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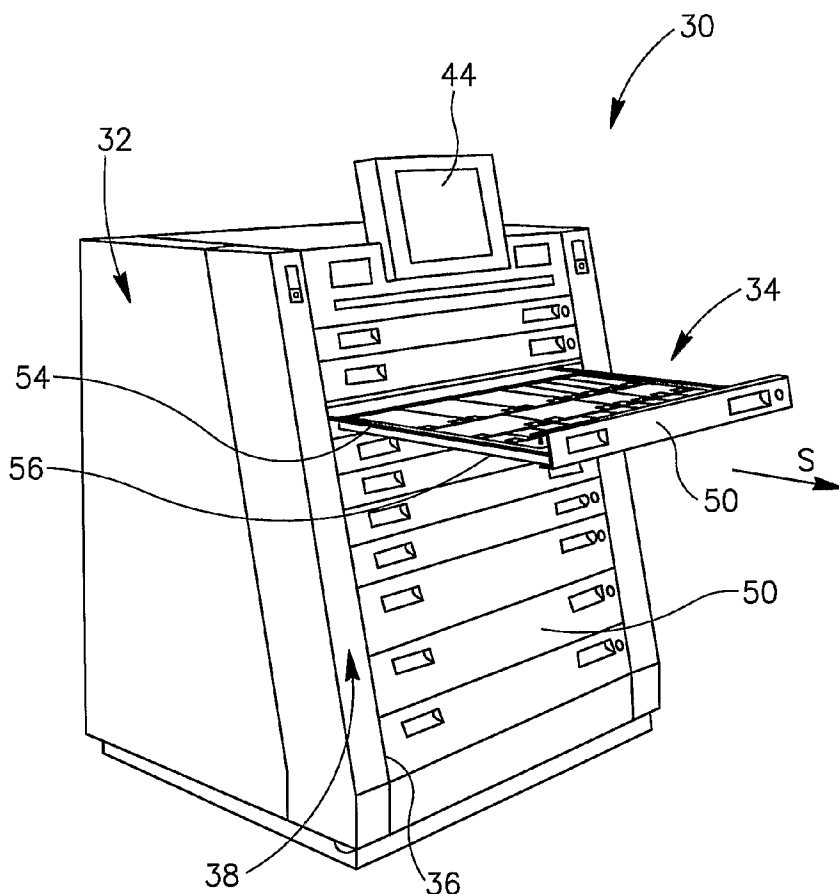
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(54) Title: DISPENSING SYSTEM



(57) Abstract: A dispensing system having drawers divided into bins with lockable lids. Each drawer may be divided into a cell array of M columns by N rows with each bin occupying at least one cell of the cell array. The dispensing system controls access to a given bin of a given drawer by means of M controllable actuators.

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DISPENSING SYSTEM

FIELD OF THE INVENTION

The present invention relates to dispensing systems, and particularly to controlled access dispensing systems storing tools.

BACKGROUND OF THE INVENTION

5 Such storage and dispensing systems are known, for example, from U.S. Patent No. 5,745,366, which discloses a pharmaceutical dispensing device for providing access to items to be dispensed and for maintaining an inventory of the items. A dispensing unit is provided having an enclosure with an interior and with a plurality of storage locations distributed over a surface of the enclosure. Sensors associated with
10 at least some of the individual storage locations are provided. The unit further includes a multiplicity of receptacles disposed within at least some of the storage locations. Sensors associated with at least some of the individual receptacles are provided. A processor is disposed on the enclosure and connected to receive signals from the

storage location-associated sensors and the receptacle-associated sensors to track item replenishment or removal from the receptacles.

U.S. Patent No. 4,961,507 discloses dispensing machine having various items to be dispensed arranged in a selected pattern. The system responds to a request
5 for an item by verifying the authority of the user and dispensing the requested item. Pneumatic matrix switching is provided to control the selection and dispensing of the items. The pneumatic matrix has a plurality of fluid cylinders, each cylinder arranged to provide a dispensing stroke, is assigned a selected column address and a row address, and is maintained under an initial fluid pressure. The pneumatic matrix further has first
10 actuator means, second actuator means, and means to selectively activate one each of said first and second actuator means. The first actuator means comprises a fluid valve for each column address connected in common fluid communication to each fluid cylinder having the same column address and operative to condition each cylinder at said column address for actuation. The second actuator means comprises a fluid valve
15 for each row address connected in common fluid communication to each fluid cylinder having the same row address operative to condition each cylinder at said row address for actuation. The means to selectively activate one each of said first and second actuator means conditions the cylinders having one column address and one row address for actuating and activates the cylinder having said one column and said one
20 row address to provide a dispensing stroke. The invention facilitates operating a pneumatic matrix of M columns by N rows having M x N cylinders using M + N actuators.

It is an object of the present invention to provide an improved dispensing system. This object is attained with the subject matter in accordance with the claims.

25 SUMMARY OF THE INVENTION

In accordance with one aspect of the present invention, there is preferably provided a dispensing system having at least one drawer comprising a plurality of

bins each occupying at least one cell of a drawer cell array having M cell columns and N cell rows. The bins are provided with lockable lids and are selectively transferable between bin released and bin locked positions by actuators, wherein the number of actuators is not greater than M.

5 Preferably, the drawer comprises at most N compartments defined each between adjacent drawer dividers extending transversely to a sliding direction of the drawer.

 Further preferably, each drawer divider comprises a plurality of bin partition slots arrayed equidistantly therealong defining M equally-sized divider segments
10 thereon, each divider segment comprising spaced-apart lid hinge apertures and a locking slot located therebetween.

 Generally, each drawer divider accommodates a locking bar transferable between bar locking and bar releasing positions and comprising M locking latches extending therefrom and arrayed equidistantly therealong. Each locking latch
15 comprises a bolt portion extending parallel to the locking bar. When the locking bar is in the bar locking position, each bolt portion extends across the locking slot associated therewith, and when the locking bar is in the bar releasing position, each bolt portion is withdrawn from the associated locking slot.

 If desired, each lid is transferable from a lid closed position, in which the lid
20 covers the bin, to a lid open position, in which the lid is lifted from the bin to allow access thereto.

 If further desired, each lid is provided with at least one catch comprising a strike having a strike aperture formed therein, the strike extending forwardly through a strike slot formed at a catch front portion.

25 Typically, the catch can be transferred relative to the lid from a catch closed position to a catch open position, so that in the catch closed position, a catch top face is generally parallel to a lid top face and the catch front portion extends below a lid

bottom face. In the catch open position, the catch front portion is raised above the lid top face.

Preferably, the catch is biased towards the catch open position.

Further preferably, in the bin locked position, the lid is in a lid closed position, the catch is in the catch closed position, the strike is located in the locking slot of the divider segment adjacent thereto, and the bolt portion of the locking latch associated with the locking slot extends through the strike aperture.

Yet further preferably, when the bin is in the bin released position, the bolt portion is withdrawn from the strike aperture and the catch is transferred to the catch open position by the biasing force of the catch biasing spring.

