

SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO	
RAD: 12-165004- -5	FECHA: 2014-01-24 11:09:34
DEP: 2020 DIRECCION DE NUEVAS CREACIONES	EVE: 1 REGISTRO/DEPOSITO/CONCESION/DEPOSITO
TRA: 3 PATENTES DE MODELO DE UTILIDAD	FOLIOS: 6
ACT: 519 PRESENTACION	

DIRECCIÓN DE NUEVAS CREACIONES

2020
Bogotá, D.C.,

Abogado(a)/Señor(a)
JOSE LUIS PINTO ROZAS

Asunto: Radicación: 12-165004- -5
Trámite: 3
Evento: 1
Actuación: 519
Oficio: 702
Folios: 6

Patente de Invención				Patente de Modelo de Utilidad	X
Vía Nacional	X				
Vía PCT (Fase Nacional)		Capítulo I		Capítulo II	
No. Solicitud Internacional					
Fecha de Presentación Internacional					

Como resultado del Examen de Fondo realizado, con fundamento en el artículo 85 y en concordancia con el artículo 45 de la Decisión 486 de la Comisión de la Comunidad Andina, se le comunica:

1. Documentos estudiados

Descripción:	Rad. N° 12-165004-00000-0000	24/Septiembre/2012
	Rad. N° 12-165004-00003-0000	12/Diciembre/2012
Reivindicaciones:	Rad. N° 12-165004-00000-0000	24/Septiembre/2012
	Rad. N° 12-165004-00003-0000	12/Diciembre/2012
Dibujos:	Rad. N° 12-165004-00000-0000	24/Septiembre/2012

2. Objeto de la invención

En el presente documento se aplicará lo establecido en la Circular Única en su Título X, con respecto a que cuando la solicitud contenga más de diez (10) reivindicaciones y no se haya pagado la tasa complementaria, sólo se estudiarán las cubiertas por la tasa pagada al momento de realizar el examen de patentabilidad consagrado en el artículo 45 de la Decisión 486.

Título de la solicitud: “Dispensador doble mecánico manual con dos salidas para bolsas o cajas de papel higiénico y toallas higiénicas” (Fl. 1).

El problema planteado en esta solicitud, consiste en un dispensador para bolsas o cajas de papel higiénico y toallas higiénicas, en el cual no se utilice energía eléctrica para su funcionamiento. De igual manera, se busca facilitar el aprovisionamiento de papel higiénico y toallas higiénicas en el lugar de instalación.

Para resolver este problema técnico, la solicitud en estudio propone un dispensador de toallas higiénicas que consta de doble salida y doble monedero, para asegurar el aprovisionamiento de toallas higiénicas y papel higiénico en sitios de alta afluencia de público.

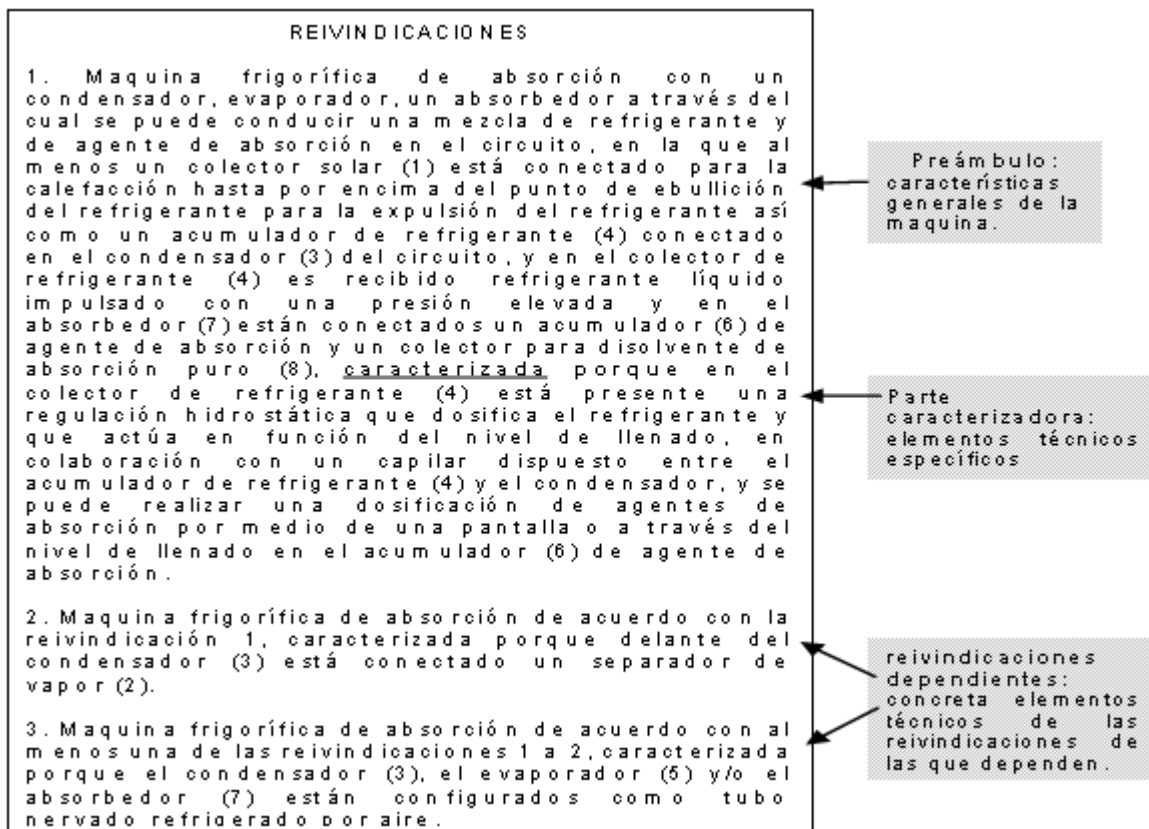
El objeto de la presente Solicitud se relaciona con la Clasificación Internacional de Patentes (CIP): G 07 F 11/10.

3. De la Solicitud de Patente

Reivindicaciones (Art 30 D 486, Art 22 PCT)

El capítulo reivindicatorio no es claro porque:

- 1- las expresiones *“lo cual se utiliza para lugares con alta afluencia de público”, “es mayor la cantidad de producto para los usuarios”, “Como funciona de manera mecánica, no requieren de energía eléctrica”* y *“El dispositivo de descarga de material de limpieza que comprende una carcasa metálica para contener máximo 160 bolsas o cajas de papel higiénico y 80 toallas higiénicas; describen funciones, efectos, ventajas o resultados a alcanzar del producto para el cual se solicita protección, los cuales no son aspectos susceptibles de patente. Cabe aclarar que el producto reclamado se debe definir técnicamente mediante sus características estructurales (tangibles). Se sugiere al solicitante eliminar las expresiones citadas.*
- 2- Los materiales no pueden ser objeto de protección vía modelo de utilidad. Como se mencionó anteriormente, solo se protegen las características constructivas del producto. Por ende, utilizar expresiones que hacen referencia a materiales o a sus propiedades, como: *“metálica”* no pueden ser incluidas dentro de la reivindicación independiente como una característica esencial de la invención. Se sugiere al solicitante eliminar la expresión citada.
- 3- La reivindicación 1 no está estructurada correctamente. Como se mencionó en el Oficio No. 20563, una reivindicación se compone de: a) un preámbulo, el cual sirve para situar el objeto de la invención dentro de un contexto técnico; y b) una parte característica, que define las características estructurales que se desean proteger. Estas dos partes están separadas por la expresión **“caracterizada por”**. Cabe agregar, que el preámbulo de la reivindicación generalmente coincide con el título de la invención. A continuación se muestra un ejemplo guía que puede ser utilizado cuando el solicitante replantee el capítulo reivindicatorio de su solicitud:



De igual forma, se sugiere seguir las recomendaciones y aclaraciones expuestas en los Anexos 1 y 2 de la presente comunicación, donde se presentan recomendaciones y ejemplos guía para la presentación del capítulo descriptivo y del capítulo reivindicatorio.

Descripción (Art 28 D 486)

Se sugiere incluir los números o letras de referencia de las características incluidas en la descripción, con el fin de facilitar la identificación de las características técnicas reclamadas en los dibujos y en el resto de la solicitud. Se recomienda verificar que los números o letras de referencia que se asignen a cada característica, también se incluyan en las reivindicaciones y en los dibujos, guardando concordancia en toda la solicitud. Cabe agregar, que cada característica técnica debe tener un único número de referencia asignado, es decir, dos características no deben tener el mismo número de referencia.

Finalmente, se recuerda al solicitante que la reivindicación debe estar enteramente sustentada en la descripción, es decir, todas las características que se incluyan en la misma, también deben estar incluidas en la descripción de la solicitud.

4. Determinación del Estado de la Técnica

El estado de la técnica se determinó con base en la fecha de presentación de la solicitud de patente nacional: septiembre 24 de 2012, y se encontraron los siguientes documentos que anticipan el objeto de esta solicitud:

Ítem	Documento	Título	Fecha de Publicación
D1	US 5'167.345	'Dual dispenser'	01/Diciembre/1992
D2	US 6'382.387	'Vending machine having a mechanism for preventing a knob from turning and accepting Money when the machine is out of product'	07/Mayo/2002
D3	link	'Vending'	25/Febrero/2010
D4	link	'Bobrick ADA – Compliant Push – Button Operated Napkin/Tampon Vendors'	01/Junio/2011

El documento D1 ¹ divulga un dispensador que comprende dos compartimientos donde están almacenados los artículos a dispensar. De igual forma, comprende medios, dentro de la carcasa del dispensador, que permiten el movimiento de los artículos desde los compartimientos hasta la ranura de descarga (resumen).

El documento D2 ² divulga una máquina dispensadora que comprende dos compartimientos verticales, que contienen paquetes planos o, en su defecto, tubulares (resumen).

El documento D3 ³ divulga un dispensador con doble dispositivo para recibir monedas y su correspondiente salida para los artículos a dispensar (video, ver figura del documento D3).

El documento D4 ⁴ divulga un dispensador con doble dispositivo para recibir monedas, su correspondiente ranura de salida y mecanismo interno para el aprovisionamiento de los artículos a dispensar (video, ver figura del documento D4).

5. Examen de Patentabilidad (Art 14 D486)

El examen de patentabilidad que se muestra a continuación, se realiza con base en las características técnicas que se incluyen en la reivindicación 1. Como se mencionó en el numeral 3 de este documento, en general dicha reivindicación describe efectos, ventajas, funciones o resultados a alcanzar, los cuales no son susceptibles de patente y no son objeto de estudio en el examen de patentabilidad.

Novedad (Art 16 D486)

La reivindicación 1 consiste en: *“Es un dispensador con doble salida, lo cual se utiliza para lugares con alta afluencia de público, ya que al poseer doble salida y doble monedeo, uno en cada lado...”* (Ver página 3 del radicado bajo No. Rad. N° 12-165004-00003-0000)

Comparación de las características técnicas **esenciales**, con las del Estado de la Técnica:

Características esenciales	D1	D2
Dispensador caracterizado por:	Dispensador caracterizado por:	Dispensador caracterizado por:
Doble salida.	Abertura de descarga (20) (Fig. 1; Col. 2, línea 62)	Abertura de descarga (16) (Fig. 1; Col. 4, líneas 21 a 22)
Doble monedero, uno en cada lado.	Dos ranuras para monedas (16) y (17), dos perillas (18) y (19) (Fig. 1, Col. 2, líneas 60 a 62)	Mecanismo para monedas (24) y (26) (Fig. 2; Col. 4, líneas 37 a 39)
Carcasa.	Carcasa de dispensador cerrado por medio del panel frontal (15) (Fig. 1, Col. 2, líneas 58 a 60)	Carcasa de dispensador (14) (Fig. 1; Col. 4, líneas 16 a 18)

D3	D4
Dispensador caracterizado por:	Dispensador caracterizado por:
Salida de producto (video, ver figura del documento D3)	Salida de producto (video, ver figura del documento D4)
Doble monedero (video, ver figura del documento D3)	Doble monedero (video, ver figura del documento D4)
Carcasa (video, ver figura del	Carcasa (video, ver figura del

1 https://www.google.com/patents/US5167345?pg=PA5&dq=5167345&hl=en&sa=X&ei=Ct_GUrzQOM3nkAfn64HoCQ&ved=0CDcQ6AEwAA

2 https://www.google.com/patents/US6382387?pg=PA3&dq=6382387&hl=en&sa=X&ei=lt_GUs6vCI-FkQecpoC4DQ&ved=0CDcQ6AEwAA

3 <http://www.youtube.com/watch?v=qWy0vUxuP7A>

4 <http://www.youtube.com/watch?v=mrnmcQPLNjg>

documento D3)	documento D4)
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Las características esenciales del dispensador de la reivindicación 1 habían sido divulgadas previamente en D1, D2, D3 y D4. En consecuencia, la reivindicación 1 no es nueva.

Cabe agregar, que el hecho de que el dispensador reclamado contenga doble salida no puede dar novedad a la invención, toda vez que no representa una ventaja técnica respecto a las aberturas de descarga de los documentos D1, D2, D3 y D4. Lo anterior, debido a que, tanto la doble salida reclamada, como las aberturas divulgadas en los documentos antecedentes, cumplen el mismo efecto técnico, el cual consiste en proporcionar una salida para los artículos a dispensar. De acuerdo con lo anterior, la solicitud no cumple con el artículo 81 de la Decisión 486, donde se establece que el producto reclamado debe proporcionar alguna utilidad, ventaja o efecto técnico que antes no se tenía en el estado de la técnica.

