Oct. 18, 1949. C. E. NEWTON 2,485,062

DISPENSING APPARATUS

Filed Aug. 16, 1948 4 Sheets-Sheet 1

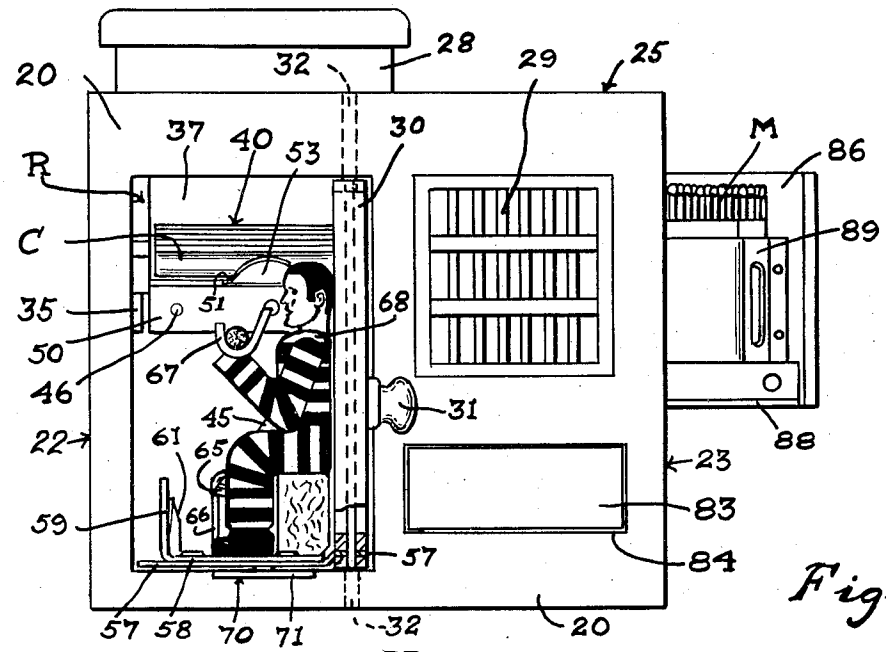



Fig. 1

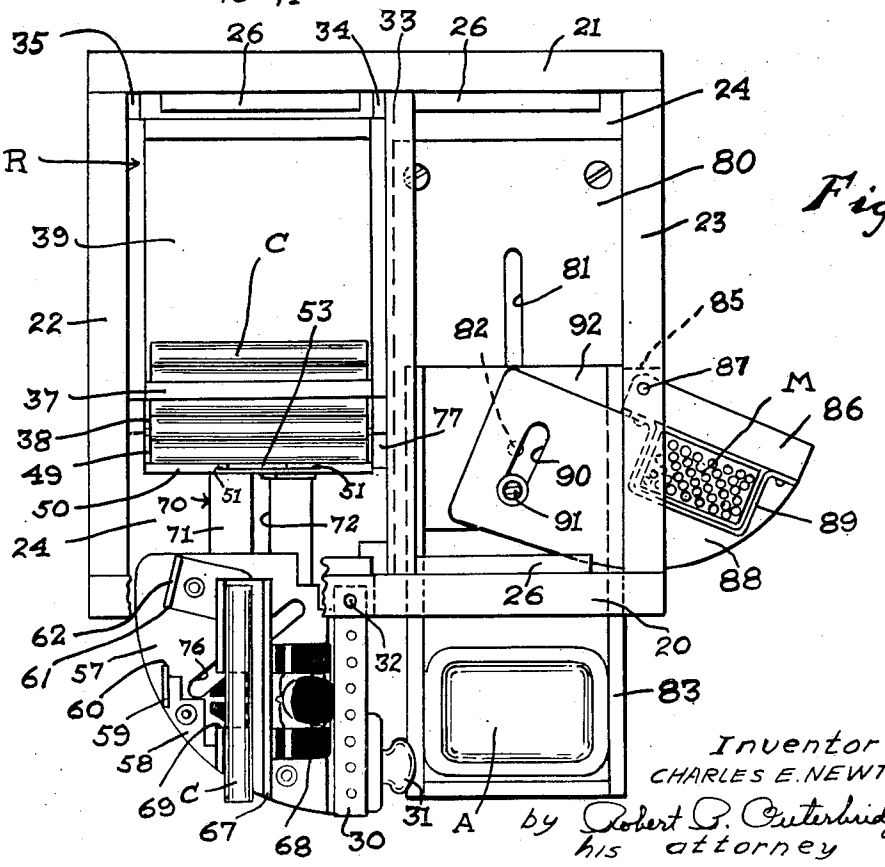



Fig 2.

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DISPENSING APPARATUS

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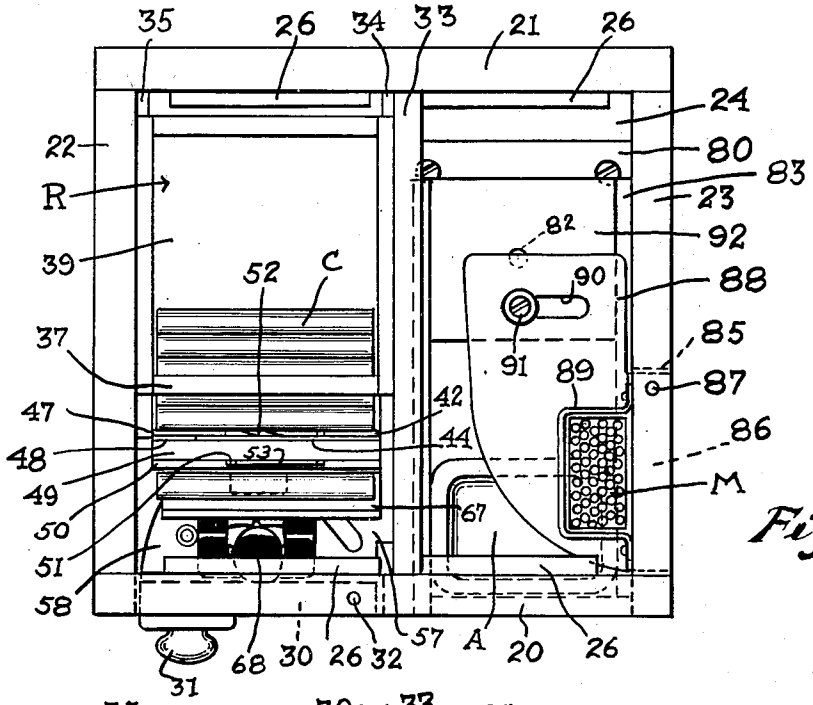