Generally, the drawer is slidable relative to an associated drawer support fixed to a cabinet, the drawer support comprising a securing beam having a single row of M equally-spaced actuators extending transversely to the sliding direction, each actuator being transferable between actuator securing and actuator releasing positions.

If desired, each actuator is associated with a lid securing lever transferable between lever lowered and lever raised positions.

If further desired, when the lid securing lever is in the lever lowered position, and the actuator is in the actuator securing position, the lid securing lever is prevented from transferring to the lever raised position.

If yet further desired, when the lid securing lever is in the lever lowered position, and the actuator is in the actuator securing position, the lid securing lever urges lids and catches sliding adjacent thereto to the lid closed and catch closed positions.

In accordance with another aspect of the present invention, there is preferably provided a method for selectively transferring a given bin between bin locked and bin released position, the bin occupying at least one cell in a drawer cell array of M cell columns and N cell rows defined in a slidable drawer;

the method comprising the steps of:

- a. providing at least one non-sliding actuator (138) associated with the at least one cell column (96);
- b. sliding the drawer (34) from a fully pushed-in towards a fully pulled-out position; and
- c. selectively transferring the at least one non-sliding actuator (138) from an actuator securing position to an actuator releasing position as the given bin (40) slides adjacent thereto, thereby facilitating selective transferring of the given bin from the bin locked to the bin released position.

If desired, the given bin is defined between two adjacent drawer dividers extending transversely to a sliding direction of the slidable drawer, at least one drawer divider comprising a locking bar slidable therein between bar locking and bar releasing positions, the locking bar comprising at least one locking latch having a bolt portion extending parallel thereto, the drawer divider having at least one locking slot associated with the given bin, and the lid comprising at least one strike having a strike aperture formed therein.

The method further comprising the steps of:

- d. initially positioning the lid in a lid closed position and the locking bar in the bar closed position, with the strike extending into the associated locking slot and the bolt portion extending through the strike aperture, thereby positioning the bin in the bin locked position; and
- e. transferring the locking bar to the bar releasing position as the drawer slides the given bin slides adjacent to the at least one actuator, thereby withdrawing the bolt portion from the strike aperture and releasing the bin to be selectively transferable to the bin released position.

The present invention provides the following preferred advantages:

facilitating secured storage of items while providing controlled access thereto and dispensing thereof;

providing modular, easily configurable storage for a plurality of diverse items,
5 while significantly reducing the required number of actuators needed to operate the dispensing system, by reducing electro-mechanical actuators count to M, for for a given drawer having a cell array of M columns by N rows, as compared with M x N or, at least, M + N actuators required by prior-art devices, thereby contributing to reduced costs and increased reliability of the dispensing system;

10 positioning the electro-mechanical actuators in fixed positions in the cabinet, eliminates electrical connections between stationary and movable assemblies of the dispensing system, which may further contribute to increased reliability of the dispensing system and therefor in better availability of the items stored therein.

BRIEF DESCRIPTION OF THE DRAWINGS

15 For a better understanding of the present invention and to show how the same may be carried out in practice, reference will now be made to the accompanying drawings, in which:

Fig. 1 is a perspective view of a dispensing system in accordance with the present invention;

20 **Fig. 2** is a perspective view of a drawer and an associated drawer support of the dispensing system shown in Fig. 1;

Fig. 3 is a top view of the drawer shown in Fig. 2;

Fig. 4 is a top rear perspective view of a drawer divider of the drawer shown in Fig. 2;

25 **Fig. 5** is a front view of the drawer divider shown in Fig. 4;

Fig. 6 is detail view of the drawer divider shown in Fig. 5;

Fig. 7 is a front view of a locking bar of the drawer divider shown in Fig. 4;

Fig. 8 is a detail view of the locking bar shown in Fig. 7;

Fig. 9 is a schematic top view of a cell array of the drawer shown in Fig. 2;

5 **Fig. 10** is a top view of the drawer shown in Fig. 2;

Fig. 11 is a detail perspective view of a bin of the drawer shown in Fig. 2;

Fig. 12 is a detail top rear perspective view of a securing cross-beam of the drawer support shown in Fig. 2;

10 **Fig. 13** is a bottom front perspective view of the securing cross-beam shown in Fig. 13;

Fig. 14 is a schematic cross section of the drawer and drawer support showing a lid securing lever in a lever lowered position, taken along the plane XIV – XIV in Fig. 2;

15 **Fig. 15** is schematic cross section of the drawer and drawer support showing a lid securing lever in a lever raised position, taken along the plane XIV – XIV in Fig. 2.

DETAILED DESCRIPTION OF A PREFERRED EMBODIMENT

Attention is drawn to Figs. 1 and 2. A dispensing system **30** has a cabinet **32** accommodating a plurality of drawers **34**. Each drawer **34** slides in and out of the cabinet **32** along a rear-to-front sliding direction **S**, through a cabinet opening **36** formed at a cabinet front face **38**. The drawer **34** is continuously positionable between fully pushed-in and fully pulled-out positions. It should be noted that directional terms appearing throughout the specification and claims, e.g. "front", "rear", etc., (and derivatives thereof) are for illustrative purposes only, and are not intended to limit the scope of the appended claims. The drawer **34** stores items in a plurality of bins **40** provided with lockable and selectively-releasable lids **42**. The lids **42** are controlled by

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an access-control system (not shown). The access-control system may have, for example, a combined display and input device, e.g., a touch screen 44, through which users may issue dispensing or restocking requests, and a user identification means (not shown) such as card readers or biometric means, so that the system may identify the user and determine whether the user is authorized to withdraw or replenish a specific item. However, the access-control system does not constitute the subject matter of the present invention, and therefore it will not be described further herein. Each drawer 34 is associated with a drawer support 46 secured to the cabinet 32 and having drawer guide wheels 48 on which the drawer 34 slides in and out of the cabinet 32. When the drawer 34 is in the fully pushed-in position, a drawer front panel 50 is flush with the cabinet front face 38.

As is best shown in Fig. 3, the drawer 34 has a drawer tub 52 in which the bins 34 are located. The drawer tub 52 is supported by drawer right and left side-rails 54_R, 54_L mounted to right and left tub sidewalls 55_R, 55_L, respectively. The drawer right and left side-rails 54_R, 54_L are connected to the drawer front panel 50 and extend rearwardly therefrom. The terms "left" and "right" are defined from a point of view of the user standing in front of the cabinet 32 and facing the cabinet front face 38. Each of the right and left side-rails 54_R, 54_L is provided with a slide 56 to support the drawer 34 on the guide wheels 48 of the drawer support 46. Each of the right and left tub sidewalls 55_R, 55_L has (N + 1) of divider slots 59 formed therein and spaced equidistantly therealong.

