Feb. 11, 1958 J. B. TAYLOR 2,822,954

DOUGHNUT DISPENSER

Filed June 21, 1954 4 Sheets-Sheet 1

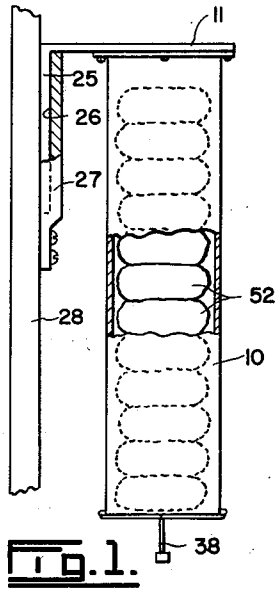


Fig. 1.

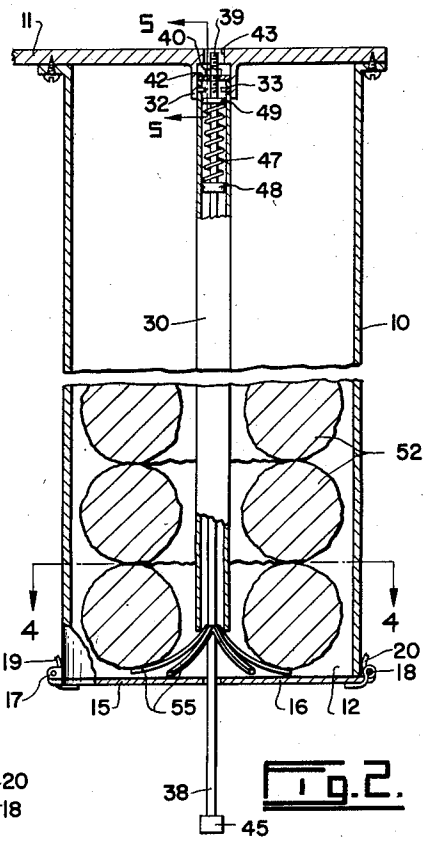


Fig. 2.

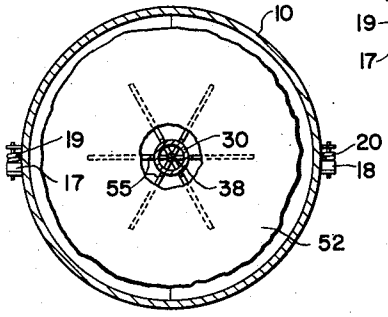


Fig. 4.

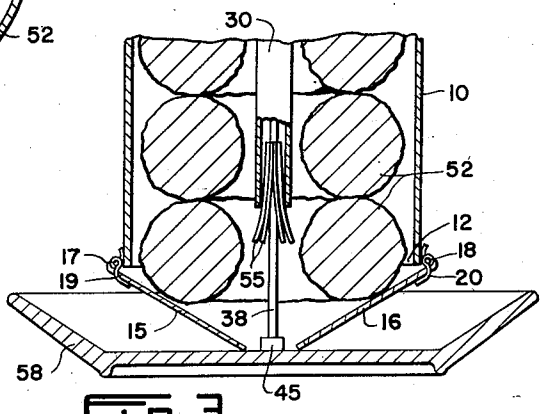


Fig. 3.

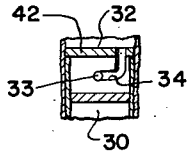


Fig. 5.

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DOUGHNUT DISPENSER

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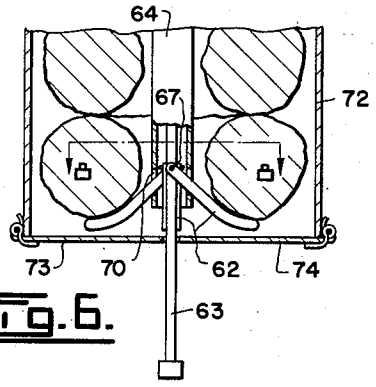


Fig. 6.

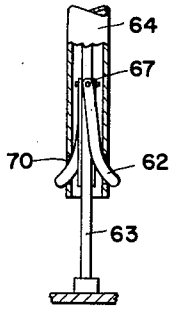


Fig. 7.

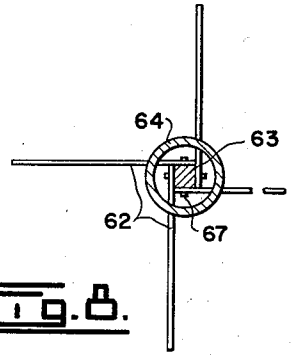


Fig. 8.