Fig. 3

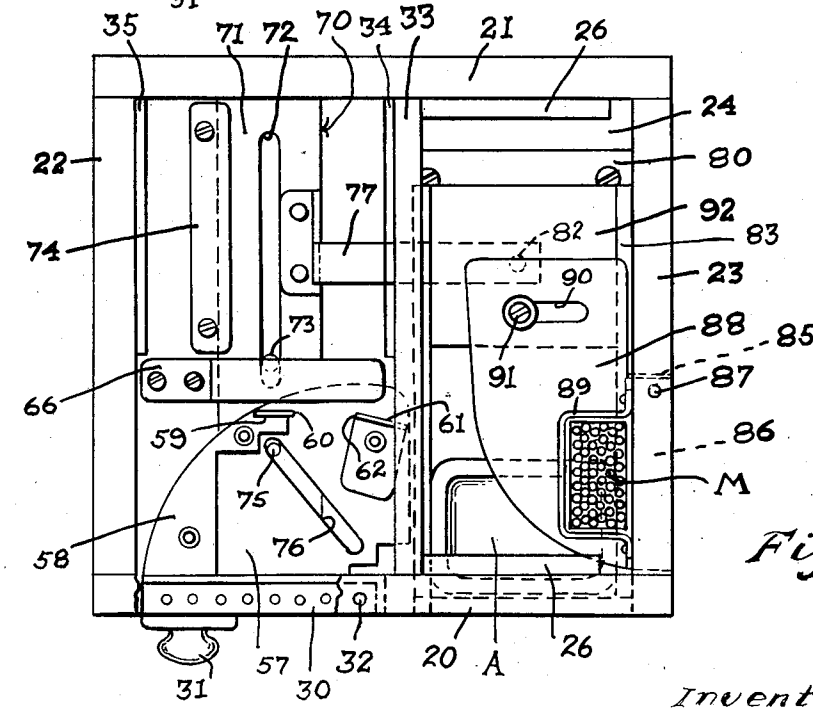



Fig. 4

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DISPENSING APPARATUS

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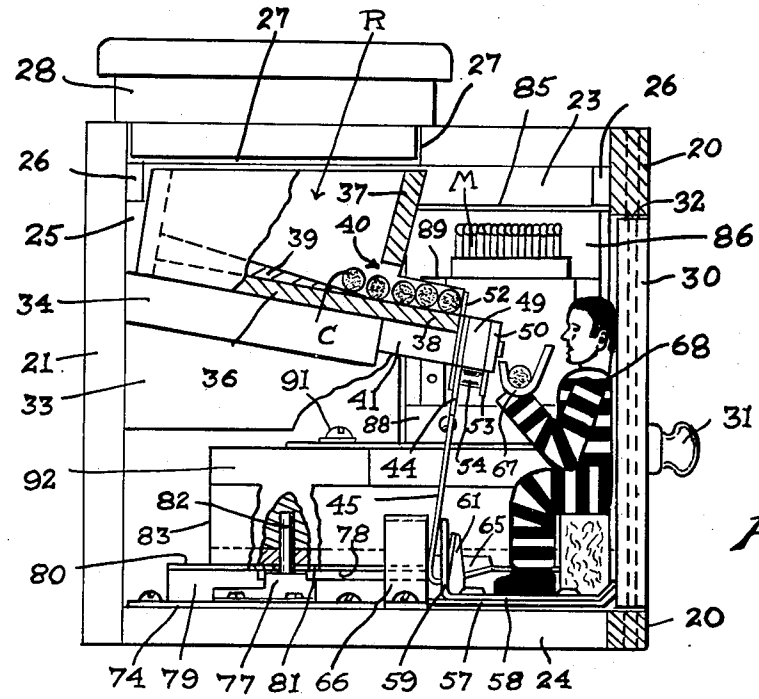