Finalmente, a continuación se presentan imágenes de los documentos D3 y D4, con sus características técnicas señaladas:

Figura del documento D3



Figura del documento D4



6. Conclusión

Los requisitos de Patentabilidad de la presente Solicitud están afectados así:

Ítem	Documento	Reivindicaciones afectadas	Requisito que afecta
D1	US 5'167.345	1	Novedad
D2	US 6'382.387	1	Novedad
D3	link	1	Novedad
D4	link	1	Novedad

En cumplimiento del artículo 45 de la Decisión 486 de la Comisión de la Comunidad Andina, se le indica que debe dar respuesta dentro del término de treinta (30) días contados a partir del día siguiente de la fecha de notificación de la presente comunicación. En caso de no dar respuesta al presente requerimiento, o si a pesar de la respuesta subsistieran los impedimentos para la concesión, se denegará la patente.

Se invita al solicitante se sirva indicar, si así lo considera, su renuncia al término faltante de treinta (30) días para dar respuesta a este requerimiento y presentarla por escrito.

Finalmente, se le recuerda al solicitante que si como respuesta a este requerimiento llegara a modificar el capítulo reivindicatorio y éste contenga más de diez (10) reivindicaciones, no pagará la tasa de modificación voluntaria pero sí la correspondiente al pago por reivindicación adicional.

Notifíquese el presente oficio conforme a lo dispuesto en el numeral 5.2, literal e), del capítulo quinto del título primero de la Circular Única No. 10 de 2001.



JOSÉ LUIS SALAZAR LÓPEZ
Director de Nuevas Creaciones (c)

El anterior requerimiento fue notificado por fijación en lista, de fecha 2014-01-28

Elaboró: Monica Andrea Gutierrez Almonacid
Revisó: Sonia Andrea Diaz Pirazan



US005167345A

United States Patent [19]**Bleeker**[11] **Patent Number:** **5,167,345**[45] **Date of Patent:** **Dec. 1, 1992**[54] **DUAL DISPENSER**[75] **Inventor:** **Raymond A. Bleeker, Norwalk, Calif.**[73] **Assignee:** **Bobrick Washroom Equipment, Inc., North Hollywood, Calif.**[21] **Appl. No.:** **735,650**[22] **Filed:** **Jul. 25, 1991**[51] **Int. Cl.⁵** **G07F 11/00**[52] **U.S. Cl.** **221/17; 221/103; 221/131; 221/151; 221/232; 221/273; 221/298; 221/301**[58] **Field of Search** **271/17-20, 271/103, 108, 111, 123, 131, 133, 151, 194, 195, 226, 232, 273, 272, 274, 276, 298, 299, 301**[56] **References Cited****U.S. PATENT DOCUMENTS**

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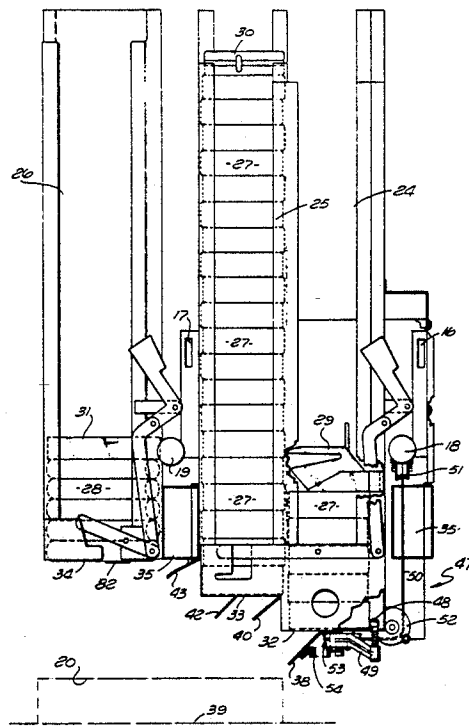
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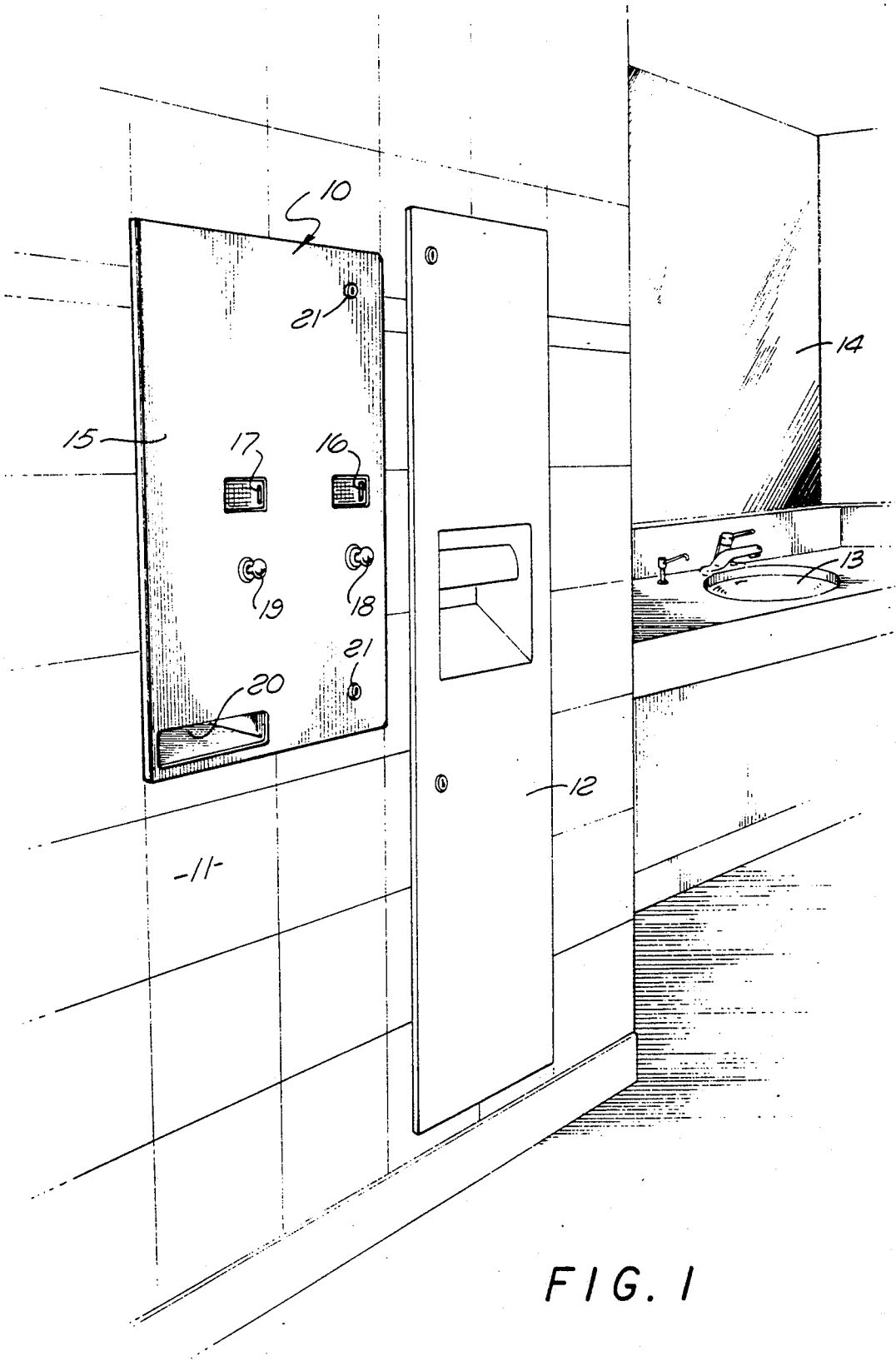
FOREIGN PATENT DOCUMENTS

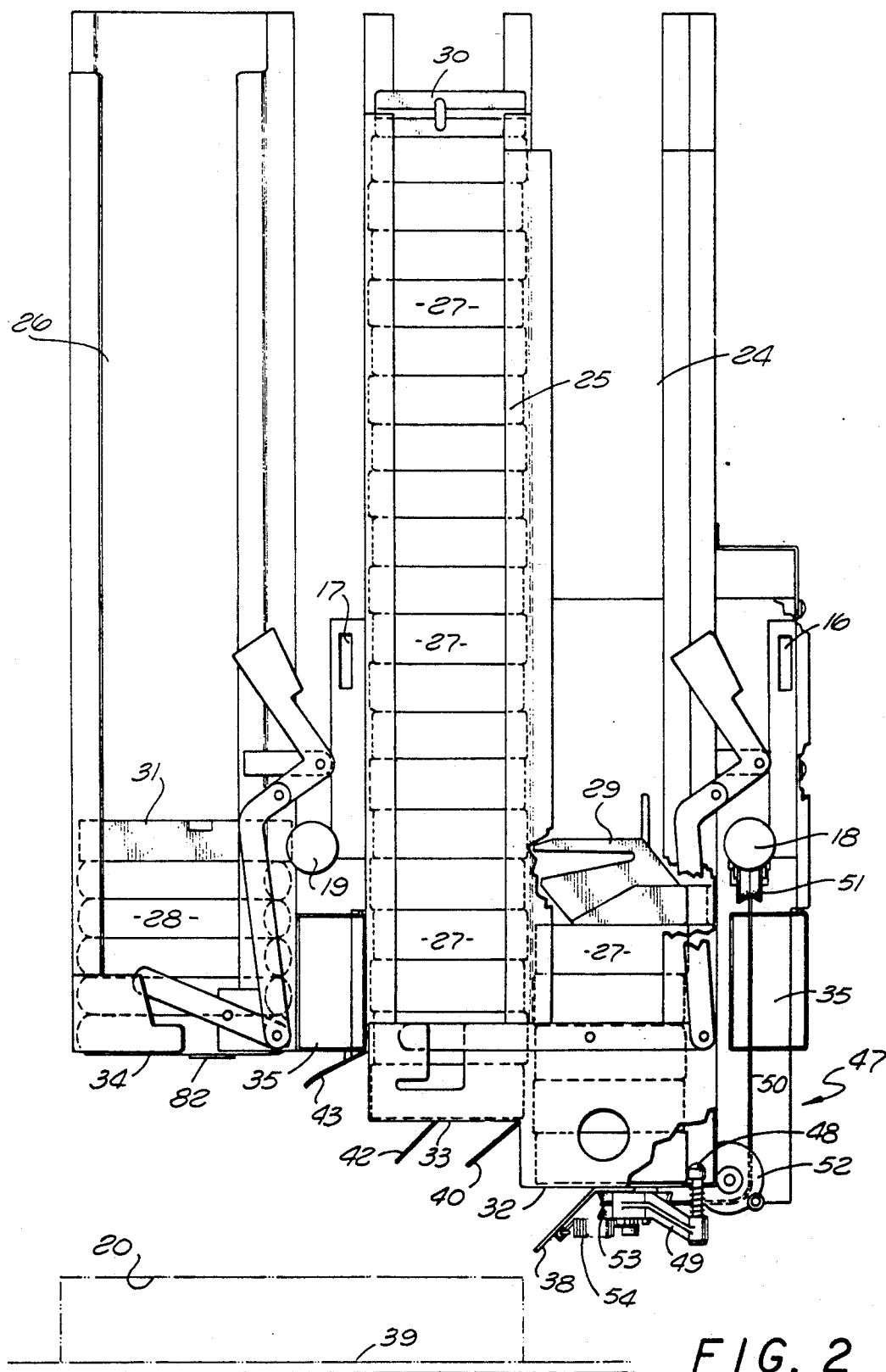
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Primary Examiner—H. Grant Skaggs**Attorney, Agent, or Firm—Harris, Kern, Wallen & Tinsley**[57] **ABSTRACT**

A dual dispenser for dispensing a first type of article from first and second stacks of the first articles and a second type of article from a stack of the second articles. The dispenser includes a housing having first and second magazines for holding the stacks of the first articles and a third magazine for holding the stack of the second articles, with a single article discharge slot in the housing and with means within the housing for movement of articles from each of the stacks to the discharge slot. The dispenser also includes means for moving the first type of articles from the bottom of the first stack and then from the bottom of the second stack, and from moving articles of the second type from the bottom of the third magazine. The dispensing may be controlled by coin mechanisms for each type of article or may be free, no-coin operation.