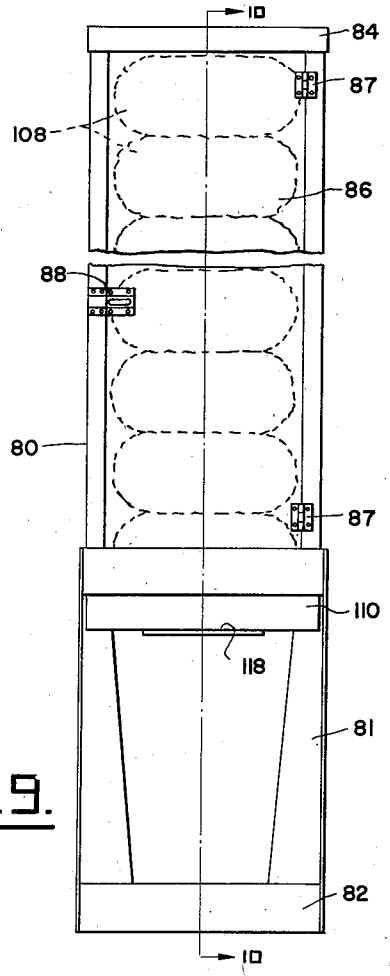


Fig. 9.

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DOUGHNUT DISPENSER

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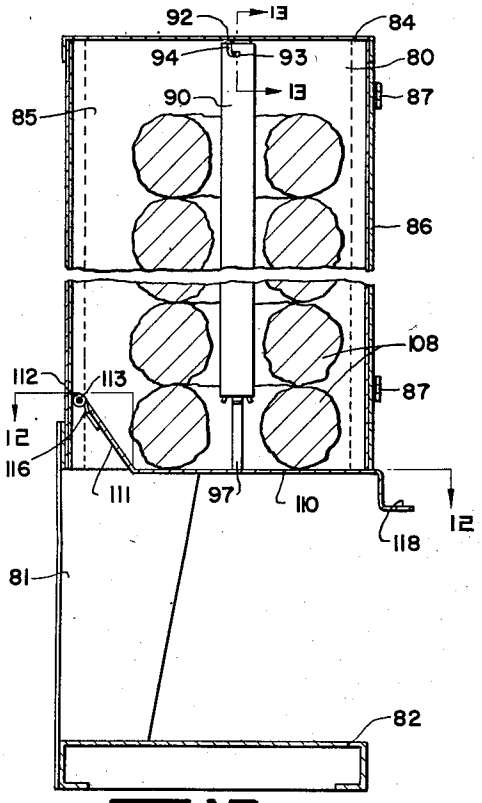


Fig. 10.

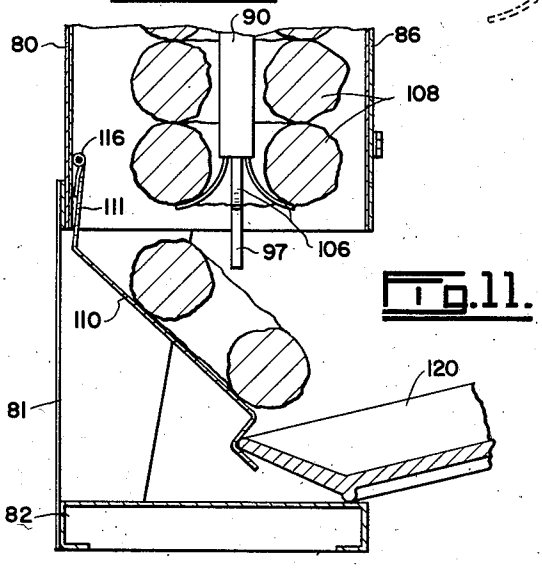


Fig. 11.

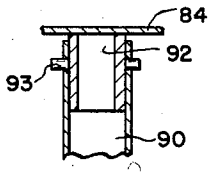


Fig. 13.

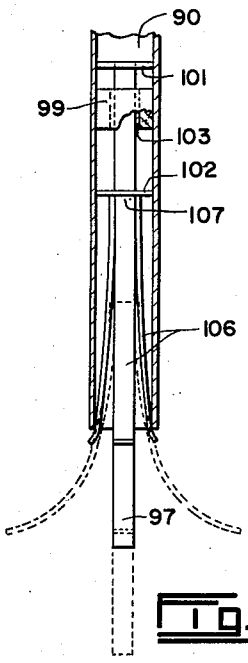


Fig. 14.