Fig. 5

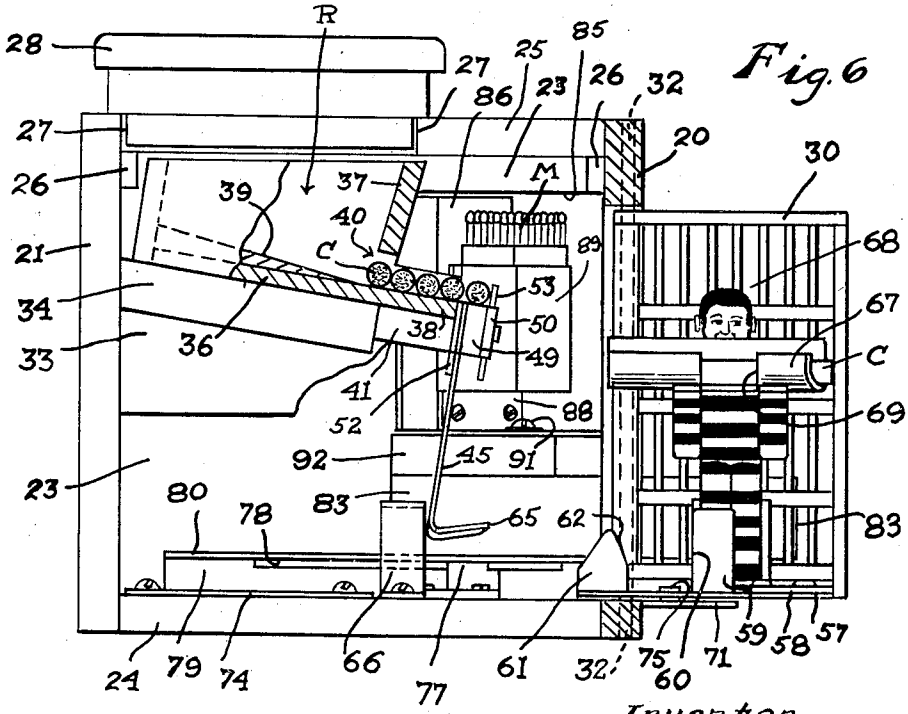



Fig. 6

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DISPENSING APPARATUS

Filed Aug. 16, 1948 4 Sheets-Sheet 4

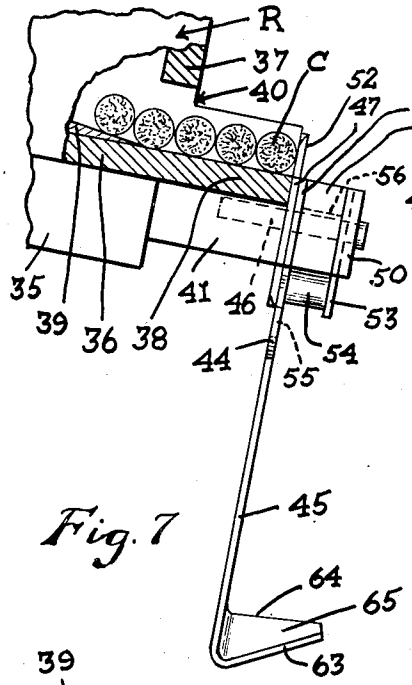



Fig. 7

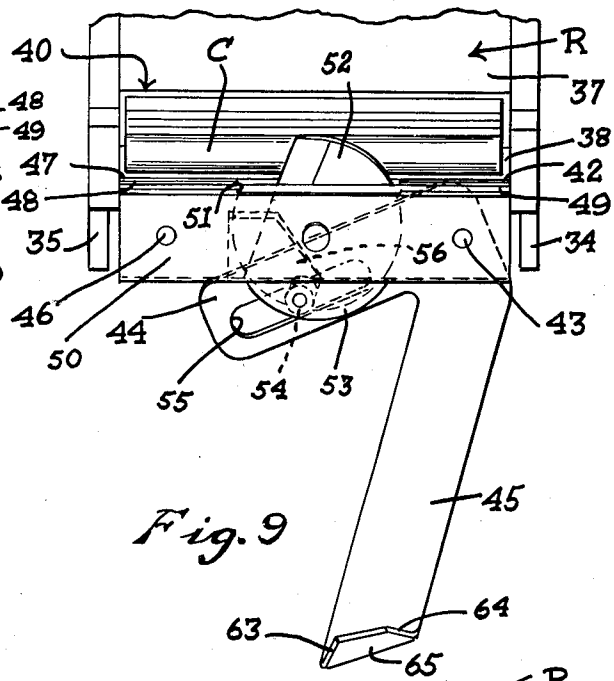



Fig. 9

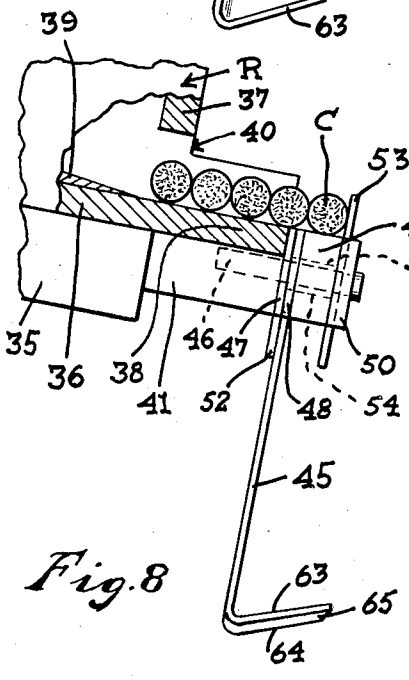



Fig. 8

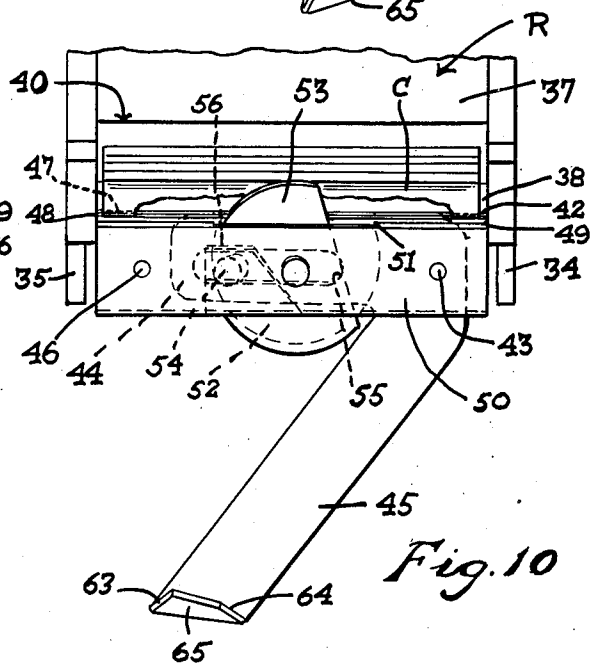



Fig. 10

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2,485,062

# UNITED STATES PATENT OFFICE

2,485,062

## DISPENSING APPARATUS

Charles E. Newton, Charlestown, Mass.

Application August 16, 1948, Serial No. 44,513

11 Claims. (Cl. 312—83)

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The present invention relates generally to dispensing apparatus and more particularly to apparatus of the releaser type, as compared to the ejector and picker types, by which cylindrical articles are released one at a time to a movable receiver for presentation to a user.

