a shoulder formed on the other of said end walls and projecting therefrom beneath and in slidable engagement with said lid; and wherein:

(1) said lid is slidably recieved over said one end wall; and,

(2) said lid, within the limits of slidable movement thereof, is continuously disposed over both said one end wall and said shoulder.

3. A pellet dispenser according to claim 2 wherein said stop means comprises:

(a) a downwardly projecting member fixed to said lid and abuttable with said one end wall; and,

(b) an upstanding portion on said other end wall abuttable with said lid.

4. A pellet dispenser according to claim 2 wherein said stop means comprises:

(a) a projection fixed to and extending upwardly from said floor within at least one of said slide channels; and,

(b) a slot formed in at least one of said gates, said slot having end portions abuttable with said projection to limit movement of said lid.

5. A pellet dispenser according to claim 2, including a longitudinal partition fixed relative to said floor and extending centrally thereof between said end walls to divide the pellet storing chamber into two isolated compartments.

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