Attention is additionally drawn to Figs. 4 to 10. A row of bins 40 defines a compartment 58 (see fig. 10). Each compartment is bounded by a pair of adjacent drawer dividers 60. Each drawer divider 60 is of a generally elongated rectangular shape, extending perpendicularly to the sliding direction S between two opposing divider slots 59 disposed in the right and left tub sidewalls 55_R, 55_L. Each drawer divider 60 accommodates an elongated, flat locking bar 62 having an integrally formed releasing rod 64 extending rightwardly thereof. M locking latches 66 extend upwardly

from the locking bar **62** and are spaced equidistantly therealong. Each locking latch **66** is of an L-shape, and has a bolt portion **68** extending parallel to the locking bar **62**. A bar mounting slot **70** is formed in the locking bar **62**. The bar mounting slot **70** accommodates a locking spring **72** confined between a divider bolt **74** and a mounting slot right end **76**. The divider bolt **70** extends through the bar mounting slot **70** and is affixed to the drawer divider **60**. The locking spring **72** biases the locking bar **62** rightwards to a bar locking position. The locking bar **62** may be urged leftwards to a bar releasing position, as will be further discussed below. The releasing rod **64** of the drawer divider **60** protrudes through a tub right side-wall **55_R** to a side-wall outer side **80** of the drawer tub **52**.

Each drawer divider **60** has a plurality of bin partition slots **82** spaced equidistantly therealong defining M equally-sized divider segments **84**. Two spaced-apart lid hinge apertures **86** and one locking slot **88** located therebetween are formed in each divider segment **84**. When the locking bar **62** is in the bar locking position, each bolt portion **68** thereof extends across the locking slot **88** associated therewith. When the locking bar **62** is in the bar releasing position, each bolt portion **68** thereof is withdrawn from the locking slot **88**.

Referring now particularly to Figs. 9 and 10, the divider slots **59** and the bin partition slots **82** define a drawer cell array **90** having a plurality of identical cells **92**. The cells **92** of the cell array **90** are arranged in N cell rows **94** and M cell columns **96**. Each cell row **94** extends transversely to the sliding direction **S**. Each cell column **96** extends parallel to the sliding direction **S**. Numerals 1r, 2r, and 1c, 2c, shown in Fig. 9, indicate an ordinal number of row and columns, respectively.

Each compartment **58** may extend over one or more cell rows **94**. Each compartment **58** may be divided into individual bins **40** by placing bin partitions **98** in opposing bin partition slots **82** of the two adjacent drawer dividers **60** defining the compartment **58**. All the bins **40** in a given compartment **58** extend over the same

number of cell rows **94**; however different bins **40** of the same compartment **58** may extend over differing numbers of cell columns **96**.

As is best shown in Figs. 4 and 11, the lid **42** has opposing lid top and lid bottom faces **100**, **102**. The lid **42** is hinged by a plurality of lid hinges **104** located adjacent a lid rear end **106** thereof to the drawer divider **60** adjacent the lid rear end **106**. Each lid hinge **104** is located in the corresponding lid hinge aperture **86** of the drawer divider **60** adjacent thereto. The lid **42** can be shifted from a lid closed position to a lid open position. In the lid closed position, the lid **42** covers the bin **40** and prevents access thereto. In the lid open position, the lid **42** is lifted from the bin **40** to allow access thereto and to the items stored therein.

Each lid **42** is provided with at least one catch **108** located at a catch aperture **110** formed adjacent and opening to a lid front end **112**. Generally, bins **40** extending over several cell columns **96** may be provided with lids **42** having more than one catch **108**. The catch **108** has a catch lid portion **114** having opposing catch top and bottom faces **116**, **118**. A catch front portion **120** is integrally-formed with the catch lid portion **114** and extends from the catch bottom face **118** in a direction away from the catch top face **116** perpendicularly thereto. A strike **124** having a strike aperture **126** is fixed to the catch bottom face **118** and extends forwardly from the catch front portion **120** through a strike slot **122** formed therein. The catch **108** is hinged to the lid **42** at a catch rear end **128**, and can be rotated about the catch rear end **128** from a catch open to a catch closed position. In the catch closed position, the catch top face **116** is typically flush with the lid top face **100**, and the catch front portion **120** extends below the lid bottom face **102**. In the catch open position, the catch front portion **120** is raised above the lid top face **100**. The catch **108** is biased towards the catch open position by a catch biasing spring **130**.

When the lid **42** is in the lid closed position, the bin **40** may be brought to a bin locked position, by securing the lid in the lid closed position, as will be discussed below, to prevent the lid **42** from being able to be transferred to the lid open position.

The bin **40** is brought to the bin locked position by bringing the catch **108** to the catch closed position and placing the strike **124** of the catch **108** in the locking slot **88** of the drawer divider **60** adjacent thereto (see Fig. 6). By shifting the bolt portion **68** adjacent the strike **124** to a position in which it extends through the strike aperture **126**, the catch **108** is locked in position and cannot be raised to the catch open position. Consequently, the lid **42** is also locked and cannot be brought to the lid open position. In order to gain access to the bin **40**, the bin **40** is brought to a bin released position, by withdrawing the bolt portion **68** from the strike aperture **126**. The catch **108** is now free to move to the catch open position under the influence of the biasing force of the catch biasing spring **130**. As soon as the catch **108** is in the catch open position, the lid **42** may be transferred to the lid open position.

Referring now to Figs. 2, 12 and 13, the drawer support **46** has a securing beam **132** extending between right and left mounting flanges **134_R**, **134_L**. The right and left mounting flanges **134_R**, **134_L** are affixed to the cabinet **32** by any suitable means. The right mounting flange **134_R** has a releasing member **136** extending inwardly therefrom. The securing beam **132** has M equally-spaced actuators **138** mounted thereon in a single row extending transversely to the sliding direction **S**. Preferably, the actuators **138** are of the electro-mechanical type, e.g., solenoids, and are individually connected to, and controlled by, the access-control system. Each actuator **138** has a stop member **139** in a form of a short rod extending transversely to the sliding direction **S** from an actuator side surface **139'**. The stop member **139** is movable from an extended position, in which the actuator **138** is in an actuator securing position, to a retracted position (or a partially extended position), in which the actuator **138** is in an actuator releasing position **138**. Each actuator **138** is associated with a lever through-slot **140** extending through the securing beam **132** and located adjacent the actuator side surface **139'**. The lever through-slots **140** are elongated in form, each lever through-slot **140** extending parallel to the sliding direction **S**. Each lever through-slot **140** has a lid securing lever **142** located therein.

The lid securing lever **142** is rotatably secured to a plate **143** which is affixed to the securing beam **132**. The lid securing lever **142** may be rotated about an axis of rotation **A** parallel to the actuator side surface **139'** from a lever lowered position to a lever raised position. In the lever lowered position, the actuator **138** may be brought to the actuator securing position, to prevent the lid securing lever **142** from moving to the lever raised position. Bringing the actuator **138** to the actuator releasing position allows the lid securing lever **142** to move to the lever raised position. The lid securing lever **142** is biased towards the lever lowered position by its weight.