The principal object of the present invention is to provide a dispensing apparatus of the type set forth above having a novel construction characterized by a chamber within which the cylindrical articles are releasably contained and by a door upon each cycle of movement of which the articles are released one at a time under the influence of gravity and are presented individually at a point outside the chamber.

A further object of the present invention is to provide a dispensing apparatus which, in addition to presenting cylindrical articles individually to a user upon the opening of a door, simultaneously presents other articles which may be used with the principal article.

To the accomplishment of these objects and of others which will hereinafter appear, the various features of the present invention reside in certain constructions, combinations, and arrangements of parts all fully set forth in this specification and pointed out in the appended claims the structural combinations of which possess advantages readily apparent to those skilled in the art.

The various features of the present invention will be readily understood by reading this specification in the light of the accompanying drawings which illustrate the best form of the invention at present known to the inventor and in which:

Fig. 1 is a view in front elevation, partially in section, the door and the match panel being shown open;

Fig. 2 is a view in plan, the door and the match panel being shown open, and the roof and a portion of the front wall being removed to show underlying parts;

Fig. 3 is a view corresponding to Fig. 2 but with the door and the match panel being shown closed;

Fig. 4 is a view similar to Fig. 3 but with the partition, the cigarette receptacle, and the cigarette receiver also removed to show underlying parts;

Fig. 5 is a view in left side elevation with most of the left wall of the chamber and with part of the cigarette receptacle removed to show underlying parts, the door and the match panel being shown closed;

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Fig. 6 is a view corresponding to Fig. 5 but with the door and the match panel being shown open;

Fig. 7 is a detail view in left side elevation, enlarged and partially in section, showing the forward part of the cigarette receptacle and the escapement mechanism in the position it assumes when the door is closed;

Fig. 8 is a detail view corresponding to Fig. 7 but showing the escapement mechanism in the position it assumes when the door is open;

Fig. 9 is an enlarged detail view in front elevation of the parts shown in Fig. 7; and

Fig. 10 is an enlarged detail view in front elevation of the parts shown in Fig. 8.

Merely for purposes of illustration and explanation and not by way of any limitation as to scope, the present invention is herein illustrated as embodied in an apparatus adapted for dispensing individual cigarettes, but it will be apparent that with dimensional changes other embodiments may be provided to dispense round cigars, toothpicks, pencils, and other cylindrical, i. e., rollable, articles.

With reference to the drawings (Figs. 1–6), the apparatus is provided with a chamber which in appearance may simulate a building, if desired, and is illustrated as resembling a prison cell having a front wall **20**, a rear wall **21**, a left wall **22**, a right wall **23**, a floor **24**, and a roof **25**. The roof rests on cleats **26** of like construction secured to the front and rear walls, and is provided with a rectangular cutout portion **27** (Figs. 5 and 6) at its left rear corner area for a purpose to be described. The opening in the roof **25** formed by the cutout **27** receives the lower portion of a movable cover **28** the exposed portions of which may have any desired architectural appearance. In keeping with the prison cell idea the front wall **20** is provided with a grated window **29** (Fig. 1) and with a swingable grated door **30** the lock-simulating portion of which has a handle illustrated as in the form of a knob **31** to facilitate opening and closing door movements. The pivot for the door **30** may consist of a rod **32** which extends vertically throughout the length of the right hand side of the door (viewing Fig. 3) and has its opposite ends received in the portions of the front wall **20** representing the upper and lower portions of a door frame, as indicated in Fig. 1. The chamber structure is also provided with a vertical partition **33** extending between the front and rear walls and terminating downwardly substantially intermediate the roof **25** and the floor **24**.

With reference to Figs. 2–3 and 5–6 in particular, the chamber is provided underneath the roof cutout 27 with a cigarette receptacle which is indicated generally by the reference letter R and which is supported on one side by a cleat 34 secured to the partition 33 and on the other side by a like cleat 35 secured to the left wall 22. The receptacle R is located generally opposite the frame of the door 30, has a stationary bottom 36 which slopes downwardly and forwardly toward the door 30, and the receptacle width between the side walls thereof is slightly greater than the length of a cigarette C. These side walls terminate forwardly at a point short of the front of the receptacle bottom 36 and at that point support a downwardly extending front receptacle wall 37 the lower edge of which is spaced from the receptacle bottom 36 a distance that is greater than the diameter of a cigarette but materially less than twice that diameter. The stationary bottom 36 extends forwardly of the receptacle wall 37 to form a shelf 38, and if desired a wedge-shaped member 39 may rest on or be formed integral with the receptacle bottom 36 to the rear of the wall 37 to increase the general slope toward the throat 40 afforded by the spacing of the receptacle wall 37 from the bottom 36.

By reason of the downward and forward slope of the wedge-shaped member 39 and of the receptacle bottom 36 and its shelf 38, it will be apparent that a cigarette C located on the member 39 after being placed in juxtaposition there with others by way of the roof cutout 27 would, unless prevented, roll under the influence of gravity downwardly and forwardly through the throat 40 and to the shelf 38, and that by the same token a cigarette C on the shelf 38 would, unless prevented, roll under the influence of gravity off the front edge of the shelf 38.

To prevent this latter occurrence except when desired, and to insure that only one cigarette C at a time leaves the front edge of the shelf 38 even though a plurality, as shown, may be located on the shelf 38 and the wedge-shaped member 39 at any given time, the present invention contemplates the provision of a cyclically operable escapement mechanism, controlled by the opening and closing movements of the door 30, for releasing the juxtaposed cigarettes individually from the shelf 38, i. e., a single cigarette C at each cycle of operation.