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DOUGHNUT DISPENSER

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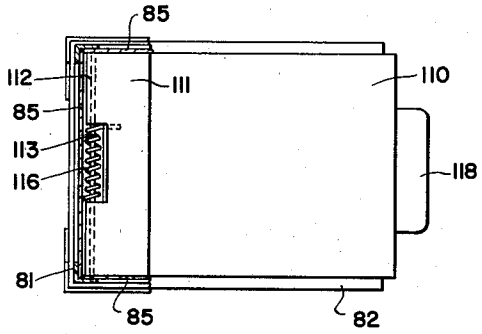


Fig. 12.

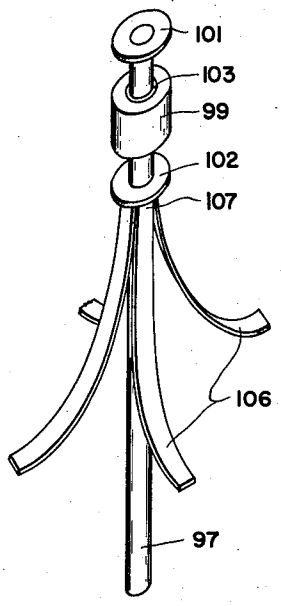


Fig. 15.

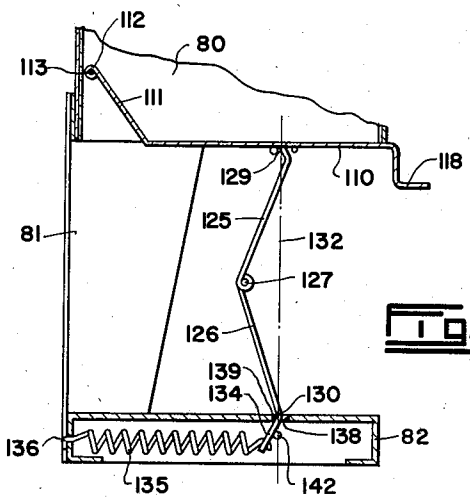


Fig. 16.

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United States Patent Office 2,822,954 Patented Feb. 11, 1958

2,822,954

DOUGHNUT DISPENSER

John B. Taylor, Vancouver, British Columbia, Canada

Application June 21, 1954, Serial No. 438,159

14 Claims. (Cl. 221—197)

This invention relates particularly to a dispenser for doughnuts, although it may be used for other annular articles if desired.

This application is a continuation-in-part of my application Serial Number 212,894, filed February 27, 1951, and now abandoned.

Up to the present time, there has not been any device for holding doughnuts in restaurants and other public places where they are covered and yet may be easily dispensed. If the doughnuts are displayed, they are usually placed on plates or on open dishes, while on the other hand, if they are placed in containers, they are not seen.

The main object of the present invention is the provision of a dispenser for holding a large number of doughnuts from which the doughnuts may be removed quickly and easily one or two at a time.

Another object is the provision of a doughnut dispenser having a plunger which may be moved by a plate to release a doughnut that drops on to the plate.

A further object is the provision of a dispenser for doughnuts having a hingedly-mounted platform or trap door upon which a stack of doughnuts may rest, said dispenser having means for supporting the doughnut immediately above the lowermost doughnut when the platform or door is opened to discharge said lowermost doughnut.

This dispenser comprises a rod on which the doughnuts may be placed one against the other with the rod extending through the holes thereof, releasable holding means adjacent one end of the rod for preventing the doughnuts from being removed therefrom, and means for operating the holding means to release the doughnuts. The releasable means at one time prevents doughnuts from being removed from the rod, while at other times it is rendered inoperative so that doughnuts may slide off said rod.

The rod may be hollow from end to end thereof, or it may be hollow only at its lower end, but in either case, a plunger is slidably mounted in the rod and projects below the lower end thereof. Gripping arms are connected at one end to the plunger and at one time project outwardly from the plunger and rod into a substantially horizontal plane to support doughnuts mounted on the rod, while at other times, these arms are drawn into the tube into positions substantially parallel with the plunger so that the doughnuts are free to move downwardly of the rod.

It is preferable to provide a housing around the vertical rod or support in order to protect the doughnuts thereon from dirt and insects. This housing is open at its lower end to permit the discharge of doughnuts therefrom, and a cover or trap door may be provided for normally closing this lower end.