16 Claims, 6 Drawing Sheets





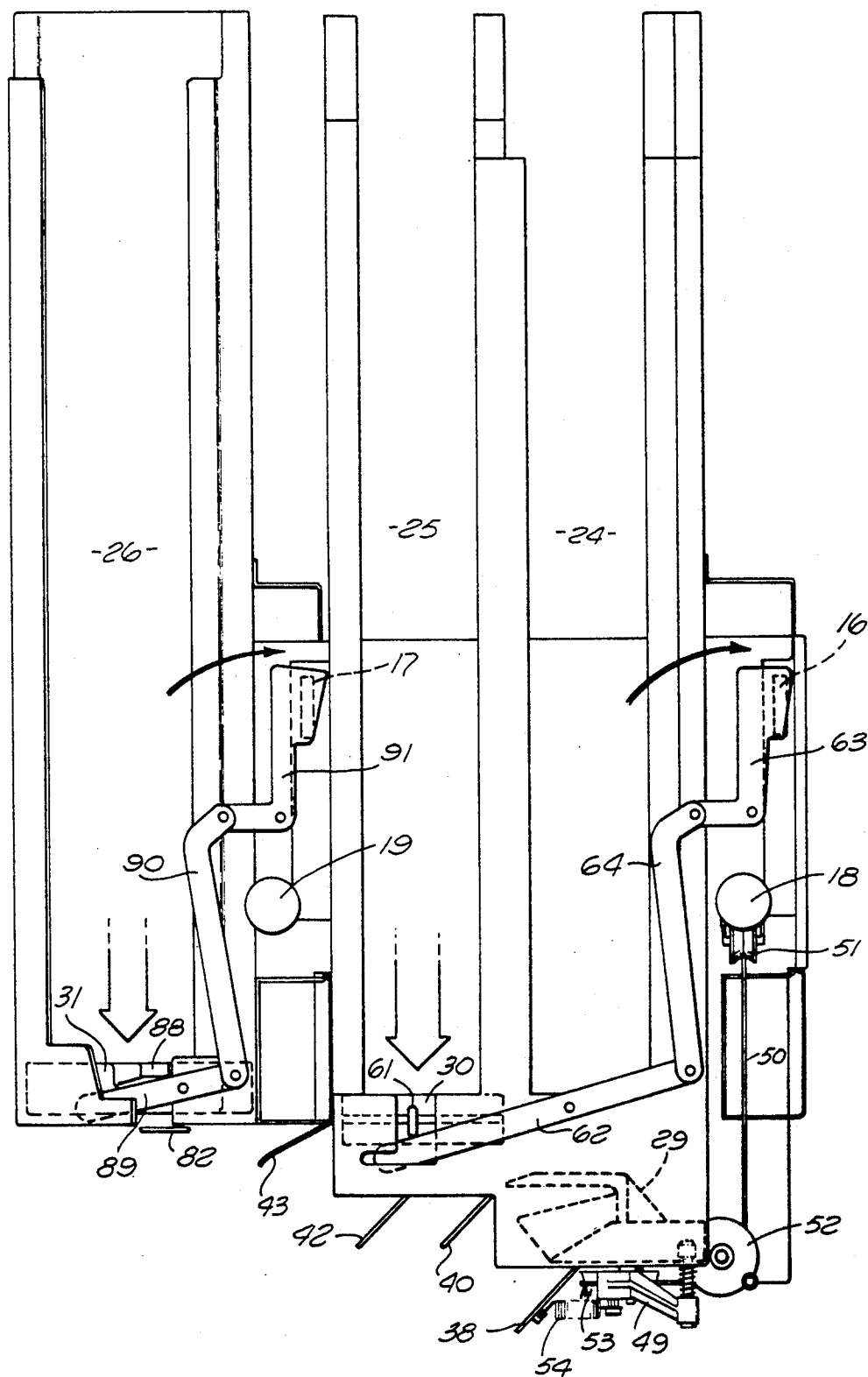
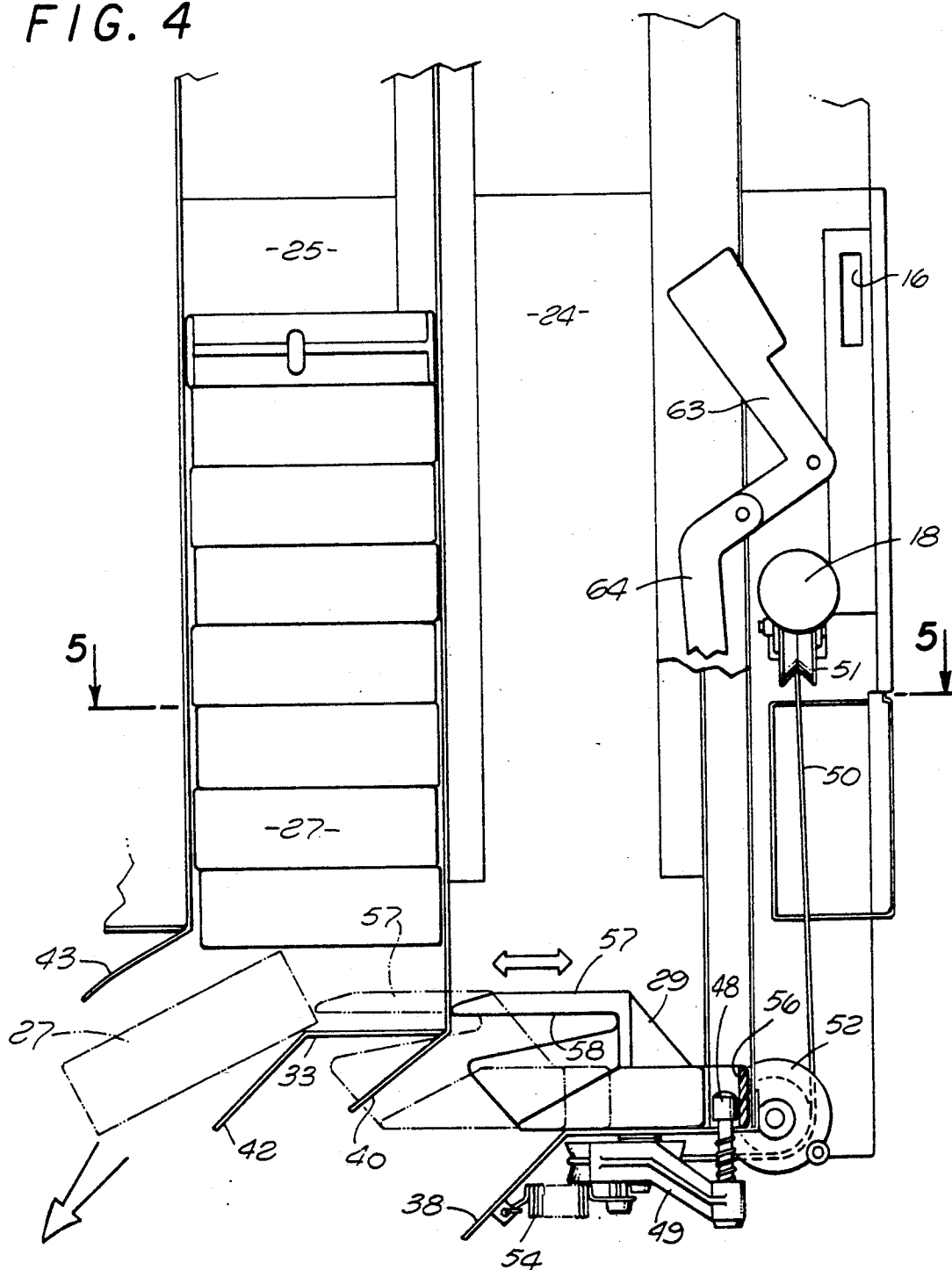


FIG. 3

FIG. 4



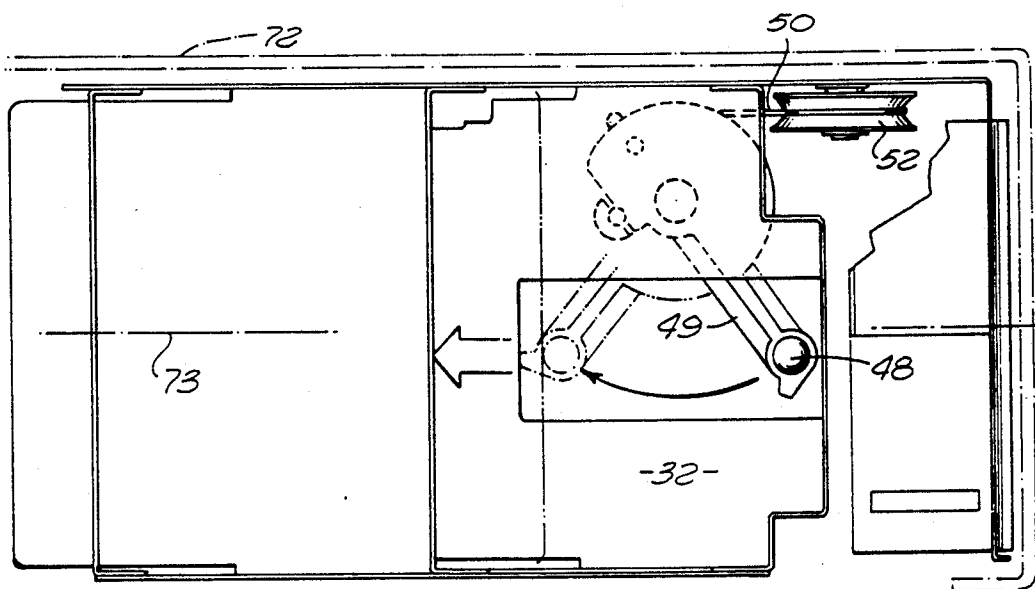


FIG. 5

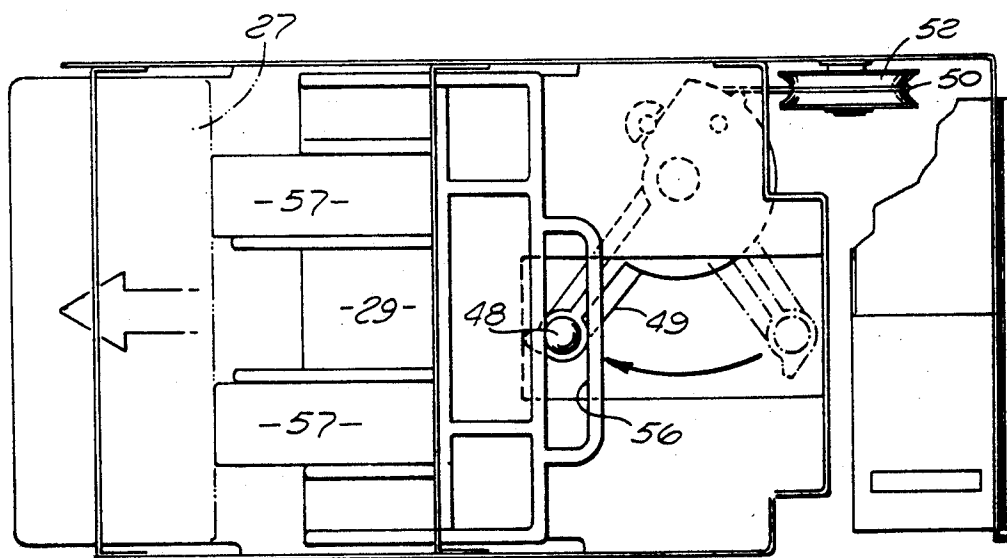
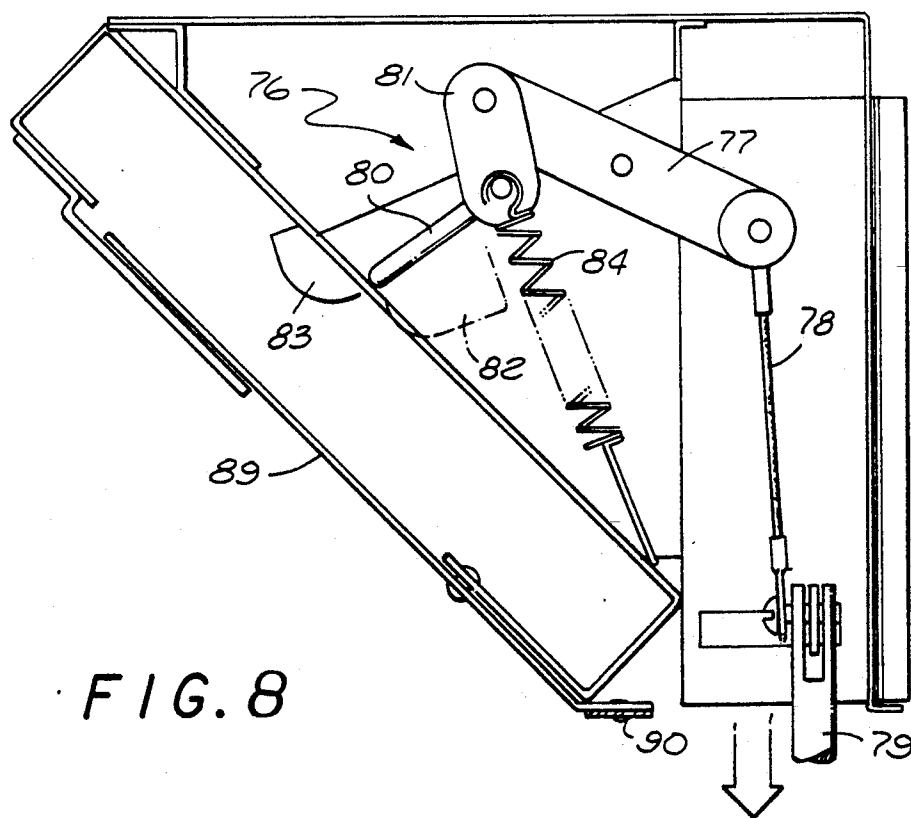
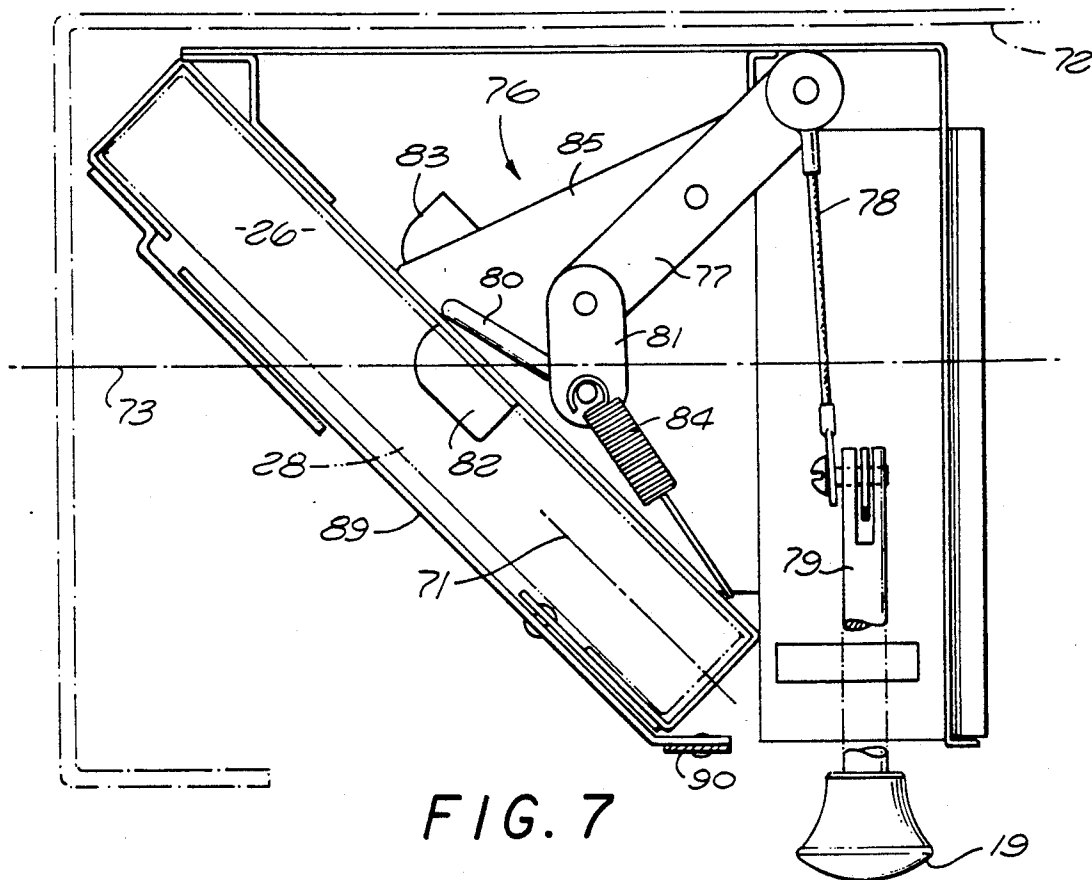