To this end the front of the shelf 38 is provided underneath with a cleat 41 to give increased thickness of material, and suitably secured to the right hand side (Figs. 9 and 10) of the front wall formed by the shelf 38 and the cleat 41 front surfaces is a spacer plate 42. A post 43 extends forwardly from the cleat 41 and through the right hand portion of the plate 42 to form a pivot for a bell crank lever the short arm 44 of which is adjacent and parallel to the plate 42 and the long arm 45 of which extends downwardly and is described in detail below. Mounted on a post extending forwardly from the left hand side (Figs. 9 and 10) of the cleat 41 is a post 46 which receives a spacer plate 47 suitably secured to the cleat 41 in a location spaced laterally from the spacer plate 42. The plates 42 and 47 have the same thickness, and forwardly of the plate 47 and carried by the post 46 is a spacer plate 48 having a thickness corresponding to that of the short arm 44 of the bell crank lever. Further structure here consists of a spacer member 49 supported by the posts 43 and 46 and located in front of the bell crank lever short arm 44 and the plate 47, and a face plate 50 also carried by the posts 43 and 46 in engagement with the front face of the spacer member 49. The front ends of the posts 43 and 46 may be headed against the face plate 50 to hold the above-described parts in position, and with reference to Figs. 9 and 10 it will be seen that the central portion of the face plate 50 is cut away at its rear to form a slot 51. The thickness of the spacer member 49 is substantially the same as the diameter of a cigarette, and the top faces of the spacer member 49 and the face plate 50 are coplanar with that of the shelf 38 and form in effect a forward extension of the shelf.

The cyclically operable escapement mechanism of which the foregoing elements form parts is completed by a rear first or preliminary retainer-releaser member 52 and by a front or second retainer-releaser member 53, both of these members functioning as fully retractable barriers, as will be described. The member 52 is disc-shaped but provided with a straight side to have a curvature of less than 360°, is located between the spacer plates 42 and 47 on a pivot pin received by the cleat 41, and has a thickness not greater than that of either of the spacer plates 42 and 47. The straight side of the member 52 is preferably a dull knife edge. The front retainer-releaser member 53 has substantially the same shape as the rear or preliminary member 52 but its straight side need not be a knife edge, and the member 53 is located in the face plate slot 51, being supported by a pin extending from the face plate 50 into the spacer member 49. The straight side of each of the members 52 and 53 is so spaced from its pivot that upon turning of each member a sufficient amount its straight side does not project or extend above the plane of the top surfaces of the receptacle shelf 38, spacer member 49, and face plate 50, but is fully retracted.

By comparison of Figs. 7 and 8, and also of Figs. 9 and 10, it will be seen that when the first or preliminary retainer-releaser member 52 is located so that a portion thereof extends above the plane of the shelf 38, the front or second retainer-releaser member 53 is fully retracted and inoperative as a barrier, and that when the front or second retainer-releaser member 53 is located so that a portion thereof extends above the plane of the shelf 38, the rear or preliminary retainer-releaser member 52 is fully retracted and inoperative as a barrier. To achieve these results, the members 53 and 52 are connected together so that they turn on their pivot pins simultaneously, their straight sides being at about 108° to each other in the illustrated embodiment, and to this end a pin 54 joins the members 52 and 53, the pin 54 being received in a slot 55 formed in the bell crank lever short arm 44 and pressed upon by one or the other of the slot 55 sides when the bell crank lever as a whole is swung in one direction or the other, as described below. By reason of this construction both the members 52 and 53 are operative as barriers, i. e., both project to a certain extent above the plane of the shelf 38, when neither one is fully retracted, and to accommodate the pin 54 when the members 52 and 53 are turned to cause only the front member 53 to extend upwardly, as in Figs. 8 and 10, the spacer member 49 is provided with a downwardly opening recess 56 adapted to receive the pin 54.

In order to swing the long arm 45 of the bell crank lever and hence turn the retainer-releaser

members 52 and 53 as above described, the present invention contemplates the provision of cam members in the illustrated embodiment, which cam members are operatively connected to the door 30 and engage cam surfaces on the bell crank lever arm 45 to move it. To this end (Figs. 1–6) there is secured to the lower portion of the door 30, as by the rods of the grating as illustrated in Fig. 1, a bent forward edge portion of a quadrant plate 57 the body of which is parallel with the chamber floor 24 and the greater portion of which is adapted to swing outwardly and inwardly of the chamber when the door 30 is opened and closed, respectively. Along a portion of its curvature the plate 57 has a plate segment 58 secured to it and provided with an upstanding cam 59 the left hand edge 60 of which, viewing Fig. 6, is a cam edge. Also mounted on the plate 57 and in a location spaced to the left of the cam 59, viewing Fig. 6, is a second cam 61 of less height than the cam 59 and having a sloping cam edge 62 oppositely disposed to the cam edge 60 of the cam 59.

The two cam edges 60 and 62 are adapted to engage the respective cam surfaces 63 and 64 of a tongue 65 extending forwardly from the bottom of the long arm 45 of the bell crank lever. The tongue 65 has a forwardly tapering construction, as indicated best in Figs. 9 and 10, and is located between the cams 59 and 61 when the door 30 is closed. With this construction, i. e., since the door 30, quadrant plate 57, plate segment 58 with its cam 59, and the cam 61 are stationary relatively to each other and move with the door as a unit, opening movement of the door causes the edge 62 of the cam 61 to engage the slanting cam surface 64 of the tongue 65 and swing the long arm 45 of the bell crank lever to the left, viewing Figs. 9 and 10, thereby causing the rear retainer-releaser member 52 to be fully retracted, i. e., inoperative as a barrier, and the front retainer-releaser member 53 to project upwardly, as shown in Figs. 1, 2, 6, 8, and 10, to perform its barrier function. This is the first phase of the two-phase cycle of operation of the members 52 and 53. The cam 61 leaves the tongue 65 before the door 30 is fully opened, but clears it during door closing movement, and when the door is sufficiently near closed position the edge 60 of the cam 59 engages the cam surface 63 of the tongue 65, and so swings the long arm 45 of the bell crank lever to the right, viewing Figs. 9 and 10, during the continued closing movement of the door 30, thereby causing the rear retainer-releaser member 52 to be upstanding to function as a barrier when the door is fully closed and at the same time causing the front member 53 to be fully retracted, as indicated in Figs. 3, 5, 7, and 9, i. e., to be inoperative as a barrier. This is the second phase of the two-phase cycle of operation of the members 52 and 53. It will be appreciated that during door opening movement the door 30, quadrant plate 57, and cam 61 themselves act unitarily as a bell crank lever to swing the long arm 45 of the escapement bell crank lever, and that during door closing movement the door 30, quadrant plate 57, and segment plate 58 with its cam 59 themselves act unitarily as a bell crank lever to swing the long arm 45 of the escapement bell crank lever. In order to insure that the tongue 65 is always in the path of one or the other of the cams 59 and 61, a bracket 66 mounted from the floor 24 and extending immediately behind the lower end of the bell crank lever arm 45 serves as an abutment preventing any appreciable rearward movement of the arm by reason of the pressure exerted on the tongue 65 by the cams 59 and 61.