Attention is now drawn to Figs. 14 and 15. The method of operation of the dispensing system **30** will be discussed below with respect to a given bin **40** occupying a single cell **92**. The given bin's **40** lid **42** has a single given catch **108**. It will be appreciated that the method of operation applies equally well to bins extending over several cell columns and / or having lids provided with several catches. Initially, the drawer **34** is in the fully pushed-in position with all its bins **40** in the bin locked position. As the drawer **34** is pulled out from the cabinet **32**, the given catch **108** slides forwardly under the corresponding lid securing lever **142**. The locking bar **62** adjacent the given catch **108** passes along, and is engaged by, the releasing member **136**. The releasing member **136** pushes against the releasing rod **64** and shifts the locking bar **62** to the bar releasing position. However, as long as the access-control system determines that the given bin **40** should be kept in the bin locked position, the actuator **138** associated with the lid securing lever **142** remains in the actuator securing position. In this position, the stop member **139** is in the extended position and is located directly above the lid securing lever **142** (see Figs. 12, 14), thereby preventing upward movement of the lid securing lever **142**. Thus, the lid securing lever **142** is forced to remain in the lever lowered position. When in the lever lowered position, the lid securing lever **142** abuts the catch top face **116**, thereby preventing the given catch **108** from moving from the catch closed position. As the drawer **34** is drawn further forwardly, the releasing rod **64** clears the releasing member **136**, the biased locking bar **62** returns to the bar locking position, and the given catch **108** is again secured in

the catch closed position, thereby securing the lid **42** in the lid closed position and the bin **40** in the bin locked position.

If, however, the access-control system determines that the given bin **40** is to be opened it transfers the actuator **138** associated with the lid securing lever **142** to the
5 actuator releasing position, as the given catch **108** slides forwardly under the associated lid securing lever **142**. With the actuator **138** in the actuator releasing position, the stop member **139** is in the retracted position, so that it is no longer located directly above the lid securing lever **142**. Consequently, upward movement of the lid securing lever is no longer prevented. When the locking bar **62** is shifted to the bar releasing position, as it
10 engages the releasing member **136**, the catch **108** is released and urged by the catch biasing spring **130** to the catch open position. As the given catch **108** is urged to the catch open position, it urges the lid securing lever **142** to the lever raised position, against the biasing weight thereof (see Fig. 15), as the upward movement of the lid securing lever **142** is no longer inhibited when the actuator **138** is in the actuator
15 releasing position, with the stop member **139** being in the retracted position.

As the drawer is pulled further forwardly to the fully-opened position the releasing rod **64** clears the releasing member **136** and the biased locking bar **62** returns to the bar locking position. However, since the given catch **108** is in the catch open position, and is raised (see Fig. 15), its strike **124** is above the drawer divider **60**
20 adjacent thereto and the bolt portion **68** of the locking bar **62** associated therewith. Therefore, as the biased locking bar **62** returns to the bar locking position, the bolt portion **68** does not pass through the strike aperture **126**, but instead passes below the strike **124**. When the now-released catch **108** clears the associated lid securing lever **142**, the lid securing lever **142** returns to the lever lowered position by own
25 biasing weight, allowing the control system to return the actuator **138** to the actuator securing position by extending the stop member **139** to the extended position. The catch **108** remains in the catch open position, with its strike above the associated bolt

portion 68, indicating that the given bin 40 is released and the lid 42 thereof may be opened to gain access to the items stored in the given bin 40.

When the given drawer 34 is urged rearwardly into the cabinet 32 to the drawer pushed-in position, the given bin 40 passes under the securing beam 132. The lid securing lever 142 associated with the given bin 40, and now locked by the actuator 138 in the lever lowered position, urges the given lid 40 and catch 108 to the lid and catch closed positions, respectively. As the releasing rod 64 engages the releasing member 136, the locking bar 62 is urged to the bar releasing position against the biasing force of the locking spring 72, causing the bolt portion 68 to withdraw from the locking slot 88. Consequently, the strike 124 of the given catch 108 can enter its locking slot 88. Further rearwards movement of the given drawer 34 causes the releasing rod 64 to clear the releasing member 136. The biased locking bar 62 then returns to the bar locking position while the lid securing lever 142 keeps the given catch 108 in the catch closed position. The bolt portion 68 can then pass through the strike aperture 126, thereby securing the bin 40 in the bin locked position. The present invention, therefore, facilitates independent and individual locking and releasing of a plurality of bins 40 of a given drawer 34 configured in an N x M cell array by employing only M individually-controlled actuators.

Although the present invention has been described to a certain degree of particularity, it should be understood that alterations and modifications to the present invention may possibly be made without departing from the scope of the invention as hereinafter claimed.

CLAIMS:

1. A dispensing system (30) having at least one drawer (34) comprising a plurality of bins (40) each occupying at least one cell (92) of a drawer cell array (90) having M cell columns (96) and N cell rows (94);

5 the bins being provided with lockable lids (42) and being selectively transferable between bin released and bin locked positions by actuators (138) associated with the drawer; wherein

the number of actuators (138) is not greater than M.

2. The dispensing system (30) in accordance with claim 1, wherein the drawer
10 (34) comprises at most N compartments (58), each compartment comprising at least one cell row (94) and being defined between adjacent drawer dividers (60) extending transversely to a sliding direction (S) of the drawer (34).

3. The dispensing system (30) in accordance with claim 2, wherein each drawer
15 divider (60) comprises a plurality of bin partition slots (82) arrayed equidistantly therealong defining M equally-sized divider segments (84) thereon, each divider segment comprising spaced-apart lid hinge apertures (86) and a locking slot (88) located therebetween.

4. The dispensing system (30) in accordance with claim 3, wherein
each drawer divider (60) accommodates a locking bar (62) transferable between
20 bar locking and bar releasing positions and comprising M locking latches (66) arrayed equidistantly therealong;

each locking latch (66) comprises a bolt portion 68 extending parallel to the locking bar (62); so that

when the locking bar (62) is in the bar locking position, each bolt portion (68)
25 extends across the locking slot (88) associated therewith; and

when the locking bar (62) is in the bar releasing position, each bolt portion (68) is withdrawn from the associated locking slot (88).

5 **5.** The dispensing system (30) in accordance with claim 4, wherein each lid (42) is transferable from a lid closed position, in which the lid (42) covers the bin (40), to a lid open position, in which the lid (42) is lifted from the bin (40) to allow access thereto.

10 **6.** The dispensing system (30) in accordance with claim 5, wherein each lid (42) is provided with at least one catch (108) comprising a strike (124) having a strike aperture (126) formed therein, the strike extending forwardly from a catch front portion (120).

7. The dispensing system (30) in accordance with claim 5, wherein the catch (108) can be transferred relative to the lid (42) from a catch closed position to a catch open position;

15 in the catch closed position, a catch top face (116) is generally parallel to a lid top face (100), and the catch front portion (120) extends below a lid bottom face (102); and

in the catch open position, the catch front portion (120) is raised above the lid top face (100).

20 **8.** The dispensing system (30) in accordance with claim 7, wherein the catch (108) is biased towards the catch open position.

9. The dispensing system (30) in accordance with claim 8, wherein in the bin locked position, the lid (42) is in a lid closed position, the catch (108) is in the catch closed position, the strike (124) is located in the locking slot (88) of the divider segment (84) adjacent thereto, and the bolt portion (68) associated with the locking slot
25 (88) extends through the strike aperture (126).