FIG. 6



DUAL DISPENSER

BACKGROUND OF THE INVENTION

The present invention relates to devices for dispensing articles, typically operated by a customer by depositing a coin and moving a lever or shaft or pushing a button. Some vending machines or dispensers are free standing, while others are flush mounted in walls. Space restrictions at vending locations place both frontal limitations and depth limitations on the dispensers. At the same time, it is highly desirable to utilize as much of the volume of the dispenser as possible for storing the articles to be dispensed, so that restocking activity is reduced. Also, it is desirable to be able to dispense more than one type of article from a single dispenser installation for more efficient use of space, installation requirements, and restocking activity.

A wide variety of dispenser configurations have been utilized in the past. It is an object of the present invention to provide a dispenser utilizing two magazines for holding the same article, with a single mechanism for emptying one magazine and then the other. It is another object of the invention to provide such a dispenser with an additional magazine for holding a different article, with a mechanism for emptying this magazine, and with both types of articles from the three magazines being discharged at a single outlet slot in the magazine housing.

It is a particular object of the invention to utilize such a configuration to obtain a compact design with a minimal frontal area and a minimal depth, while achieving a maximum article storage capacity within the overall volume of the dispenser.

Prior art dispenser mechanisms are known utilizing two magazines positioned side by side with articles being dispensed alternately from each magazine. This type of dispenser mechanism requires considerable volume and an overall housing with a depth in order of six to eight inches. One of the specific objects of the present invention is to provide a dispenser with a housing depth of only four inches, so that the dispensers can be mounted in a conventional wall construction, either recessed or flush.

These and other objects, advantages, features and results will more fully appear in the course of the following description.

The specific embodiment of the invention disclosed is a sanitary napkin and tampon vending machine wherein the napkins are individually packed in boxes of a shape and size similar to that of cigarette boxes and individual serving cereal boxes. The tampons are individually packed in a cigar shape, about 7/8 inches diameter and four inches long. However the dispenser of the invention is not limited to this specific purpose and can be utilized for dispensing candy, cigarettes and other articles.

SUMMARY OF THE INVENTION

A sanitary napkin and tampon vending machine. The napkin dispenser comprises two parallel vertical magazines for containing napkin boxes, and an ejection mechanism at the bottom which empties the first magazine and then the second magazine. A dummy box is placed on top of the articles in the second magazine and another dummy box is placed on top of the articles in the first magazine. The dummy boxes serve as weights and other control purposes; the dummy box in the first

magazine serves as part of the ejection mechanism for the second magazine when the first magazine is exhausted.

The dispensing mechanism includes a pusher plunger which is moved when a dispensing knob is pulled. When there are articles in the first magazine, the plunger moves, pushing the lowest article out of the magazine, down a slide and into a trough at the vending opening slot. When all articles have been dispensed from the first magazine, its dummy box rests on the bottom, with the plunger within an opening in the dummy box. The plunger now moves the dummy box and brings the pusher fingers in the dummy box into engagement with the lowest article in the second magazine pushing this article out and down the slide to the opening slot. When the second magazine is exhausted, a projection in the dummy box of the second magazine, engages a lever which in turn moves a flag in position over the coin slot.

The dispensing mechanism of the tampon magazine includes a lower plate and an upper plate both connected to a dispensing knob through a pivot arrangement. When the knob is pulled, the lower plate is moved out of a blocking position permitting the lowermost article to drop down to the dispensing opening slot. At the same time the upper plate is moved to support the remaining articles. When the knob is released, the lower plate and the upper plate move back to their original positions. A similar dummy box projection is used to move a flag over the second coin slot when the tampon magazine is empty.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a view of a wall of a washroom with the presently preferred embodiment of the dispenser of the invention mounted in the wall, showing the front face of the dispenser;

FIG. 2 is a front view of the dispenser of FIG. 1, with the front panel removed, showing the dispenser in the partly loaded condition;

FIG. 3 is a view similar to that of FIG. 2 showing the dispenser in the empty condition;

FIG. 4 is an enlarged partial view similar to that of FIGS. 2 and 3, showing a pair of magazines and illustrating the operation of the mechanism with the first magazine empty;

FIGS. 5 and 6 are sectional views taken along the line 5—5 of FIG. 4, illustrating the operation of the mechanism; and

FIGS. 7 and 8 are top views of the single magazine illustrating the operation of the mechanism.

DESCRIPTION OF THE PREFERRED EMBODIMENT

FIG. 1 shows a dispenser 10 mounted in a wall 11 of a washroom, which also includes a towel case 12, a basin 13 and a mirror 14. The dispenser is flush mounted in the wall with the dispenser front panel 15 closing the front of the dispenser housing. Coin slots 16, 17, customer operating knobs 18, 19, and an article discharge opening 20 are incorporated in the dispenser. Locks 21 provide for removal of the panel for access to the interior of the dispenser.

The dispenser includes magazines 24, 25 and 26 for holding stacks of articles and typically are manufactured in the conventional manner of sheet metal pieces welded or otherwise fastened together. Stacks of arti-

cles to be dispensed are loaded into each of the magazines. In the specific embodiment illustrated, boxes 27 of a first article, typically a sanitary napkin box, are loaded into the magazines 24 and 25, and cylindrical packages 28 of individual tampons are loaded into the magazine 26. Dummy boxes 29, 30, and 31 are positioned on top of the stacks in the respective magazines 24, 25, 26. The magazine 24 includes a bottom member 32, magazine 25 includes a bottom member 33, and magazine 26 includes a bottom member 34, with the stacks of articles resting on the respective bottom members. A coin box and coin detection mechanism 35 is provided for each coin slot and knob. Alternatively, the dispenser can be set for free, no-coin operation.

A plate 38 provides a discharge passage from the magazine 24 to the floor 39 at the discharge opening 20. Preferably, another plate 40 is positioned above the plate 38 to define the upper limit of the discharge passage. Plates 42, 43 provide a similar discharge passage for the magazine 25.

An actuating mechanism 47 (FIG. 2) provides for moving an article from the bottom of the stack in the magazine 24, into the discharge passage formed by the plates 38, 40, and onto the floor 39 at the discharge opening 20. In the preferred embodiment illustrated, the actuating mechanism includes a pusher member 48 carried on a swing arm 49 which is driven by a cable 50 running from the knob 18 over pulleys 51, 52, 53. Pulling on the knob 18 moves the swing arm from the position shown in solid lines in FIG. 5 to the position shown in phantom lines. When the knob is released, the arm 49 is returned to the position of FIGS. 2-4 and solid lines in FIG. 5 by a spring 54.

This operation is repeated until the magazine 24 is empty, with the dummy box 29 resting on the bottom of the magazine. A vertical slot 56 is provided in the dummy box 29 (FIGS. 4 and 6), with the pusher member 48 being positioned in the slot 56 when the dummy box is resting on the bottom of the magazine. The dummy box 29 has an upper finger or fingers 57 positioned above the bottom portion of the dummy box, defining a lateral slot 58. After the magazine 24 is empty, actuation of the knob 18 by the next customer causes the pusher member 48 to push the dummy box 29 from the position shown in solid lines in FIG. 4 to the position shown in phantom lines. When this occurs, the fingers 57 move into the magazine 25 above the bottom member 33, engaging the lowest article in the magazine 25 and pushing it into the discharge passage for dropping onto the floor 39 at the discharge opening 20. When the customer releases the knob 18, the spring 54 returns the swing arm 49 and the dummy box 29 to the normal position. In FIG. 6, the crank arm is shown in phantom lines in the normal position, with the dummy box and swing arm shown in solid lines in the position for pushing an article from the bottom of the stack in the magazine 25.

Dispensing of articles from the magazine 25 continues until this magazine is empty. At this time, the dummy box 30 rests on the bottom member of the magazine 25 and a boss 61 on the dummy box engages a lever 62 which is coupled to another lever 63 by a connecting arm 64. The lever 62 is rotated counterclockwise as shown in FIG. 3 and moves the upper end of the lever 63 into a position over the coin slot 16, to serve as a flag for preventing insertion of another coin.

The magazine 26 is rectangular in plan with a longitudinal axis 71 (FIG. 7), and the housing 72 in which

the magazines and actuating mechanisms are mounted also has a rectangular plan with a longitudinal axis 73 (FIGS. 5 and 7). The magazine 26 is oriented in the housing 72 with the longitudinal axis 71 oblique to the longitudinal axis 73, preferably at about 45 degrees. This orientation permits dispensing of an article 28 within a housing of limited width and limited depth. In particular, this permits construction of a dispenser with a depth of not more than 4 inches so that the dispenser can be installed in a conventional wall, while at the same time maintaining the conventional dispenser housing width of not more than 14½ inches and having three magazines therein.

An escapement mechanism 76 (FIGS. 7 and 8) provides for dropping the articles 28 one at a time from the magazine 26 onto the floor 39 at the discharge opening 20. The escapement mechanism includes a pivoted arm 77 driven by a link 78, typically a cable, from a shaft 79 of the knob 19, with the arm 77 driving a swing arm 80 about a vertical axis through another link 81. A lower plate 82 and an upper plate 83 are carried on the vertically oriented shaft of the swing arm 80. The plates 82, 83 are shown in the normal position in FIG. 7 and in the dispensing position in FIG. 8. The mechanism is moved from the position of FIG. 7 to the position of FIG. 8 by pulling on the knob 19 and, after the knob is released, the mechanism is returned from the position of FIG. 8 by a spring 84. The vertical shaft portion of the swing arm 80 is carried in a plate 85.

The magazine 26 has an opening at the bottom which permits the articles 28 to drop therethrough. When in a normal position, the lower plate projects into the open bottom of the magazine (FIG. 7), with the stack of articles resting on this plate. When moved to the dispensing position of FIG. 8, the upper plate 83 moves into position between the lowest article in the stack and next lowest article, while the lower plate 82 moves out of the magazine, to the position shown in FIG. 8. With this arrangement, the lowest article drops from the magazine with the remainder of the stack resting on the upper plate 83. When the knob is released, the mechanism returns to the position of FIG. 7 and the stack drops onto the lower plate 82. The lower and upper plates are mounted on the swing arm 80 in vertical spaced relation and an angularly spaced relation, with the vertical spacing depending upon the size of the article to be dispensed and with the angular spacing depending upon the amount of motion required for the lower plate to clear the magazine.