The cigarette dispensing structure is completed by providing a receiver for a cigarette falling off the edge of the face plate 50, this receiver in the illustrated embodiment taking the form of a channel-shaped holder 67 (Figs. 1–3 and 5–6) which is shown as supported by the figure 68 of a prisoner suitably secured to the quadrant plate 57 so as to be operatively connected to the door 30 and movable thereby out of and into the chamber when the door is opened and closed, respectively. The front wall of the holder 67 is provided with a slot 69 the width of which is substantially that of a person's thumb tip so that a cigarette may be easily picked out of the holder by a smoker. The holder 67 is held in such position relatively to the door 30 by the figure 68 that when the door is closed the holder is located within the chamber below and immediately in front of the face plate 50 and that when the door is fully open, i. e., at 90° to the front wall 20, a cigarette located in the holder may be easily removed by a smoker because the holder is located outside the chamber.

To illustrate the operation of the above-described apparatus as a whole, let it be assumed that the door 30 is closed, that no cigarette is in the holder 67 or on the spacer member 49, but that cigarettes are located in the receptacle R in juxtaposition on the wedge-shaped member 39 and the shelf 38 as the result of rolling to the latter and being placed on the former through the cutout 27 in the roof 25. Since the door 30 is closed, the rear retainer-releaser member 52 is upstanding and acts as a barrier to prevent movement of the cigarettes, i. e., to prevent the foremost cigarette from rolling to the spacer member 49. The front retainer-releaser member 53 is fully retracted and inoperative. If the door 30 be now opened fully, the rear retainer-releaser member 52 will become fully retracted and inoperative as a barrier, permitting the foremost cigarette to roll forward onto the spacer member 49 and also permitting corresponding movement forward of the cigarettes lying behind the first. But progress will be stopped, i. e., the foremost cigarette will be prevented from rolling off the spacer member 49, because the front retainer-releaser member 53 will have been rising to act as a barrier. If the door 30 be now fully closed, the front member 53 will be fully retracted and inoperative so that the foremost cigarette will roll by gravity off the spacer member 49 and face plate 50 and will drop by gravity to the receiver channel 67 immediately beneath. But only the foremost cigarette will thus drop, for the rear retainer-releaser member 52, which began rising before the door 30 was completely closed, functions as a barrier to prevent a rolling of the next succeeding (and now foremost) cigarette onto the spacer member 49. In this last named operation, the fact that the straight side of the retainer-releaser member 52 is a knife edge permits the member 52 to insert itself between the cigarette lying on the spacer member 49 and the cigarette lying just behind it without any dislocation of the position of the latter. The apparatus is now fully "loaded," as it were, and if the door 30 be again opened, i. e., if the cycle of door opening and door closing be started again so that the cycle of operation of the escapement members 52 and 53 is recommenced, the prisoner 68 will present the holder 67 to a smoker who

picks up the cigarette proffered, while the rear retainer-releaser member 52 will be fully retracted and inoperative and the front member 53 will be upstanding so that another cigarette rolls upon, but not off, the spacer member 49. Subsequent door closing and opening movements result in the prisoner receiving and proffering cigarettes successively but individually until the supply in the receptacle R is exhausted and is replenished upon removal of the cover 23. The principal object of the present invention, set forth in the second paragraph of this specification, is thus achieved.

In order to achieve a further object of the present invention, set forth in the third paragraph of this specification, it is contemplated in the illustrated embodiment of the present invention that simultaneously with presentation of a cigarette when the door 30 is opened, one or more additional receptacles be also presented, i. e., extended from the chamber, these being retracted and located within the chamber when the door 30 is closed. As illustrated, these additional receptacles are for holding an ash tray and matches.

To achieve presentation of an ash tray by means controlled by the door 30, the floor 24 is provided with a groove 70 (Figs. 1–4) having parallel sides at 90° to the chamber front wall 20 and continuing through to the front of this wall, and received in the groove 70 is a flat slide 71 having a longitudinal slot 72 which receives a guide post 73 (Fig. 4) upstanding from the bottom of the groove. A plate 74 secured to the floor 24 and overlying a portion of the groove 70 serves to prevent the slide 71 from leaving the groove during movement. At its forward end the slide 71 underlies the quadrant plate 57 and is provided with an upstanding post 75 (Fig. 4) which is received by a slot 76 formed in the quadrant plate 57 at such an angle that closing and opening movements of the door 30, and therefore to and fro movements of the quadrant plate 57, cause the slide 71 to reciprocate rearwardly and forwardly, respectively.