10. The dispensing system (30) in accordance with claim 9, wherein when the bin (40) is in the bin released position, the bolt portion (68) is withdrawn from the

strike aperture (126) and the catch (108) is transferred to the catch open position by the biasing force of the catch biasing spring (130).

11. The dispensing system (30) in accordance with claim 10, wherein the drawer (34) is associated with a drawer support (46) fixed to a cabinet (32) and accommodated therein, the drawer support (46) comprising a securing beam (132) having a single row of M equally-spaced actuators (138) extending transversely to the sliding direction (S) mounted thereon, each actuator (138) being transferable between actuator securing and actuator releasing positions.

12. The dispensing system (30) in accordance with claim 11, wherein each actuator (138) is associated with a lid securing lever (142) transferable between lever lowered and lever raised positions

13. The dispensing system (30) in accordance with claim 12, wherein when the lid securing lever (142) is in the lever lowered position, and the actuator (190) is in the actuator securing position, the lid securing lever (142) is prevented from transferring to the lever raised position.

14. The dispensing system (30) in accordance with claim 13, wherein when the lid securing lever is in the lever lowered position, and the actuator is in the actuator securing position, the lid securing lever urges the lids (42) and catches (108) sliding therebelow to the lid closed and catch closed positions.

15. A method for selectively transferring a given bin (40) between bin locked and bin released position, the bin being defined in a drawer cell array (90) having M cell columns (96) and N cell rows (94) and of slidable drawer (34) to comprise at least once cell (92) associated with at least one cell column (96) and at least one cell row (94);

the method comprising the steps of:

providing at least one non-sliding actuator (138) associated with the at least one cell column (96);

sliding the drawer (34) from a fully pushed-in towards a fully pulled-out position; and

5 selectively transferring the at least one non-sliding actuator (138) from an actuator securing position to an actuator releasing position as the given bin (40) slides adjacent thereto, thereby facilitating selective transferring of the given bin from the bin locked to the bin released position.

16. The method of claim 15, wherein the given bin is defined between two adjacent drawer dividers (60) extending transversely to a sliding direction (S) of the
10 slidable drawer, at least one drawer divider (60) comprising a locking bar (62) slidable between bar locking and bar releasing positions, the drawer divider (60) having at least one locking slot (88) associated with the given bin (40), the locking bar (62) comprising at least one locking latch (66) associated with the locking slot
15 (88) and having a bolt portion (68), and the lid comprising at least one strike (124) having a strike aperture (126) formed therein;

The method further comprising the steps of:

initially positioning the lid (42) in a lid closed position and the locking bar (62) in the bar closed position, with the strike (124) located in the associated locking slot
20 (88) and the bolt portion (68) of the associated locking latch (66) extending through the strike aperture (126), thereby positioning the bin (40) in the bin locked position; and

transferring the locking bar (62) to the bar releasing position as the drawer (34) slides the given bin (40) slides adjacent to the at least one actuator (138), thereby
25 withdrawing the bolt portion (68) from the strike aperture (126) and releasing the bin (40) to be selectively transferable to the bin released position.

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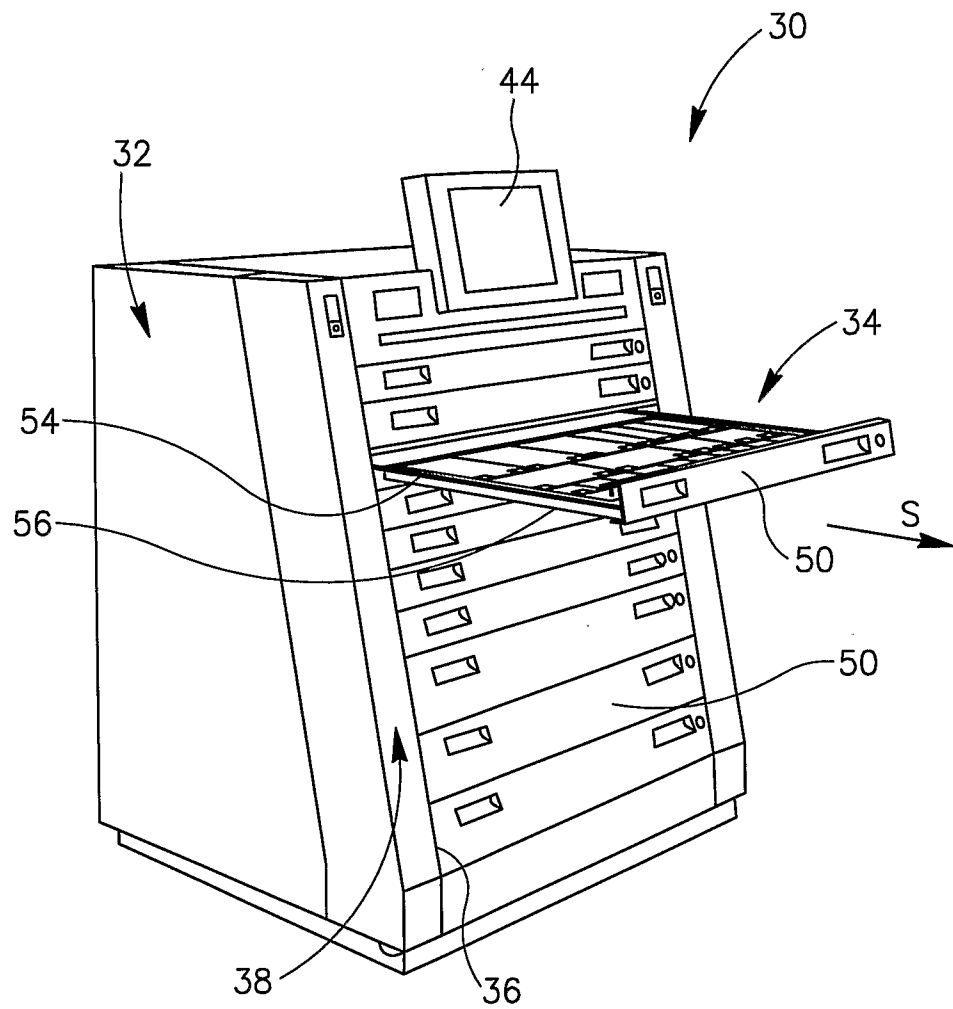