Examples of this invention are illustrated in the accompanying drawings, in which:

Figure 1 is a reduced view of the doughnut dispener with parts thereof broken away,

Figure 2 is an enlarged vertical section through one form of the invention in its normal position,

Figure 3 is a fragmentary and sectional view of the lower end of the dispenser of Figure 2 being operated to release a doughnut,

Figure 4 is a section taken on the line 4—4 of Figure 2,

Figure 5 is an enlarged fragmentary section taken on the line 5—5 of Figure 2,

Figure 6 is a sectional view similar to Figure 2 illustrating an alternative form of gripping means, which is shown in the gripping position,

Figure 7 is a sectional view of the lower end of the support or rod of Figure 6 showing the gripping means in releasing position,

Figure 8 is an enlarged section taken substantially on the line 8—8 of Figure 6 showing only the supporting rod and gripping means,

Figure 9 is a front elevation of a preferred form of the invention which is different from those of Figures 2 and 6,

Figure 10 is a vertical section taken on the line 10—10 of Figure 9,

Figure 11 is a sectional view similar to Figure 10 of the lower end of the dispenser showing a doughnut being discharged,

Figure 12 is a horizontal section taken substantially on the line 12—12 of Figure 10,

Figure 13 is an enlarged fragmentary section taken on the line 13—13 of Figure 10,

Figure 14 is an enlarged vertical section through the lower end of the supporting rod of Figures 10 and 11 with the gripping means shown in full lines in the release position and in dotted lines in the gripping position,

Figure 15 is a perspective view of the plunger and its associated elements removed from the supporting rod of Figures 10 and 11, and

Figure 16 is a sectional view similar to Figure 10 through the lower end of the dispenser illustrating an alternative form of closing means for the bottom cover or trap door thereof.

Referring to Figures 1 to 5 of the drawings, **10** is an elongated housing which may be formed of suitable transparent material, such as glass or plastic, said housing being of any desired cross sectional shape. In this example, the housing is in the form of a relatively large tube. The housing has a cover **11** at its upper end and is open as at **12** at its lower end. The lower end of the housing may be left open, but it is preferable to provide a suitable closure therefor. One form of closure is shown in the drawings, and this is a cover or trap door formed in two sections **15** and **16** pivotally mounted by hinges **17** and **18** on the outer surface of the housing at the lower end thereof. Springs **19** and **20** associated with these hinges, or any other suitable means, are provided normally to keep the cover sections in a horizontal position with the inner edges together as shown in Fig. 2, at which time the lower end of the housing is closed.

The housing may be mounted or supported in any convenient manner. For example, the cover may be provided with an angular projection **25** adapted to fit in a socket **26** of a bracket **27** mounted on a support **28**.

A vertical support or rod **30** extends longitudinally and centrally of the housing **10**. This support may be suspended from the cover **11**, as shown. It is preferable removably to connect the rod to this cover. For example, the upper end of the rod may extend into a socket **32** depending from the cover, said socket having inwardly-projecting pins **33** adapted to fit into bayonet slots **34** formed in the upper end of said rod, see Figures 2 and 5. In this example, the support is in the form of a tube and has a plunger or rod **38** extending therethrough and beyond its opposite ends. This plunger or rod is threaded

at 39 at its upper end to receive a nut 40 by means of which the plunger may be adjusted vertically in the tube. The nut normally rests on a stopper 42 on the end of the tube, and if necessary, cover 11 is provided with a hole 43 large enough to permit the nut to move therethrough.

The lower end of the support or rod 30 terminates adjacent the corresponding end of the housing, and the plunger projects below both of these and, if desired, the latter may be provided with a head 45. Gravity is usually sufficient to retain the plunger in its normal position, but a spring 47 may be provided on the plunger between a shoulder 48 formed thereon and the under-surface of a washer 49 fitted in tube 30 spaced below the upper end thereof. This shoulder also prevents the plunger from being moved upwardly more than a predetermined distance.

A plurality of doughnuts 52 are stacked in the housing with the support 30 extending through the holes thereof. In this form of the invention, releasable holding means is provided adjacent the lower end of the support or rod for normally preventing the doughnuts from being removed therefrom. In this alternative, a plurality of resilient arms 55 are connected at their upper ends to the plunger adjacent the lower end of the support to form gripping means projecting downwardly and outwardly from the plunger side. These arms normally extend outwardly beneath the lowermost doughnut to prevent it from dropping out of the housing. This, of course, supports the other doughnuts. Figure 2 clearly shows that these gripping arms flare or curve outwardly beneath the tubular support. When the plunger 38 is moved upwardly, the upper ends of the arms move into the hollow support or rod so that the lower ends thereof are moved inwardly towards the plunger and pressed against the sides thereof, thus releasing the lowermost doughnut.