When the magazine 26 is empty, a boss 88 on the dummy box 31 engages a pivoted lever 89 which, through a link 90, moves a pivoted lever 91 to place a flag over the coin slot 17 (FIG. 3).

Thus it is seen that by positioning the actuating means 47 below the magazines 24, 25, the dispenser can be constructed with a horizontal area for dispensing the articles 27 which is not significantly larger than the horizontally area of the two magazines. Similarly, by orienting the magazine 28 obliquely and positioning the escapement mechanism 76 in one of the triangular areas adjacent the magazine, the horizontal area occupied by the magazine 26 and its dispensing mechanism is reduced. With this arrangement, three magazines can be incorporated in the space previously required for two magazines and more product can be dispensed from a given space. While two coin slots and actuating knobs are required for customer selection of the article to be dispensed, the front panel space requirement is reduced,

the need for the customer to choose between outlet slots is alleviated, and the front panel appearance is enhanced by the arrangement which directs articles from all three magazines to a single discharge slot.

I claim:

1. In a dispenser for dispensing articles from first and second stacks of articles, and having a first magazine for holding a first stack of articles resting on a first floor member, and a second magazine for holding a second stack of articles resting on a second floor member, the improvement including in combination:
 - a first dummy box for said first magazine for resting on said first stack;
 - a second dummy box for said second magazine for resting on said second stack; and
 - first actuating means for moving an article from the bottom of said first stack for passing under said second stack to a discharge position, with said actuating means including a pusher member pivotable about a vertical axis from a first position away from said first stack to a second position engaging a side of the lowest item in said first stack for moving said lowest item towards said second stack, and for engaging a side of said first dummy box as said lowest item of said first stack after articles are dispensed from said first stack.
2. A dispenser as defined in claim 1 including:
 - a third magazine for holding a third stack of articles; and
 - an escapement mechanism for releasing articles one at a time from the bottom of said third stack, said escapement mechanism including
 - a shaft mounted in said dispenser for rotation about a vertical axis,
 - upper and lower plates mounted on said shaft in vertical spaced relation and in angular spaced relation, and
 - second actuating means for rotating said shaft, said third magazine having an open bottom with said lower plate normally positioned at said open bottom for supporting said third stack and with said upper plate normally positioned out of said third magazine, with said upper plate movable into said third magazine between the lowest and the next lowest article in said third stack and with said lower plate movable out of said third magazine on rotation of said shaft to dispense the lowest article.
3. A dispenser as defined in claim 2 wherein said second actuating means includes means for reciprocating movement of said shaft about said vertical axis for moving said upper plate out of said third magazine and moving said lower plate into said third magazine after dispensing an article for permitting the remainder of said third stack to move downward onto said lower plate.
4. A dispenser as defined in claim 3 wherein said second actuating means includes a swing arm, a customer operated cable for rotating said swing arm in one direction, and spring means for rotating said swing arm in the opposite direction.
5. A dispenser as defined in claim 4 including a coin operated access mechanism for limiting customer operation of said swing arm.
6. A dispenser as defined in claim 5 wherein said coin operated access mechanism includes a coin slot, and including a lever mechanism positioned between said third magazine and said coin slot, and

a third dummy box for said third magazine for resting on said third stack and including a lever engaging means for engaging said lever mechanism when said third magazine is empty of articles with said third dummy box at said bottom of said third stack for actuating said lever mechanism to cover said coin slot.

7. A dispenser as defined in claim 2 wherein said third magazine is rectangular in plan with a first longitudinal axis, and including a housing for said dispenser which is rectangular with a second longitudinal axis, and means for positioning said third magazine in said housing with said first axis oblique to said second axis.

8. In a dispenser for dispensing articles from first and second stacks of articles, and having a first magazine for holding a first stack of articles resting on a first floor member, and a second magazine for holding a second stack of articles resting on a second floor member, the improvement including in combination:

- a first dummy box for said first magazine for resting on said first stack;
- a second dummy box for said second magazine for resting on said second stack; and
- actuating means for moving an article from the bottom of said first stack for passing under said second stack to a discharge position, with said actuating means including a pusher member movable from a first position away from said first stack to a second position engaging the lowest item in said first stack for moving said lowest item towards said second stack, said pusher member including means for engaging said first dummy box as said lowest item of said first stack after articles are dispensed from said first stack, and
- with said first dummy box including pushing means for engaging the lowest item in said second stack for moving said second stack lowest item toward said discharge position when said first dummy box is moved by said pusher member.

9. A dispenser as defined in claim 8 wherein said first dummy box includes:

- a bottom for sliding on said first magazine floor member;
- means defining a lateral slot above said bottom with said pushing means above said slot; and
- means defining a vertical slot opposite said lateral slot for engagement by said pusher member for reciprocating movement of said first dummy box by said pusher member whereby said second magazine floor member enters said first dummy box lateral slot with said first dummy box pushing means above said second magazine floor member.

10. A dispenser as defined in claim 8 wherein said pusher member includes a swing arm, a customer operated cable for rotating said swing arm in one direction, and spring means for rotating said swing arm in the opposite direction.

11. A dispenser as defined in claim 10 including a coin operated access mechanism for limiting customer operation of said swing arm.

12. A dispenser as defined in claim 11 wherein said coin operated access mechanism includes, a coin slot, and

- including a lever mechanism positioned between said second magazine and said coin slot, with said second dummy box including a lever engaging means for engaging said lever mechanism when

said second magazine is empty of articles with said second dummy box at said second magazine floor member for actuating said lever mechanism to cover said coin slot.

13. A dispenser as defined in claim 8 including a first discharge plate positioned obliquely between the bottom of said first magazine and said discharge position and a second discharge plate positioned above said first discharge plate for defining a discharge passage.

14. In a dispenser for dispensing articles from first and second stacks of articles, and having a first magazine for holding a first stack of articles resting on a first floor member, and a second magazine for holding a second stack of articles resting on a second floor member,

the improvement including in combination:

a first dummy box for said first magazine for resting on said first stack; and

actuating means for moving an article from the bottom of said first stack for passing to a discharge position, said actuating means including a pusher member movable from a first position away from said first stack to a second position engaging the lowest item in said first stack for moving said lowest item towards said second stack,

said first dummy box including:

pushing means for engaging the lowest item in said second stack for moving said second stack lowest item toward said discharge position when said first dummy box is moved by said pusher member,

a bottom for sliding on said first magazine floor member,

means defining a lateral slot above said bottom with said pushing means above said slot, and

means defining a vertical slot opposite said lateral slot for engagement by said pusher member for reciprocating movement of said first dummy box by said pusher member whereby said second magazine floor member enters said first dummy box lateral slot with said first dummy box pushing means above said second magazine floor member.

15. In a dispenser for dispensing first and second types of articles from a single location, and having first magazine means for holding a stack of the first articles and second magazine means for holding a stack of the second articles,

the improvement including in combination:

a housing having a single outlet slot with an article supporting floor within said housing at said slot,

and with said first and second magazine means positioned within said housing,

with one of said magazine means including means defining discharge passage means between the lower end of said one magazine means and said floor for guiding articles from said one magazine means to said floor, and

with the other of said magazine means positioned with its lower end above said floor for dropping articles onto said floor,

with said one magazine means including

a first magazine for holding a first stack of the first articles,

a second magazine for holding a second stack of the first articles, and further including

magazine delivery means for depositing articles into said discharge passage means for transfer from said first magazine to said floor, and when said first magazine is empty, for depositing articles from said second magazine into said discharge passage means to said floor, and

with said magazine discharge means including

a reciprocating pusher member for pushing the lowest article in said first magazine stack into said discharge passage means, and

a dummy box for positioning on the top of the stack of articles in said first magazine, said dummy box including means for engagement with said reciprocating pusher member for reciprocating said dummy box when the stack of articles in said first magazine is depleted, and

with said dummy box including means for engaging the lowest article in the stack in said second magazine for moving said lowest article from said second magazine into said discharge passage means when said dummy box is reciprocated.

16. A dispenser as defined in claim 15 wherein said other magazine means includes

a third magazine for said second type of articles, and wherein said magazine discharge means includes an escape mechanism for cyclically positioning a lower stack supporting plate at the bottom of the stack of articles in said third magazine and an upper stack supporting plate between the lowest and next lowest article in said stack for dropping said second type of articles one at a time from said third magazine to said article supporting floor.

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(12) **United States Patent**
Morad et al.

(10) **Patent No.:** **US 6,382,387 B1**
(45) **Date of Patent:** **May 7, 2002**

(54) **VENDING MACHINE HAVING A MECHANISM FOR PREVENTING A KNOB FROM TURNING AND ACCEPTING MONEY WHEN THE MACHINE IS OUT OF PRODUCT**

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(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

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(51) **Int. Cl.⁷** **G07F 11/00**

(52) **U.S. Cl.** **194/351; 194/350**

(58) **Field of Search** 194/350, 351; 221/6, 17, 274

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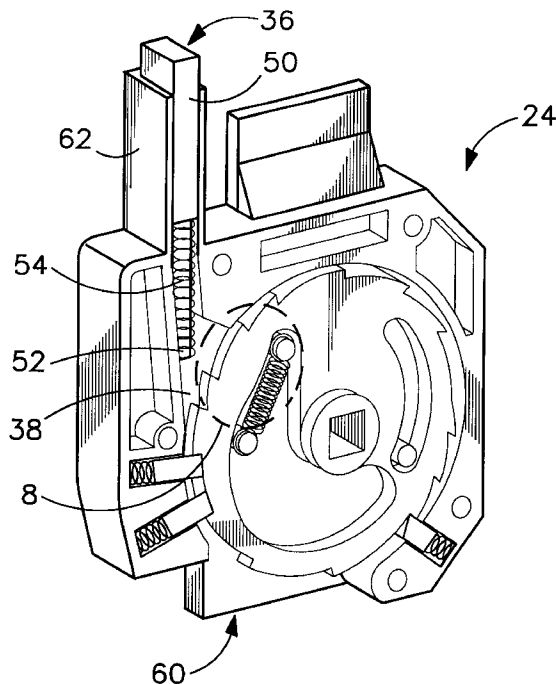
Primary Examiner—James R. Bidwell

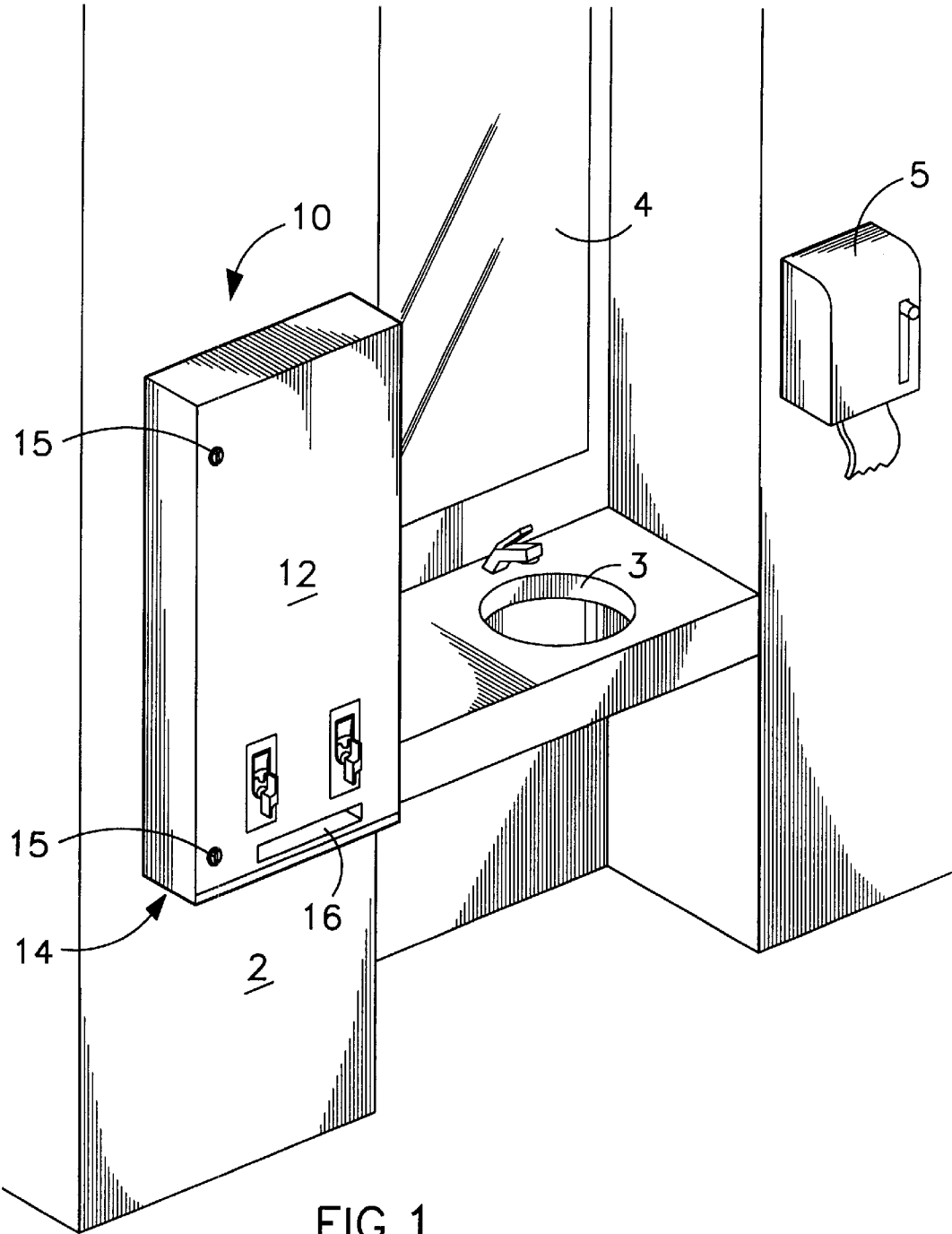
(74) *Attorney, Agent, or Firm*—Thomas I. Rozsa; Tony D. Chen