The side of the slide 71 opposite the retaining plate 74 has secured to it one end of an arm 77 which extends transversely of the chamber beneath the partition 33 and through a slot 78 formed in the upper portion of the innermost of two otherwise identical cleats 79 secured to the floor 24 in spaced relation in a position of parallelism with the groove 70, and mounted on the cleats 79 so as to overlie the arm 77 is a cover plate 80 having a longitudinal slot 81. A pin 82 carried by the free end of the arm 77 extends upwardly through the slot 81 to be received by the rear portion of a drawer 83 which rests on the plate 80 and is adapted to move through a rectangular opening 84 formed in the chamber front wall 20 beneath the grated window 29. The drawer 83 is adapted to receive an ash tray A, and the length of the drawer is such, and the points of securement of the transverse arm 77 to the slide 71 and the drawer 83 are such, that when the door 30 is fully opened a portion of the drawer 83 extends forwardly of the chamber front wall 20 to expose and present the ash tray A, as shown best in Fig. 2, but that when the door 30 is closed the drawer 83 is fully retracted so that its front face is substantially flush with the chamber front wall 20, as indicated in Figs. 3 and 4. In the reciprocating movement of the drawer 83 it will be appreciated that the transverse arm 77 with the pin 82 and the slide 71 with its post 75 move unitarily as a lever and that the door 30 and the quadrant plate 57 themselves unitarily act as a bell crank lever, the walls of the quadrant plate slot 76 serving to apply to the slide post 75 the power which moves the slide 71, the transverse arm 77, and therefore the drawer 83. By reason of this construction, the drawer 83 occupies positions of extension and retraction with respect to the chamber in timed relation to the opening and closing movements, respectively, of the door 30.

In order to present matches when the door 30 is opened, the right chamber wall 23 is provided with an opening 85 which receives a panel 86, and a rod 87 extending through the rear or right side of the panel and through the adjacent upper and lower wall 23 portions forms a panel pivot. Secured to the lower portion of the inner face of the panel 86 is a horizontal plate 88 having a curved edge portion to clear the wall opening 85 and mounted on the panel 86 so as to overlie the plate 88 is a holder 89 for a box of matches M. The free end of the plate 88 is provided with a slot 90 which receives a screw 91 extending from a block 92 secured by the pin 82 in the rear portion of the drawer 83, and the angularity of the slot 90 is such that as the drawer 83 reciprocates outwardly and inwardly under the control of the door 30, the screw 91 presses on one side or the other of the slot 90 to cause the panel 86 to swing outwardly to locate the holder 89 in an extended position for use or to swing inwardly to close and so retract the holder 89. It will be understood that in order for the panel 86 to swing, the door 30, the quadrant plate 57 and slot 76, the slide 71 and post 75, the transverse arm 77 and pin 82, the drawer 83, and the block 92 with its screw 91 together act as a compound lever mechanism to achieve this result, and that the panel 86 and panel plate 88 with its slot 90 themselves constitute a bell crank lever upon which the screw 91 carried by the block 92 operates to swing the panel 86 open and closed. By reason of this construction the match holder 89 occupies positions of extension and retraction with respect to the chamber in timed relation to the extension and retraction, respectively, of the drawer 83.

While all of the features described above are used conjointly in the particular embodiment of the present invention which is illustrated in the accompanying drawings, it will be appreciated that such conjoint use is not essential, and examples here are the fact that either the drawer 83 or the panel 86, or both, together with their immediate actuating mechanism, may be omitted without affecting the cigarette dispensing mechanism per se of the illustrated embodiment. But when either or both of these structural features are included, as illustrated for exemplary purposes, the apparatus as a whole approaches or becomes a complete smoker's "outfit," as it were, and the parts as a whole have a common prime mover in the door 30 and associated parts so that simultaneity of presentation or retraction of a plurality of different smoker's articles may be achieved by operating a single control.

Those skilled in the art will appreciate that various modifications may be made in the details of structure described and illustrated herein without departing from the true scope of the actual invention the characterizing features of which are set forth in the following claims which intentionally use generic terms and expressions that are inclusive in meaning of varied modifications.

What is claimed as new is:

1. In an apparatus for dispensing articles, the combination with a chamber provided with a stationary receptacle adapted to support a plurality of articles for release therefrom by gravity, a door for the chamber, a cyclically operable escapement mechanism for releasing a single article from the receptacle under the influence of gravity when the door is closed, and a holder operatively connected to the door so as to move to a location within the chamber to receive an article released from the receptacle when the door is closed and to a location outside the chamber to proffer said article when the door is opened, of lever mechanism operatively connected to the door and controlled by its opening and closing movements to operate the escapement mechanism cyclically.

2. In an apparatus for dispensing articles, the combination with a chamber provided with a stationary receptacle adapted to support a plurality of articles for release therefrom by gravity, a door for the chamber, a cyclically operable escapement mechanism for releasing a single article from the receptacle under the influence of gravity when the door is closed, a holder operatively connected to the door so as to move to a location within the chamber to receive an article released from the receptacle when the door is closed and to a location outside the chamber to proffer said article when the door is opened, and a lever for operating the escapement mechanism cyclically, of cam means operatively connected to the door and movable therewith for actuating the lever.

3. In an apparatus for dispensing articles, the combination with a chamber provided with a receptacle adapted to support a plurality of cylindrical articles in juxtaposition and having a stationary sloping bottom along which the articles may roll by gravity to and off an edge thereof, a door for the chamber, a cyclically operable escapement mechanism for releasing a single article from said receptacle bottom edge under the influence of gravity when the door is closed, and a holder operatively connected to the door so as to move to a location within the chamber to receive an article released from said edge when the door is closed and to a location outside the chamber to proffer said article when the door is opened, of lever mechanism operatively connected to the door and controlled by its opening and closing movements to operate the escapement mechanism cyclically.

4. In an apparatus for dispensing articles, the combination with a chamber provided with a receptacle adapted to support a plurality of cylindrical articles in juxtaposition and having a stationary sloping bottom along which the articles may roll by gravity to and off an edge thereof, a door for the chamber, a cyclically operable escapement mechanism for releasing a single article from said receptacle bottom edge under the influence of gravity when the door is closed, a holder operatively connected to the door so as to move to a location within the chamber to receive an article released from said edge when the door is closed and to a location outside the chamber to proffer said article when the door is opened, and a lever for operating the escapement mechanism cyclically, of cam means operatively connected to the door and movable therewith for actuating the lever.