FIG.1

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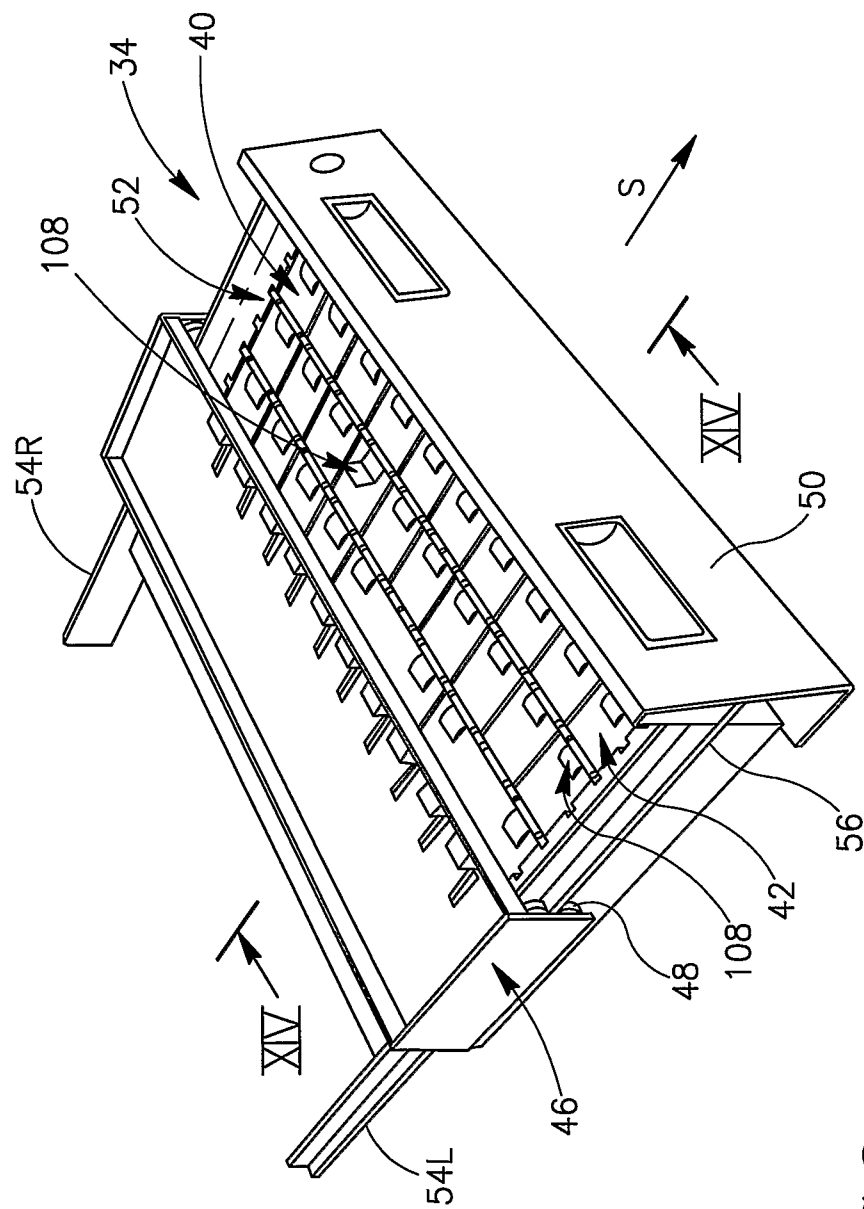


FIG. 2

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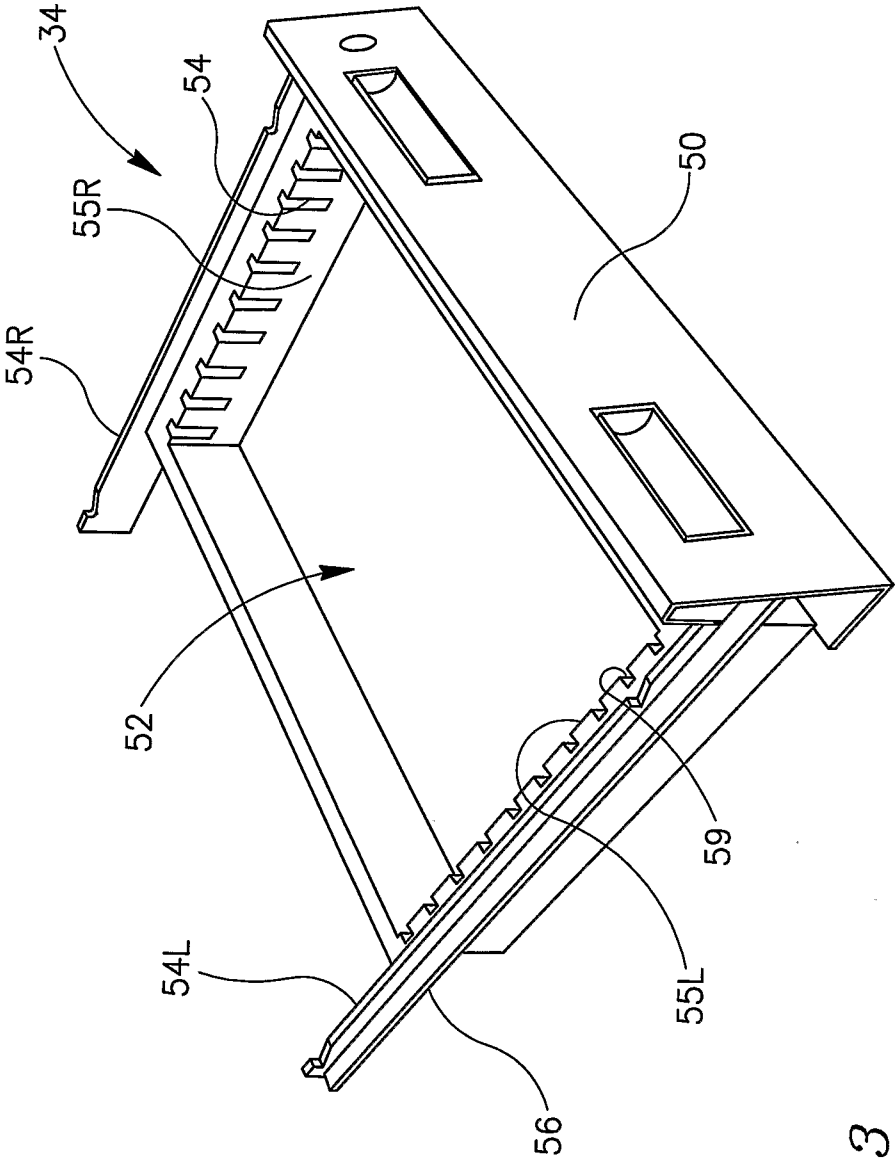