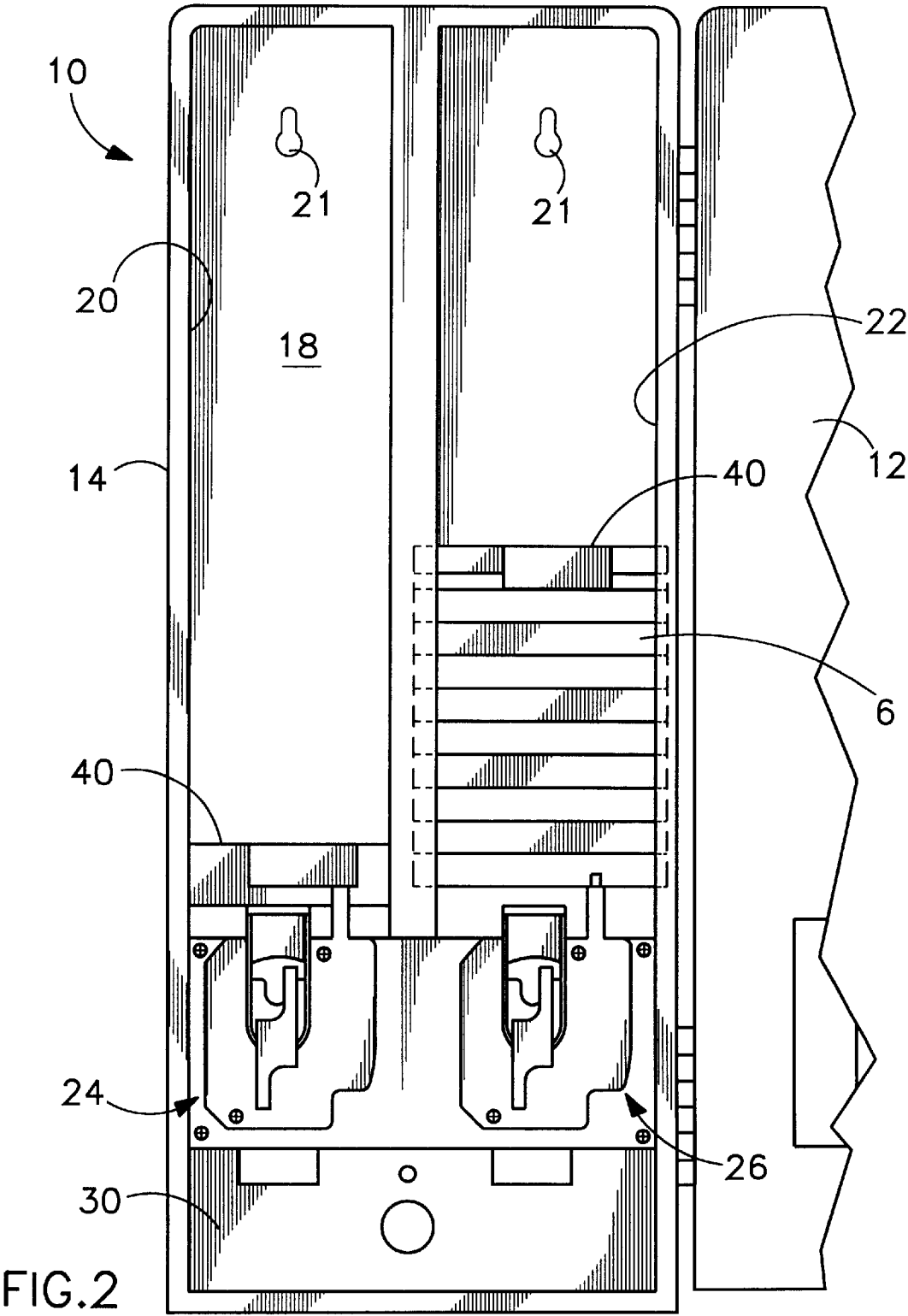
(57) **ABSTRACT**

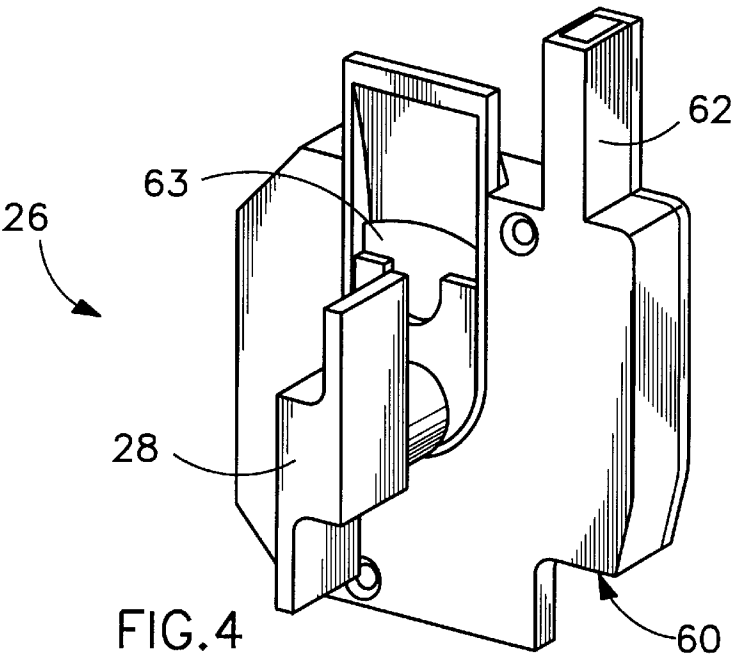
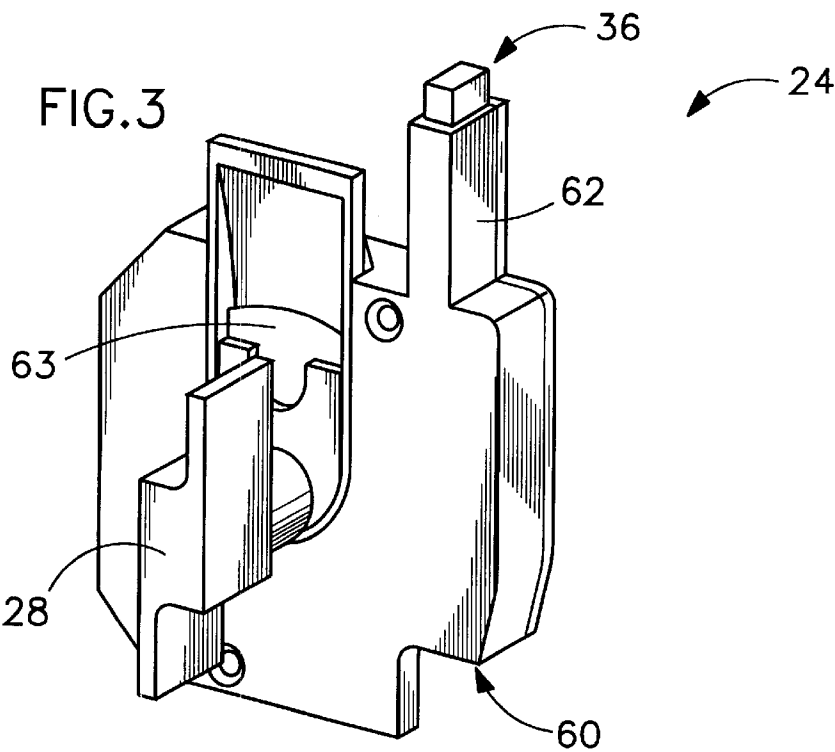
A manual currency operated vending machine includes a mechanism for preventing customers from depositing a currency into the vending machine when the machine is out of product. The vending machine comprises two parallel vertical magazines for containing flat packages and tubular packages. A currency operated dispensing mechanism includes a currency operating knob connected to a blocking mechanism through a rotatable shaft. The blocking mechanism is positioned at the bottom of each magazine for supporting the articles and preventing them sliding out, and also for allowing the lowest article out of the magazine and into a trough at the vending opening slot. When the currency operating knob is turned, it allows a currency to be deposited into the vending machine. The knob turns the rotatably shaft which in turn moves the blocking mechanism into an unobstructed position allowing the lowest article out of the magazine and into the trough at the vending opening slot. At the same time, the magazine supports the remaining articles thereto. When the knob is further turned, it moves back to its initial position, thereby blocking the next product from being dispensed. The currency operated dispensing mechanism also has a spring-biased blocking member located at the top of the mechanism and when depressed blocks a passageway and prevents a currency from being deposited into the vending machine.

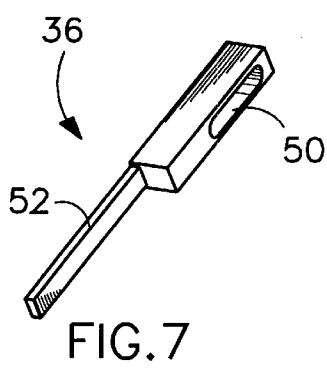
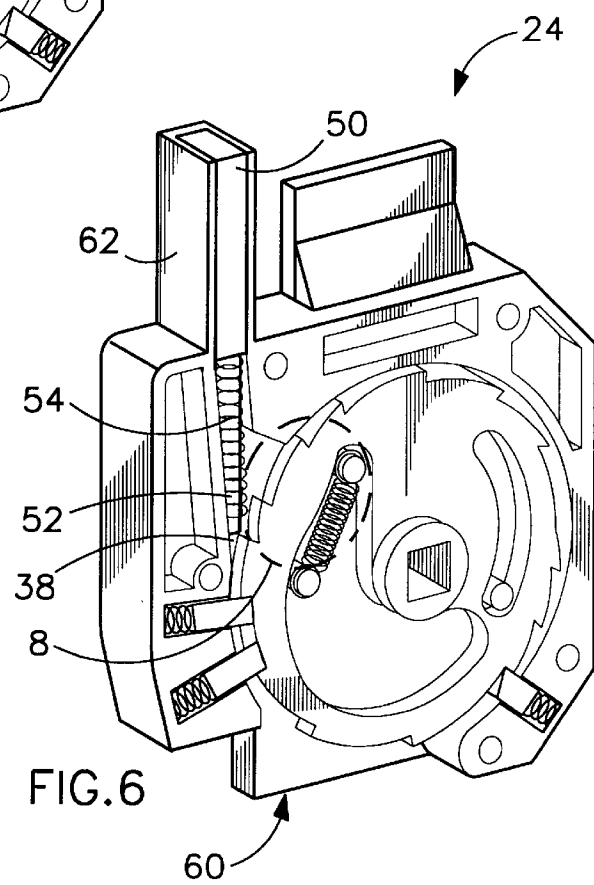
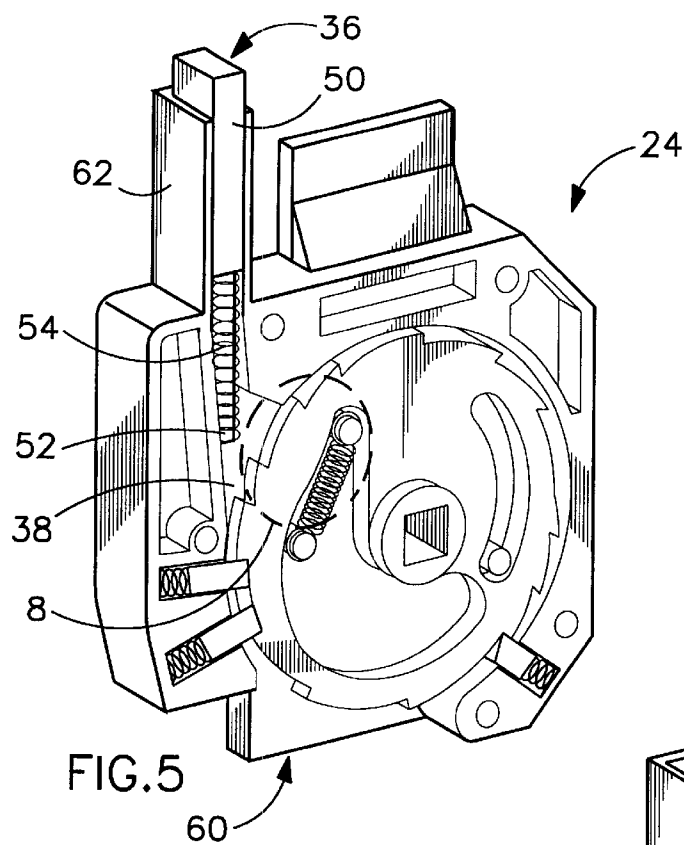
19 Claims, 5 Drawing Sheets