The plunger may be moved upwardly in any desired manner. However, if it is moved by a plate 58, the lowermost doughnut drops downwardly on to the door sections 15 and 16 if the latter are used, and if not, the doughnut drops down on to the plate. If it drops on to the door sections, the plate prevents them from swinging completely open as shown in Figure 3. As long as the plate remains at the lower end of the housing 10, the doughnuts on rod 30 cannot drop downwardly. It will be noted that the doughnut on the door sections is only part way clear of the vertical support when the gripping arms are in their releasing position. When the plate is moved downwardly, the plunger moves in the same direction and the lower ends of the gripping arms spread outwardly to grip the next doughnut. By the time the lowermost doughnut is cleared the support, the arms are out far enough to prevent the next doughnut from dropping off said support.

The length of the portion of the plunger 38 extending below the lower end of the support 30 determines the number of doughnuts to be released each time the device is operated. For example, if the plunger shown in Figure 3 were a little longer, a doughnut would be resting upon the door sections beneath the one shown in this figure.

Figures 6 to 8 show an alternative form of holding means for the doughnuts. In this form, a plurality of gripping arms 62 are pivotally mounted on a plunger 63 extending through a vertical support or rod 64 which is hollow at its lower end. Each arm is connected to the plunger by a pivot pin 67 and for ease in mounting these arms, the plunger is preferably square in cross section, as clearly shown in Figure 8.

These arms 62 project outwardly and downwardly from the plunger through slots 70 formed in the support 64. The arms rest upon the parts of the support or rod at the lower ends of the slots. The upper end of this plunger and the support are mounted in the same manner as the corresponding plunger and support of the form of the invention illustrated in Figures 1 to 6. A housing 72 surrounds the support, and it may or may not have cover sections 73 and 74 normally closing its lower end.

When the plunger 63 is moved upwardly, the arms 62 are drawn through the slots 70 into the support until the lowermost doughnut is released. When the upward pressure on the plunger is removed, it drops downwardly and as the gripping arms are resting on the lower ends of the slots, they swing outwardly away from the plunger to support the doughnut stack.

Figures 9 to 16 illustrate an alternative form of the invention which is actually the preferred form thereof. In this alternative, a housing 80 is carried by vertical supports 81 projecting upwardly from a base 82. This housing may have any desired cross sectional shape, but it is preferably rectangular in cross section, as shown in Figure 12. This housing is permanently closed at its upper end by a cover 84 and has three sides 85 formed of glass. The front of the housing is in the form of a glass door 86 having hinges 87 at one side thereof and a latch 88 at its opposite side. The lower end of the housing is normally closed by a cover or trap door, as described later on.

A vertical rod or support 90 extends longitudinally of the housing. This rod may be of any desired cross sectional shape, and it may be solid and hollowed out at its opposite ends, or it may be in tubular form, as illustrated. The rod is removably mounted in the housing, and one way of doing this is to provide a short rod 92 depending downwardly from cover 84 and fitting within the upper end of rod 90, said rod having radiating pins 93 which removably fit into bayonet slots 94 formed in the upper end of the supporting rod.

A plunger 97 is slidably mounted in the rod 90 in any convenient manner and projects downwardly from the lower end of said rod. This rod actually terminates above the lower end of housing 80 preferably a distance equal to the thickness of a doughnut from face to face thereof, and the plunger has an upper and a lower position. When the plunger is in its upper position, the lower end thereof is substantially in the same plane as the lower end of the housing, as clearly shown in Figure 10.

One way of mounting the plunger 97 is to provide it with a plug 99 slidably mounted on its upper end. This plug is slidable between spaced washers 101 and 102 fixedly mounted on the plunger. The diameter of the plug is slightly larger than that of the washers, and it is adapted to form a snug fit within the hollow lower end of rod 90. The plug is preferably formed of a material which will frictionally engage with the interior of the rod and yet may be moved into or out of the rod when desired. For example, the plug may be formed of cork, in which case it may have a metal tube 103 extending therethrough centrally thereof to provide a wearing surface between it and the plunger. When the plug is pressed into the supporting rod, washer 101 engages it when the plunger is in its lower position, and washer 102 engages it when the plunger is in its upper position.