5. In an apparatus for dispensing articles, the combination with a chamber provided with a receptacle adapted to receive a plurality of articles for release therefrom by gravity; a door for the chamber; a cyclically operable escapement mechanism for releasing a single article from the receptacle under the influence of gravity when the door is closed, said escapement mechanism including a preliminary barrier and a second barrier each of which is movable to and from a fully retracted position of inoperativeness, said barriers being spaced apart and connected together in such reationship that either one is operable when the other is fully retracted and that both are operable when neither one is fully retracted, and the second barrier being fully retracted when the door is closed, and a holder operatively connected to the door so as to move to a location within the chamber to receive an article released by the second barrier when the door is closed and to a location outside the chamber to proffer said article when the door is opened; of lever mechanism operatively connected to the door and controlled by its opening and closing movements to operate the escapement mechanism cyclically.

6. In an apparatus for dispensing articles, the combination with a chamber provided with a receptacle adapted to receive a plurality of articles for release therefrom by gravity; a door for the chamber; a cyclically operable escapement mechanism for releasing a single article from the receptacle under the influence of gravity when the door is closed, said escapement mechanism including a preliminary barrier and a second barrier each of which is movable to and from a fully retracted position of inoperativeness, said barriers being spaced apart and connected together in such relationship that either one is operable when the other is fully retracted and that both are operable when neither one is fully retracted, and the second barrier being fully retracted when the door is closed; a holder operatively connected to the door so as to move to a location within the chamber to receive an article released by the second barrier when the door is closed and to a location outside the chamber to proffer said article when the door is opened; and a lever for operating the escapement mechanism cyclically; of cam means operatively connected to the door and movable therewith for actuating the lever.

7. In an apparatus for dispensing articles, the combination with a chamber provided with a receptacle adapted to receive a plurality of cylindrical articles in juxtaposition and having a sloping bottom along which said articles may roll by gravity to and off an edge thereof; a door for the chamber; a cyclically operable escapement mechanism associated with said receptacle for releasing a single article from said edge when the door is closed, said escapement mechanism including a first barrier for preventing movement of articles along said sloping bottom beyond a point spaced from its said edge, and a second barrier adjacent said edge for preventing movement of an article off said edge, said barriers each being movable to and from a fully retracted position of inoperativeness, said barriers being connected together in such relationship that either one is operable when the other is fully retracted and that both are operable when neither one is fully retracted, and the second barrier being fully retracted when the door is closed; and a holder operatively connected to the door so as to move to a location within the chamber to receive an article rolling off said edge upon retraction

of the second barrier when the door is closed and to a location outside the chamber to proffer said article when the door is opened; of lever mechanism operatively connected to the door and controlled by its opening and closing movements to operate the escapement mechanism cyclically.

8. In an apparatus for dispensing articles, the combination with a chamber provided with a receptacle adapted to receive a plurality of cylindrical articles in juxtaposition and having a sloping bottom along which said articles may roll by gravity to and off an edge thereof; a door for the chamber; a cyclically operable escapement mechanism associated with said receptacle for releasing a single article from said edge when the door is closed, said escapement mechanism including a first barrier for preventing movement of articles along said sloping bottom beyond a point spaced from its said edge, and a second barrier adjacent said edge for preventing movement of an article off said edge, said barriers each being movable to and from a fully retracted position of inoperativeness, said barriers being connected together in such relationship that either one is operable when the other is fully retracted and that both are operable when neither one is fully retracted, and the second barrier being fully retracted when the door is closed; a holder operatively connected to the door so as to move to a location within the chamber to receive an article rolling off said edge upon retraction of the second barrier when the door is closed and to a location outside the chamber to proffer said article when the door is opened; and a lever for operating said escapement mechanism cyclically; of cam means operatively connected to the door and movable therewith for actuating the lever.

9. In an apparatus for dispensing articles, the combination with a chamber provided with a receptacle adapted to receive a plurality of articles for release therefrom by gravity, a door for the chamber, a cyclically operable escapement mechanism for releasing a single article from said receptacle under the influence of gravity when the door is closed, a holder operatively connected to the door so as to move to a location within the chamber to receive an article released from the receptacle when the door is closed and to a location outside the chamber to proffer said article when the door is opened, and at least one additional receptacle normally located within the chamber and movable to and from, respectively, positions of extension and retraction with respect to the chamber, of lever mechanism operatively connected to the door and controlled by its opening and closing movements for cyclically operating said escapement mechanism and moving said additional receptacle to extended and



retracted positions, respectively, in timed relation to the opening and closing movements of the door.

10. In an apparatus for dispensing articles, the combination with a chamber provided with a receptacle adapted to receive a plurality of articles for release therefrom by gravity, a door for the chamber, a cyclically operable escapement mechanism for releasing a single article from said receptacle under the influence of gravity when the door is closed, a holder operatively connected to the door so as to move to a location within the chamber to receive an article released from the receptacle when the door is closed and to a location outside the chamber to proffer said article when the door is opened, and a plurality of additional receptacles each normally located within the chamber and movable to and from, respectively, positions of extension and retraction with respect to the chamber, of lever mechanism operatively connected to the door and controlled by its opening and closing movements for cyclically operating said escapement mechanism and moving each of said additional receptacles to extended and retracted positions, respectively, in timed relation to the opening and closing movements of the door.

11. In an apparatus for dispensing articles, the combination with a chamber provided with a receptacle adapted to receive a plurality of articles for release therefrom by gravity, a door for the chamber, a cyclically operable escapement mechanism for releasing a single article from said receptacle under the influence of gravity when the door is closed, a holder operatively connected to the door so as to move to a location within the chamber to receive an article released from the receptacle when the door is closed and to a location outside the chamber to proffer said article when the door is opened, second and third receptacles normally located within the chamber and movable to and from, respectively, positions of extension and retraction with respect to the chamber, and lever mechanism operatively connected to the door and controlled by its opening and closing movements for cyclically operating said escapement mechanism and moving said second receptacle to extended and retracted positions, respectively, in timed relation to the opening and closing movements of the door, of lever mechanism operatively connected to the second receptacle and controlled by its movements for moving the third receptacle to extended and retracted positions, respectively, in timed relation to the movements of the second receptacle.

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No references cited.