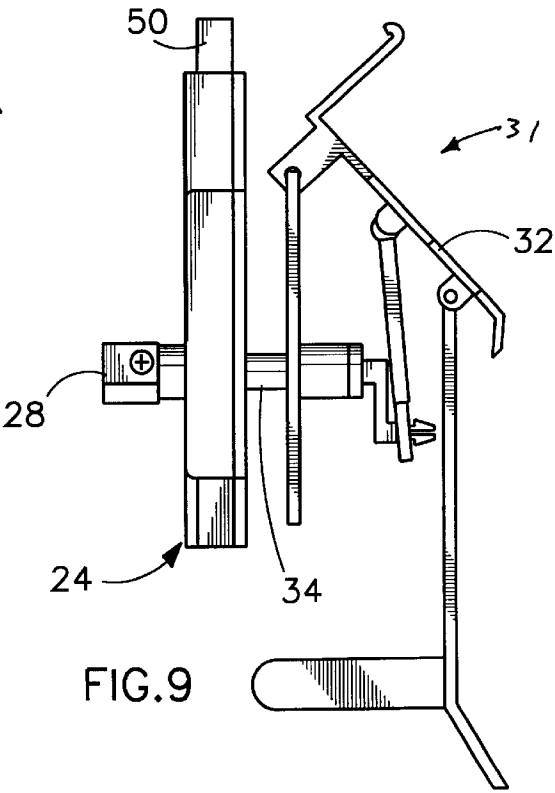
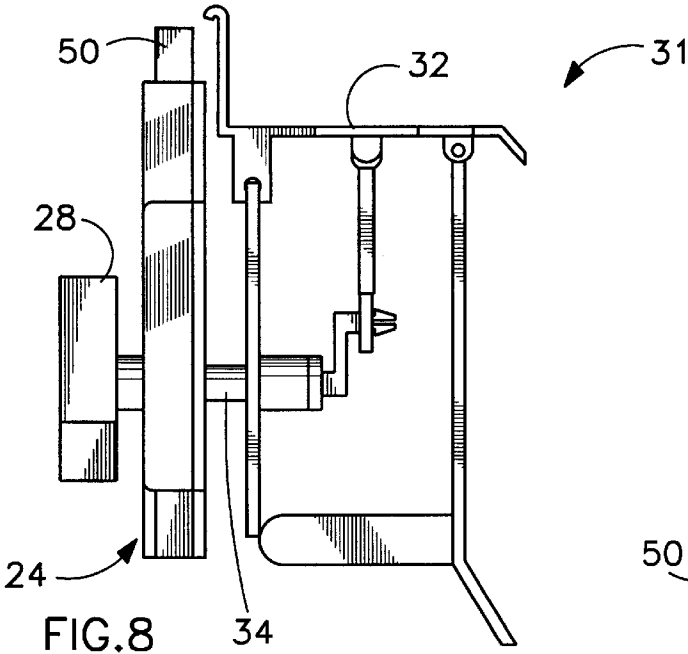












**VENDING MACHINE HAVING A
MECHANISM FOR PREVENTING A KNOB
FROM TURNING AND ACCEPTING MONEY
WHEN THE MACHINE IS OUT OF
PRODUCT**

BACKGROUND OF THE INVENTION

1. Field of the Invention

The present invention generally relates to the field of devices for dispensing products, typically operated by a customer depositing a coin and turning a lever or shaft or pushing a button. More particularly, the present invention relates to the field of vending machines having means for preventing a customer from depositing a coin when all product has been sold and the machine is empty and has no more product to dispense.

2. Description of the Prior Art

Specifically, manual vending machines are well known in the art. These manual vending machines are coin operated and gravity fed. One of the disadvantages with these manual vending machines is that they do not have a mechanism for preventing the coin operated knob from accepting the coin when the machine is empty and has no more product to dispense. Further, when customers deposit a coin into the coin operated knob and turn the knob expecting to receive the product from the vending machine and do not receive it, they usually get angry and sometimes break the vending machine to try to get the product or receive their money back. It is very costly to the owners of vending machines to replace the broken vending machine.

The following five (5) prior art patents are found to be pertinent to the field of the present invention:

1. U.S. Pat. No. 5,167,345 issued to Bleeker on Dec. 1, 1992 for "Dual Dispenser" (hereafter the "Bleeker Patent");
2. U.S. Pat. No. 5,351,840 issued to Visco et al. on Oct. 4, 1995 for "Combined Chalk And Eraser Dispenser" (hereafter the "Visco Patent");
3. U.S. Pat. No. 5,555,965 issued to Mishina on Sep. 17, 1996 for "Battery Operated Vending Machine For Dispensing Cylindrical And Tetrahedron-Shaped Objects" (hereafter the "Mishina Patent");
4. U.S. Pat. No. 5,752,622 issued to Abell on May 19, 1998 for "Feminine Protection Dispenser" (hereafter the "Abell Patent"); and
5. U.S. Design Pat. No. 371,707 issued to Miles on Jul. 16, 1996 for "Dispenser For Sanitary Products" (hereafter the "Miles Patent").

The Bleeker Patent discloses a dual dispenser for dispensing a first type of article from first and second stacks of the first articles and a second type of article from a stack of the second articles. The dispenser includes a housing with first and second magazines for holding the stacks of the first articles and a third magazine for holding the stack of the second articles, with a single article discharge slot in the housing and with means within the housing for movement of articles from each of the stacks to the discharge slot. The Bleeker device is a very complicated device. Essentially, this is a dispenser which dispenses flat type articles through a single slot opening.

The Visco Patent discloses a combined chalk and eraser dispenser. It comprises an eraser retaining means which has a dispensing opening defined in a lower forward portion and a chalk receptacle for chalk pieces of a selected chalk length attached to the eraser retaining means. The chalk receptacle

has a rear vertical wall and a forward opening. Essentially, this is a dispenser for dispensing rectangular chalkboard erasers and chalks.

The Mishina Patent discloses a battery operated vending machine for dispensing cylindrical and tetrahedron-shaped objects. It comprises a rotary dispensing mechanism for dispensing cylindrical objects including a product stack of cylindrical objects which feeds into the rotary dispensing assembly which feeds the cylindrical objects into a dispensing area for access by the consumer. The vending machine also comprises a plunger dispenser assembly for dispensing tetrahedron-shaped objects into the dispensing area. The vending machine further comprises a sensor for sensing product depletion of product stacks above each dispenser, actuators for displaying "sold-out" signs for each dispenser when there is no more product in the dispenser and a mechanism for blocking a coin slot when there is no more product in the dispenser.

The Abell Patent discloses a feminine protection dispenser. It comprises a single light weight vertically disposed housing used to store and allow dispersal of at least two different personal feminine hygiene articles. At the housing's upper section, there is a toilet paper dispenser and at its lower section, a loading area for tampons or sanitary napkins.

The Miles Patent discloses a dispenser for sanitary products. The Miles Patent is not a coin operated dispenser.

It is desirable to provide a manual coin operated vending machine which includes a mechanism for preventing customers from depositing a coin into the vending machine when the machine is out of product.

SUMMARY OF THE INVENTION

The present invention is a manual vending machine or dispenser which includes a mechanism for preventing customers from depositing currency into the vending machine when the machine has no more product to be purchased. The vending machine dispenses sanitary napkins which are in a flat package and tampons which are in a tubular package.

The vending machine comprises two parallel side by side vertical magazines for containing flat packages and tubular packages. A currency operated dispensing mechanism includes a currency operated knob connected to a blocking mechanism through a rotatable shaft. The blocking mechanism is positioned at the bottom of each magazine for supporting the products and preventing them from sliding out, and also for allowing the lowest product to be dispensed out of the magazine and into a trough at the vending opening slot. When the currency operated knob is turned, it allows a currency to be deposited into a currency receiving compartment in the vending machine. The knob turns the rotatable shaft which in turn moves the blocking mechanism into an unobstructed position allowing the lowest product out of the magazine and into the trough at the vending opening slot. At the same time, the magazine supports the remaining products therein. When the knob is further turned, it turns back to its initial position, where the blocking mechanism moves back to its initial position (the blocking position).

The currency operated dispensing mechanism also has a spring-biased blocking means located at the top of the currency operated dispensing mechanism and when depressed blocks a passageway and prevents a currency from being accepted by the vending machine.

A weight supporting device is placed on top of the products in each magazine and serves as a weight for retaining the products in the magazine and also serves as an

actuating means which depresses the spring-biased blocking means and blocks the passageway to prevent a customer from depositing currency into the vending machine when the machine is out of product. The weight supporting device only comes in contact with and actuates the spring biased blocking means when there is no more product between the weight support device and the spring biased blocking means.

It is therefore an object of the present invention to provide a reliable, easily operated vending machine which requires little maintenance other than periodic refilling with product packages.

It is a further object of the present invention to provide a vending machine which includes a mechanism for preventing customers from depositing a currency into the vending machine when the machine is out of product.

Further novel features and other objects of the present invention will become apparent from the following detailed description, discussion and the appended claims, taken in conjunction with the drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

Referring particularly to the drawings for the purpose of illustration only and not limitation, there is illustrated:

FIG. 1 is an illustration of a wall of a washroom with the present invention vending machine mounted to the wall, showing the front of the vending machine;

FIG. 2 is a front plan view of the present invention vending machine, with the front panel opened, showing the interior of the vending machine with one of the magazines empty and a weight supporting device engaged with a spring-biased blocking means, and the other one of the magazines in the partly loaded condition and another weight supporting device not engaged with a spring-biased blocking means;

FIG. 3 is a front perspective view of a currency operated dispensing mechanism of the present invention vending machine, showing the spring-biased blocking means in its deactivated position;

FIG. 4 is a front perspective view of the currency operated dispensing mechanism shown in FIG. 3, showing the spring-biased blocking means in its activated position;

FIG. 5 is a rear perspective view of the currency operated dispensing mechanism of the present invention vending machine, showing the spring-biased blocking means in its deactivated position;

FIG. 6 is a rear perspective view of the currency operated dispensing mechanism shown in FIG. 5, showing the spring-biased blocking means in its activated position;

FIG. 7 is a perspective view of the spring-biased blocking means;

FIG. 8 is a side elevational view of the currency operated dispensing mechanism used in conjunction with a blocking mechanism of the present invention vending machine, showing the blocking mechanism in its blocking and supporting position; and

FIG. 9 is a side elevational view of the currency operated dispensing mechanism used in conjunction with the blocking mechanism of the present invention vending machine, showing the blocking mechanism in its released and unsupported position.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

Although specific embodiments of the present invention will now be described with reference to the drawings, it

should be understood that such embodiments are by way of example only and merely illustrative of but a small number of the many possible specific embodiments which can represent applications of the principles of the present invention. Various changes and modifications obvious to one skilled in the art to which the present invention pertains are deemed to be within the spirit, scope and contemplation of the present invention as further defined in the appended claims.

Referring to FIG. 1, there is illustrated at 10 the present invention manual vending machine mounted to a wall 2 of a washroom or the like, which also includes a basin 3, a mirror 4 and a towel holder 5. The vending machine 10 may dispense flat packages and tubular packages, preferably sanitary napkins which are in a flat package and tampons which are in a tubular package. The vending machine 10 has a front panel 12 which is hingeably connected to a dispenser housing 14 for closing the front of the housing 14. A pair of locks 15 are provided for locking and unlocking the front panel 12 to the housing 14 to access the interior of the vending machine 10. The front panel 12 has a product discharge opening 16 incorporated in the vending machine 10.

Referring to FIG. 2, there is shown at 10 the present invention vending machine with the front panel 12 opened showing the interior 18 of the housing 14. The vending machine 10 comprises two parallel side by side vertical gravity feed magazines 20 and 22 for respectively containing stacks of flat packages and tubular packages. The magazines 20 and 22 are manufactured in the conventional manner of sheet metal pieces welded or otherwise fastened together. Stacks of packages 6 to be dispensed are loaded into each of the magazines 20 and 22. As illustrated, only the magazine 22 is partly loaded with the packages 6. There are provided two mounting apertures 21 for mounting the vending machine to the wall 2.

There are shown two side by side currency operated dispensing mechanisms 24 and 26 which are respectively located at the bottom of the magazines 20 and 22. These currency operated dispensing mechanisms 24 and 26 are conventional in the art except for the improvement of a mechanism for preventing customers from depositing a currency into the vending machine 10 when the magazine is out of product.

Since the left currency operated dispensing mechanism 24 is substantially identical to the right currency operated dispensing mechanism 26, and to the extent they are, only the left currency operated dispensing mechanism 24 will be described in detail, unless otherwise explicitly indicated.