A plurality of resilient gripping arms 106 are connected at one end at 107 to plunger 97. These arms are so located on the plunger that when the latter is in its upper position, the arms are drawn into the lower end of the support or rod 90, as shown in full lines in Figure 14, at which time the arms are pressed into positions substantially parallel with the plunger by the rod. The lower or free ends of the arms are positioned at this time at or near the lower end of the rod. When the plunger moves to its lower position, the resilient arms flare or curve outwardly into a substantially horizontal plane, as shown in dotted lines in Figure 14. The plunger may drop down by gravity, but the resiliency of the arms bearing against the lower end of the supporting rod helps this downward movement. Actually, each arm 106 is shaped in the form of a curve from end to end thereof so that it is in its normal shape or position when the plunger is in the lower position, and the arm is bent out of its normal position

as it is drawn into the supporting rod. When the arms are in their outer or horizontal positions, they are adapted to engage or support the doughnuts **108** stacked on the supporting rod.

In this form of the invention, the arms **106** only support the stack of doughnuts temporarily, so that another form of support is provided for normally carrying the doughnut stack. This is in the form of a cover or trap door **110** which extends across the lower end of housing **80** and is hingedly connected thereto. It has been found desirable to provide the cover with a portion **111** which extends upwardly and outwardly from the main portion thereof, said portion **111** having a hinge **112** along its outer edge which is carried by a pintle **113** supported by the housing. The hinge is located to one side of the supporting rod **90** substantially in line with the lower end thereof, while the main portion of the door **110** is spaced below said lower end a distance substantially equal to the thickness of a doughnut **108** from face to face thereof as clearly shown in Figure 10. A spring **116** is provided at the hinge **112** for normally keeping the door closed or in a substantially horizontal plane. The lower end of plunger **97** is engaged by the door at this time and held in its uppermost position so that the resilent arms **106** are drawn into the supporting rod clear of the doughnuts. At this time, the doughnuts are supported by the trap door, as shown in Figure 10. The front edge of the door may be provided with a step **118** by means of which the door may be opened.

When it is desired to obtain a doughnut from the dispenser, the edge of a plate **120**, see Figure 11, may be pressed against step **118** to swing the door **110** downwardly into its open position. This permits the lowermost doughnut of the stack which is resting on the door to slide downwardly off the door on to the plate. As the door swings open, plunger **97** moves downwardly so that the arms **106** move out of the tube and engage the doughnut immediately above the lowermost one. These arms usually move beneath the doughnut, but as the thickness of doughnuts varies somewhat, they may not always get beneath it, but they will move outwardly and stick into it to prevent the stack from dropping downwardly while the door is open. When the door is released, it swings back into its normal position, raising plunger **97** and causing the gripping arms to be drawn back into the supporting tube. This frees the doughnut which was held by the arms so that it and any doughnuts above it may drop downwardly until the lower doughnut rests on the door.

If it is desired to discharge two doughnuts at a time, it is only necessary to make the plunger longer and to increase the space between the door and the lower end of the supporting tube sufficiently for the purpose. If desired, gripping arms of the type shown in Figures 6 to 8 may be used in the alternative of Figures 9 to 16. In this case, it is only necessary to provide the slots in the supporting rod **90** near its lower end for the arms.

Figure 16 illustrates an alternative form of spring means for closing the door **110** and maintaining it closed. Spring **116** may be omitted with this arrangement. This means for yieldably retaining the door closed comprises a pair of substantially vertically disposed arms **125** and **126** hingedly connected together at their adjacent ends at **127**. The opposite end of the upper arm is pivotally connected to the underside of the trap door at **129**, while the opposite end of the lower arm is pivotally connected to the base **82** at **130**. These arms extend in a V to one side of a plane passing through the pivots at the outer ends thereof, said plane being illustrated by the dot and dash line **132**. A finger **134** projects from the lower arm below the pivot of its outer end and below the upper surface of base **82**, and a spring **135** is connected at one end to this finger and at its opposite end at **136** to the base.

As spring **135** tends to draw the finger **134** towards the edge of the base, and the latter extends from the lower end of arm **126** at substantially a right angle thereto, it is only necessary to provide a slot **138** in the upper surface of the base through which the lower arm and its finger extends. The finger is actually an extension of the arm, and the bend **139** in the latter is drawn against the edge of the slot so that said edge actually forms the pivot for the outer end of the lower arm. A stop **142** may be provided on the finger below the top of the base, said stop being longer than slot **130** in order to prevent the finger from accidentally being drawn upwardly through said slot.