FIG. 3

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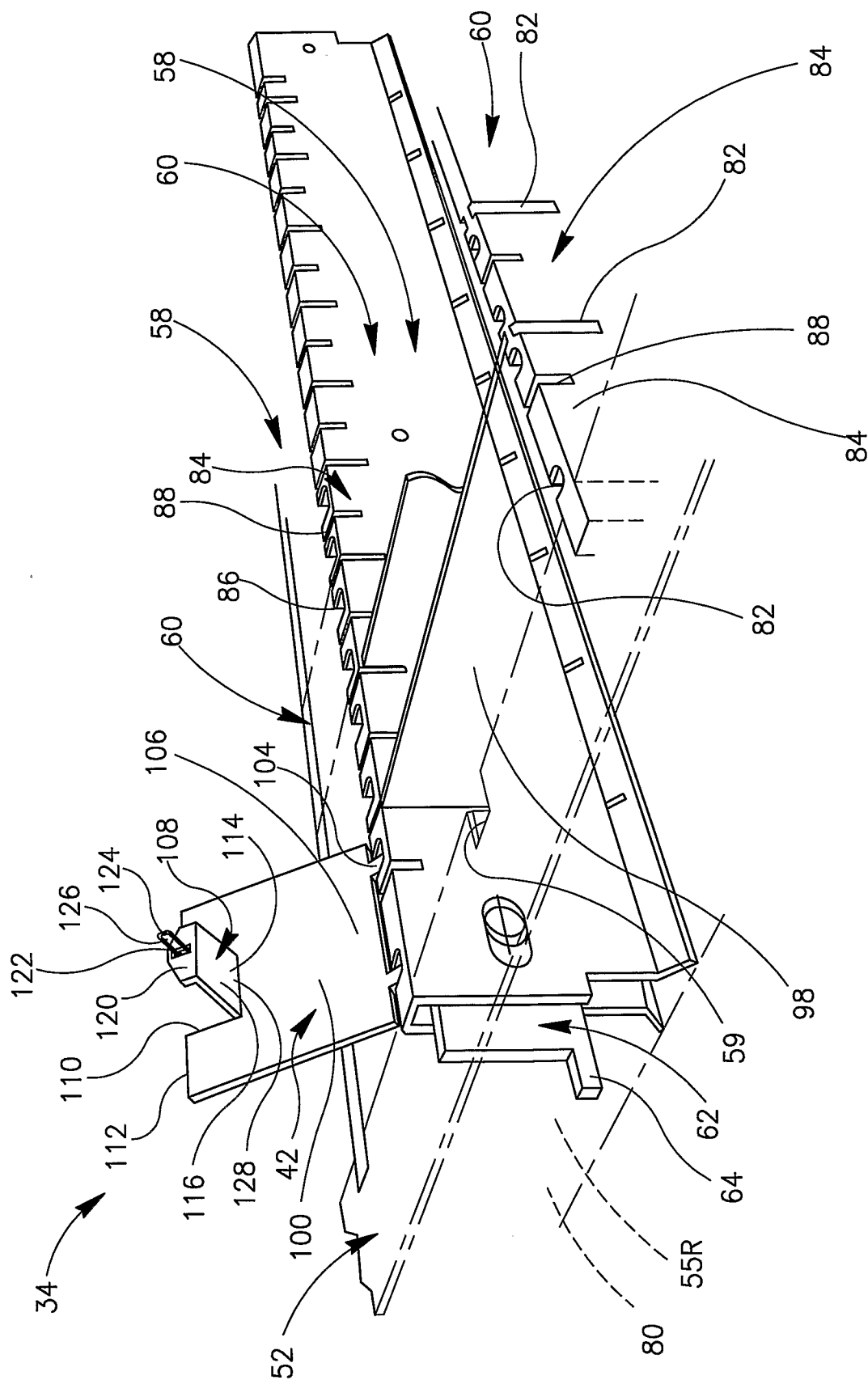


FIG. 4

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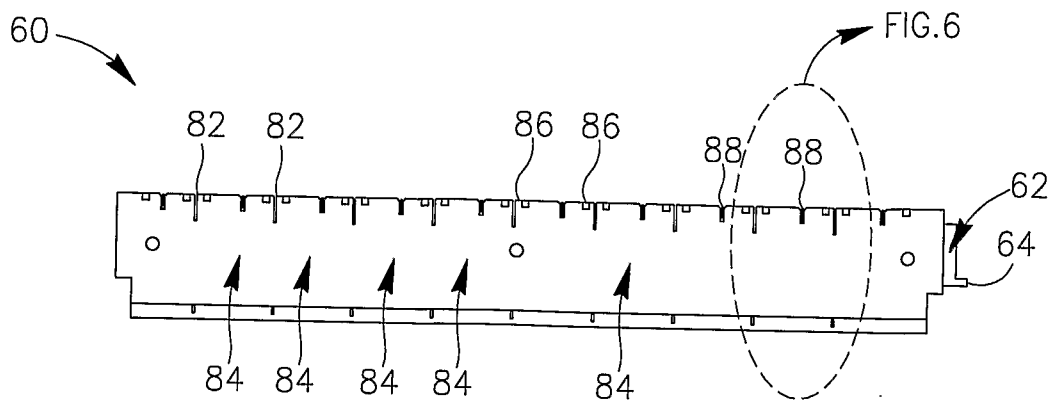


FIG. 5

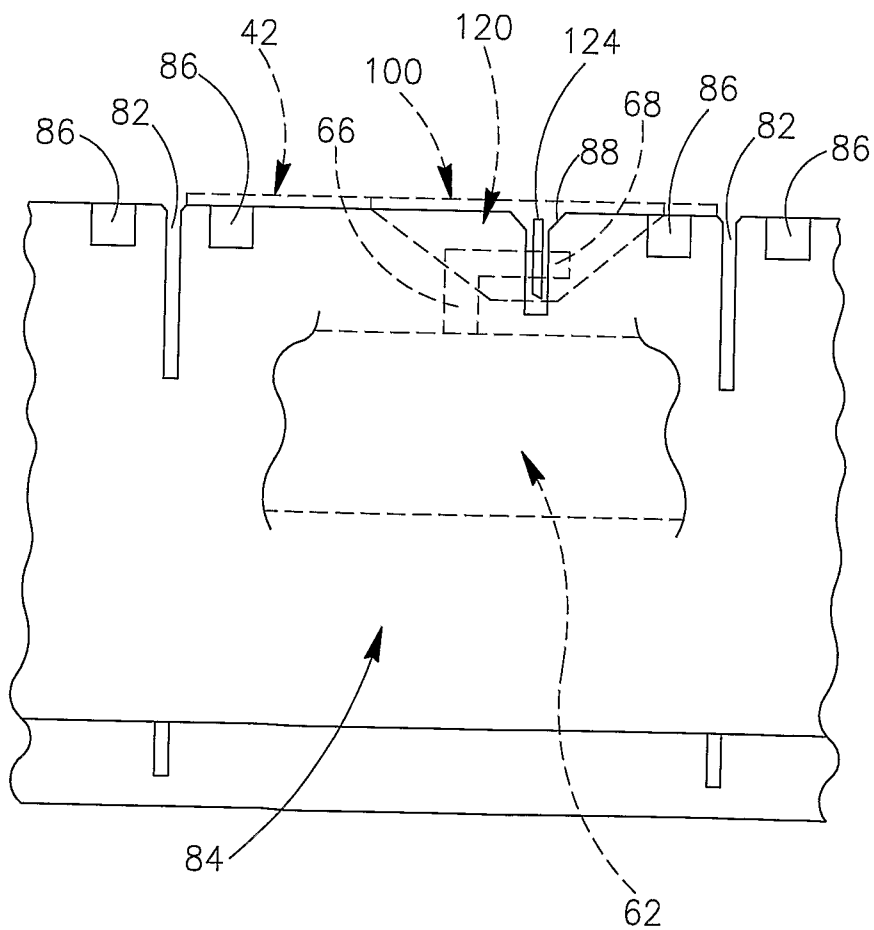


FIG. 6

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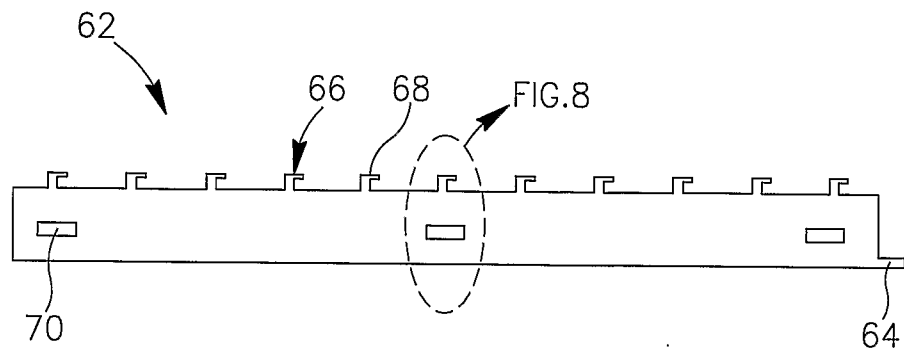