Referring to FIGS. 3, 4, 5, 6, 8 and 9, the currency operated dispensing mechanism 24 has a housing 60 which includes a top hollow protruding structure 62, a currency or currency slot 63 for receiving a currency 8 and a currency operated knob 28 for rotating the currency 8 into a passageway 38 and into a currency receiving compartment 30 (see FIG. 2). Upon receiving the currency 8, a product 6 is dispensed from the vending machine 10. The currency operated knob 28 is connected to a blocking mechanism 31 through a rotatable shaft 34. The blocking mechanism 31 is positioned at the bottom of each magazine for preventing products from sliding out, and also for allowing the lowest product to be dispensed out of the magazine and into the product discharge opening 16 (see FIG. 1). The blocking mechanism 31 is conventional in the art and will only be described in general terms. The blocking mechanism 31 has a blocking plate 32 which prevents the products from sliding

out. When the currency operated knob 28 is turned, it allows the currency 8 to be accepted into the currency receiving compartment 30 of the vending machine 10. The knob 28 turns the rotatable shaft 34 which in turn moves the blocking plate 32 into an unobstructed position (see FIG. 9) allowing the lowest product to be dispensed out of the magazine and into the trough at the discharge opening 16 of the vending machine 10. At the same time, the magazine supports the remaining products therein. When the knob 28 is further turned clockwise back to its initial position, the blocking plate 32 moves back to its initial position (the blocking position, see FIG. 8) and thereby supports the next product to be dispensed and prevents it from being dispensed until the next coin is inserted and the knob turned.

Referring to FIGS. 3, 5, 6 and 7, there is provided a spring-biased blocking means 36 which is installed into the top hollow protruding structure 62 of the currency operated dispensing mechanism 24 and when depressed blocks the passageway 38 and prevents the currency 8 (shown as dashed lines in FIGS. 5 and 6) from being deposited into the currency receiving compartment 30 of the vending machine 10. The spring-biased blocking means 36 includes a depressable portion 50 partially extending out from the hollow protruding structure 62 of the currency operated dispensing mechanism 24 and a blocking portion 52 located within the housing 60 of the currency operated dispensing mechanism 24. The depressable portion 50 is biased upwardly by spring means 54 which is installed within the protruding structure 62.

Referring again to FIG. 2, there is provided a weight supporting device 40 which is positioned on top of the products 6 in each magazine and serves as a weight for retaining the products 6 in the magazine and also serves as an actuating means which depresses the depressable portion 50 of the spring-biased blocking means 36 and blocks the passageway 38 to prevent a customer from depositing the currency 8 into the vending machine 10 when a magazine is out of product. The weight 40 only comes in contact with the spring biased blocking means 36 when the magazine is out of product.

The present invention conforms to conventional forms of manufacture or any other conventional way known to one skilled in the art, and is of simple construction and is easy to use.

Defined in detail, the present invention is a vending machine for dispensing a product, comprising: (a) a housing having a first gravity feed magazine for containing a first stack of products resting on a first blocking plate and a second gravity feed magazine for containing a second stack of products resting on a second blocking plate; (b) a first weight supporting device positioned within the first magazine and on top of the first stack of products for retaining the first stack of products thereto; (c) a second weight supporting device positioned within the second magazine and on top of the second stack of products for retaining the second stack of products thereto; (d) a pair of currency operated mechanisms each respectively located at a bottom of the first and second magazines, each mechanism having a currency slot for accepting currency and a rotatable knob for rotating the currency into a passageway and into a currency receiving compartment and upon receiving the currency, a respective one of the first and second blocking plates is moved out of the way to dispense a product from a respective one of the first and second magazines; and (e) two spring biased blocking means with a respective one spring-biased blocking means respectively installed on top of the each currency operated mechanism and located adjacent to the

passageway, each respectively spring-biased blocking means having a depressable portion partially extending out from the each currency operated mechanism and biased upwardly by a spring and a blocking portion located within the each currency operating mechanism, such that when a respective one of the first and second weight supporting devices depresses the depressable portion, the blocking portion is pushed into and blocks the passageway to prevent the currency from being accepted by the vending machine when the machine is out of product; (f) whereby when the depressable portion of the spring-biased blocking means is depressed, the blocking portion blocks the passageway into the currency receiving compartment of the vending machine when the machine is out of product.

Defined broadly, the present invention is a vending machine for dispensing a product, comprising: (a) a housing having at least one gravity feed magazine for containing a stack of products resting on a blocking plate; (b) a weight supporting device positioned within the at least one magazine and on top of the stack of products for retaining the stack of products thereto; (c) a currency operated mechanism located at a bottom of the at least one magazine and having a currency slot for accepting currency and a rotatable knob for rotating the currency into a passageway and into a currency receiving compartment and upon receiving the currency, the blocking plate is moved out of the way to dispense a product from the at least one gravity feed magazine; and (d) spring-biased blocking means installed on top of the currency operated mechanism and located adjacent to the passageway, the spring-biased blocking means having a depressable portion partially extending out from the currency operated mechanism and biased upwardly by spring means and a blocking portion located within the currency operated mechanism, such that when the weight supporting device depresses the depressable portion, the blocking portion is pushed into and blocks the passageway to prevent the currency from being accepted by the vending machine when there is no more product in the magazine; (e) whereby when the depressable portion of the spring-biased blocking means is depressed, the blocking portion blocks the passageway into the currency receiving compartment of the vending machine when the machine is out of product.

Defined more broadly, the present invention is a dispenser for dispensing a product, comprising: (a) a housing having at least one magazine for containing a stack of products resting on supporting means; (b) means for accepting currency and upon receiving the currency, the supporting means is moved out of the way to dispense a product from the at least one magazine; (c) means for blocking a passageway to prevent the currency from being accepted by the accepting currency means; and (d) means for activating the blocking means when the at least one magazine is out of product; (e) whereby when the blocking means is activated, the blocking means blocks the passageway to prevent the currency from being accepted by the dispenser when the dispensing is out of product.

Defined even more broadly, the present invention is a currency operated mechanism used in conjunction with a vending machine and having a housing for accommodating a currency slot for accepting currency and a rotatable knob for rotating the currency into a passageway and into a currency receiving compartment and upon receiving the currency, a product is dispensed from the vending machine, the currency operated mechanism comprising spring-biased blocking means installed on top of the housing and located adjacent to the passageway, the spring-biased locking means having a depressable portion partially extending out from

the housing and biased upwardly by spring means and a blocking portion located within the housing, where upon depressing the depressable portion, the blocking portion is pushed into and blocks the passageway to prevent the currency from being accepted by the vending machine when the machine is out of product.

Defined even further more broadly, the present invention is a currency operated mechanism used in conjunction with a dispenser and having a housing for accommodating a currency slot for accepting currency and a knob for rotating the currency into a passageway and into the vending machine and upon receiving the currency, a product is dispensed therefrom, the currency operated mechanism comprising means for blocking the passageway to prevent the currency from being accepted by the vending machine when the machine is out of product.

Of course the present invention is not intended to be restricted to any particular form or arrangement, or any specific embodiment, or any specific use, disclosed herein, since the same may be modified in various particulars or relations without departing from the spirit or scope of the claimed invention hereinabove shown and described of which the apparatus or method shown is intended only for illustration and disclosure of an operative embodiment and not to show all of the various forms or modifications in which this invention might be embodied or operated.

The present invention has been described in considerable detail in order to comply with the patent laws by providing full public disclosure of at least one of its forms. However, such detailed description is not intended in any way to limit the broad features or principles of the present invention, or the scope of the patent to be granted. Therefore, the invention is to be limited only by the scope of the appended claims.

What is claimed is:

1. A vending machine for dispensing a product, comprising:
 - a. a housing having a first gravity feed magazine for containing a first stack of products resting on a first blocking plate and a second gravity feed magazine for containing a second stack of products resting on a second blocking plate;
 - b. a first weight supporting device positioned within said first magazine and on top of said first stack of products for retaining said first stack of products thereto;
 - c. a second weight supporting device positioned within said second magazine and on top of said second stack of products for retaining said second stack of products thereto;
 - d. a pair of currency operated mechanisms each respectively located at a bottom of said first and second magazines, each mechanism having a currency slot for accepting currency and a rotatable knob for rotating the currency into a passageway and into a currency receiving compartment and upon receiving the currency, a respective one of said first and second blocking plates is moved out of the way to dispense a product from a respective one of said first and second magazines; and
 - e. two spring biased blocking means with a respective one spring-biased blocking means respectively installed on top of said each currency operated mechanism and located adjacent to said passageway, each respective spring-biased blocking means having a depressable portion partially extending out from said each currency operated mechanism and biased upwardly by a spring and a blocking portion located within said each cur-

rency operating mechanism, such that when a respective one of said first and second weight supporting devices depresses the depressable portion, the blocking portion is pushed into and blocks said passageway to prevent said currency from being accepted by said vending machine when that respective magazine is out of product;

f. whereby when said depressable portion of said spring-biased blocking means is depressed, said blocking portion blocks said passageway into said currency receiving compartment of said vending machine when the magazine is out of product.

2. The vending machine in accordance with claim 1, further comprising mounting apertures for mounting said vending machine to a wall.

3. The vending machine in accordance with claim 1 wherein said first stack of products are sanitary napkins which are in a flat package and said second stack of products are tampons which are in a tubular package.

4. A vending machine for dispensing a product, comprising:

a. a housing having at least one gravity feed magazine for containing a stack of products resting on a blocking plate;

b. a weight supporting device positioned within said at least one magazine and on top of said stack of products for retaining said stack of products thereto;

c. a currency operated mechanism located at a bottom of said at least one magazine and having a currency slot for accepting currency and a rotatable knob for rotating the currency into a passageway and into a currency receiving compartment and upon receiving the currency, said blocking plate is moved out of the way to dispense a product from said at least one gravity feed magazine; and

d. spring-biased blocking means installed on top of said currency operated mechanism and located adjacent to said passageway, the spring-biased blocking means having a depressable portion partially extending out from said currency operated mechanism and biased upwardly by spring means and a blocking portion located within said currency operated mechanism, such that when said weight supporting device depresses the depressable portion, the blocking portion is pushed into and blocks said passageway to prevent said currency from being accepted by said vending machine when there is no more product in the magazine;

e. whereby when said depressable portion of said spring-biased blocking means is depressed, said blocking portion blocks said passageway into said currency receiving compartment of said vending machine when the magazine is out of product.

5. The vending machine in accordance with claim 4, further comprising mounting apertures for mounting said vending machine to a wall.

6. The vending machine in accordance with claim 4 wherein said stack of products are sanitary napkins which are in a flat package.

7. The vending machine in accordance with claim 4 wherein said stack of products are tampons which are in a tubular package.

8. A dispenser for dispensing a product, comprising:

a. a housing having at least one magazine for containing a stack of products resting on supporting means;

b. means for accepting currency and upon receiving the currency, said supporting means is moved out of the way to dispense a product from said at least one magazine;

- c. means for blocking a passageway to prevent the currency from being accepted by said accepting currency means, said blocking means including a spring-biased blocking structure having a depressable portion partially extending out from said accepting currency means and biased upwardly by spring means and a blocking portion, such that when said activating means depresses the depressable portion, the blocking portion is pushed into and blocks said passageway to prevent said currency from being accepted by said dispenser when the dispenser is out of product; and
 - d. means for activating said blocking means when said at least one magazine is out of product;
 - e. whereby when said blocking means is activated, said blocking means blocks said passageway to prevent said currency from being accepted by said dispenser when said dispenser is out of product.
9. The dispenser in accordance with claim 8, further comprising mounting apertures for mounting said dispenser to a wall.
10. The dispenser in accordance with claim 8, wherein said accepting currency means includes a currency operated dispensing mechanism.
11. The dispenser in accordance with claim 8 wherein said stack of products are tampons which are in a tubular package.
12. The dispenser in accordance with claim 8, wherein said activating means is a weight supporting device positioned within said at least one magazine and on top of said stack of products for retaining said stack of products thereto, and only comes in contact with said activating means when the dispenser is out of product.
13. The dispenser in accordance with claim 8 wherein said stack of products are sanitary napkins which are in a flat package.
14. A dispenser for dispensing a product, comprising:
- a. a housing having at least one magazine for containing a stack of products resting on supporting means;
 - b. means for accepting currency and upon receiving the currency, said supporting means is moved out of the way to dispense a product from said at least one magazine;

- c. means for blocking a passageway to prevent the currency from being accepted by said accepting currency means; and
 - d. means for activating said blocking means when said at least one magazine is out of product, said activating means including a weight supporting device positioned within said at least one magazine and on top of said stack of products for retaining said stack of products thereto, and only comes in contact with said activating means when the dispenser is out of product;
 - e. whereby when said blocking means is activated, said blocking means blocks said passageway to prevent said currency from being accepted by said dispenser when said dispenser is out of product.
15. The dispenser in accordance with claim 14, further comprising mounting apertures for mounting said dispenser to a wall.
16. The dispenser in accordance with claim 14, wherein said accepting currency means includes a currency operated dispensing mechanism.
17. The dispenser in accordance with claim 14, wherein said blocking means includes a spring-biased blocking structure having a depressable portion partially extending out from said accepting currency means and biased upwardly by spring means and a blocking portion, such that when said activating means depresses the depressable portion, the blocking portion is pushed into and blocks said passageway to prevent said currency from being accepted by said dispenser when the dispenser is out of product.
18. The dispenser in accordance with claim 14, wherein said stack of products are sanitary napkins which are in a flat package.
19. The dispenser in accordance with claim 14, wherein said stack of products are tampons which are in a tubular package.

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