Spring **135** exerts a force which normally tends to swing the lower arm **126** around its lower pivot to straighten out said arm and arm **125**, that is, the tendency is to move the pivot **127** towards the plane **132** passing through the pivots of the outer ends of both arms. This presses the cover or door **110** upwardly against the bottom of housing **80** to keep the latter closed. When the cover or door is swung downwardly into its open position, pivot **127** is moved away from the plane **132**, pivoting arm **126** around its lower pivot point and causing finger **134** to stretch the spring. As soon as the door is released, this spring returns it to its normal horizontal or closed position.

What I claim as my invention is:

1. A dispenser for annular doughnuts comprising a vertical housing closed at its upper end, a vertical rod suspended within and extending longitudinally of the housing on which doughnuts may be stacked and extending through the holes thereof, said rod being hollow at its lower end, a plunger slidably mounted in the hollow end of the rod and extending outwardly therefrom, a plurality of gripping arms connected at one end to the plunger near the rod end at one time lying in a substantially horizontal plane with their free ends radiating from the plunger a considerable distance to prevent doughnuts from dropping off the rod, said plunger being movable longitudinally of the rod to draw the arms against the latter and move them longitudinally therein to release the doughnuts, said arms returning to the horizontal plane when the plunger moves in the opposite direction, a closure for the bottom of the housing, and means normally retaining the closure in its closed position.

2. A dispenser for annular doughnuts comprising a vertical housing closed at its upper end, a vertical rod removably supported at one end at the top of the housing extending downwardly through the latter and on which doughnuts may be stacked, said rod extending through the holes of all the doughnuts and being hollow at its lower end, a plunger slidably mounted in the hollow end of the rod and extending outwardly therefrom, and a plurality of gripping arms connected at one end to the plunger near the rod end at one time lying in a substantially horizontal plane with their free ends radiating from the plunger a considerable distance to prevent doughnuts from dropping off the rod, said plunger being movable longitudinally of the rod to draw the arms against the latter and move them longitudinally therein to release the doughnuts, said arms returning to the horizontal plane when the plunger moves in the opposite direction.

3. A dispenser for annular doughnuts comprising a vertical rod on which doughnuts may be stacked, said rod extending through the holes of the doughnuts, a hingedly mounted trap door lying in a horizontal plane and extending across the plane of the rod near the lower end thereof, said door being normally closed and positioned so that the lowermost doughnut of the stack on the rod rests on the door, means yieldably holding the door in its normally closed position, and releasable holding means carried by the rod adjacent its lower end and engaged by the door when the latter is closed to free the doughnuts, said holding means operating when the door is swung downwardly to hold the doughnut immediately above the lowermost one while said lowermost doughnut is being discharged.

4. A dispenser as claimed in claim 3 in which the trap door is spaced downwardly from the lower end of the rod a distance substantially equal to the thickness of a doughnut from face to face thereof.

5. A dispenser for annular doughnuts comprising a vertical rod on which doughnuts may be stacked with the rod extending through the holes thereof, said rod being hollow at its lower end, a hingedly mounted trap door lying in a horizontal plane and extending across the plane of the rod near the lower end thereof, said door being normally closed and positioned so that the lowermost doughnut of the stack on the rod rests on the door, means yieldably holding the door in its normally closed position, a plunger slidably mounted in the rod and projecting below the lower end thereof and engaging the door when the latter is closed, said plunger moving downwardly a predetermined distance when the door is swung open, and gripping means operated by the plunger and positioned near the lower end of the rod, said gripping means being inoperative when the door is closed and engaging the doughnut immediately above the lowermost one when the door is swung downwardly to discharge said lowermost doughnut.

6. A dispenser for annular doughnuts comprising a vertical rod on which the doughnuts may be placed one against the other with the rod extending through the holes thereof, said rod being hollow at its lower end, a plunger slidably mounted in the hollow end of the rod and extending outwardly from said end, a hingedly mounted trap door lying in a horizontal plane and extending across the plane of the rod near the lower end thereof, said door being normally closed and positioned so that the lowermost doughnut of the stack on the rod rests on the door, said door also engaging the plunger and holding it in an upper position, means yieldably holding the door in its normally closed position, a plurality of gripping arms connected at one end to the plunger and lying substantially parallel therewith when the plunger is in its upper position and being movable into a substantially horizontal plane with their ends radiating from the plunger to engage the doughnut immediately above the lowermost one when the plunger moves downwardly as the door is swung open to discharge said lowermost doughnut.

7. A dispenser as claimed in claim 6 in which the arms are resilient and their lower ends engage a portion of the rod when they are in their normal inoperative position, the resiliency of said arms forcing the plunger downwardly when the door is swung open.

8. A dispenser as claimed in claim 6 in which the main part of the trap door is spaced downwardly from the lower end of the rod a distance substantially equal to the thickness of a doughnut from face to face thereof, and the hinge of the door is located above said main part and to one side of the rod.

9. A dispenser for annular doughnuts comprising a vertical rod on which doughnuts may be stacked with the rod extending through the holes thereof, said rod being hollow at its lower end, a hingedly mounted trap door lying in a horizontal plane and extending across the plane of the rod near the lower end thereof, said door being normally closed and positioned so that the lowermost doughnut of the stack on the rod rests on the door, means yieldably holding the door in its normally closed position, a plug in the rod spaced from the lower end thereof, a plunger slidably mounted in the plug and projecting below the lower end of the rod and engaging the door when the latter is closed, said plunger being in an upper position when the door is closed, means on the plunger for limiting the downward movement thereof when the door is swung open, and a plurality of resilient gripping arms connected at one end to the plunger and lying substantially parallel therewith within the hollow rod when the plunger is in its upper position, said arms clearing the rod and moving into a substantially horizontal plane with their ends radiating from the plunger to engage the doughnut immediately above the lowermost one when the plunger moves downwardly as the door is swung open to discharge said lowermost doughnut.

10. A dispenser for annular doughnuts comprising a vertical housing closed at its upper end, a hingedly mounted horizontal trap door normally closing the lower end of the housing, a vertical rod supported at one end at the top of the housing casing and terminating above the door on which doughnuts may be stacked, said stack resting on the door, means yieldably retaining the door closed, and releasable holding means carried by the rod adjacent its lower end and engaged by the door when the latter is closed to free the doughnuts, said holding means operating when the door is swung downwardly to hold the doughnut immediately above the lowermost one while said lowermost doughnut is being discharged.

11. A dispenser for annular doughnuts comprising a vertical housing closed at its upper end, hingedly mounted horizontal trap door normally closing the lower end of the housing, a vertical rod supported at one end at the top of the casing and terminating above the door on which doughnuts may be stacked, said stack resting on the door, means yieldably retaining the door closed, said rod being hollow at its lower end, a plunger slidably mounted in the rod and projecting below the lower end thereof and engaging the door when the latter is closed, said plunger moving downwardly a predetermined distance when the door is swung open, and gripping means operated by the plunger and positioned near the lower end of the rod, said gripping means being inoperative when the door is closed and engaging the doughnut immediately above the lowermost one when the door is swung downwardly to discharge said lowermost doughnut.

12. A dispenser as claimed in 11 in which the trap door when it is closed is spaced downwardly from the lower end of the rod a distance substantially equal to the thickness of a doughnut from face to face thereof.

13. A dispenser for annular doughnuts comprising a vertical housing closed at its upper end, a hingedly mounted horizontal trap door normally closing the lower end of the housing, a vertical rod supported at one end at the top of the housing and terminating above the door on which the doughnuts may be stacked, said stack resting on the door, means yieldably retaining the door closed, said rod being hollow at its lower end, a plunger slidably mounted within the rod and projecting below the lower end thereof and engaging the door when the latter is closed, said plunger being in an upper position when the door is closed, means on the plunger for limiting the downward movement thereof when the door is opened, and a plurality of resilient gripping arms connected at one end to the plunger and lying substantially parallel therewith within the hollow rod when the plunger is in its upper position, said arms clearing the rod and moving into a substantially horizontal plane with their ends radiating from the plunger to engage the doughnut immediately above the lowermost one when the plunger moves downwardly as the door is swung open to discharge said lowermost doughnut.

14. A dispenser as claimed in claim 13 in which the main part of the door is spaced below the lower end of the rod a distance substantially equal to the thickness of a doughnut from face to face thereof, and the hinge of the door is positioned above said main part to one side of the rod.

References Cited in the file of this patent

UNITED STATES PATENTS

1,247,411	Laible	Nov. 20, 1917
1,800,459	Maclean	Apr. 14, 1931
1,969,170	Erickson	Aug. 7, 1934
2,635,026	Kreul	Apr. 14, 1953

FOREIGN PATENTS

498,838	Germany	May 28, 1930