FIG. 7

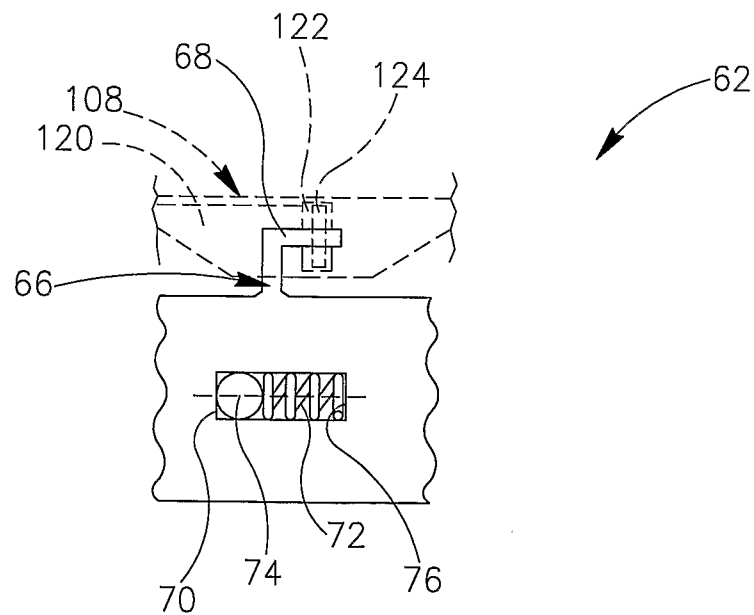


FIG. 8

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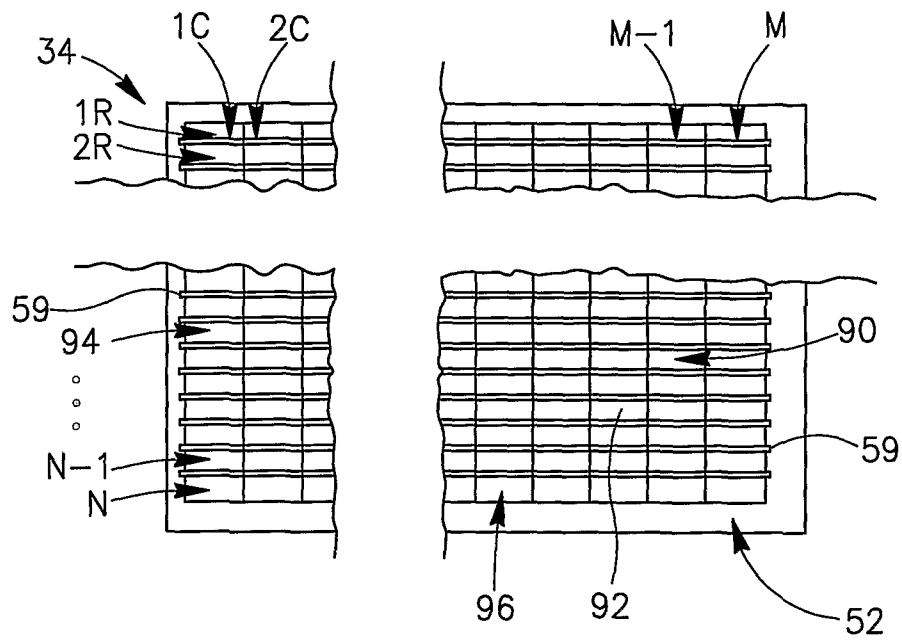


FIG. 9

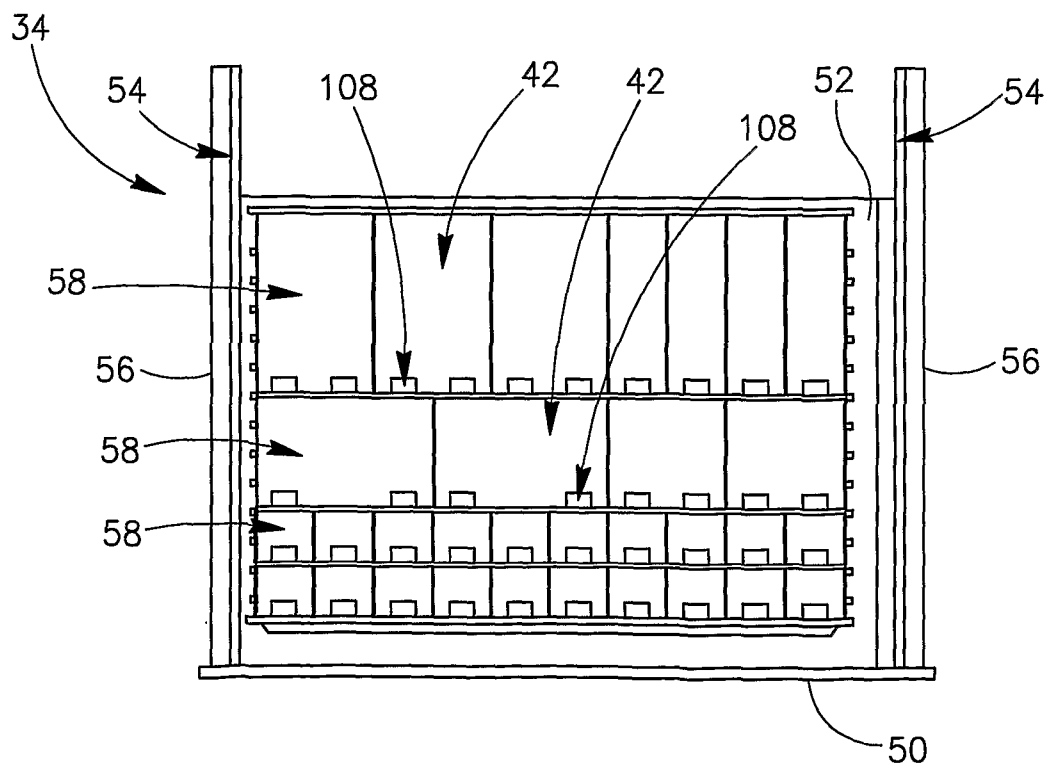


FIG. 10

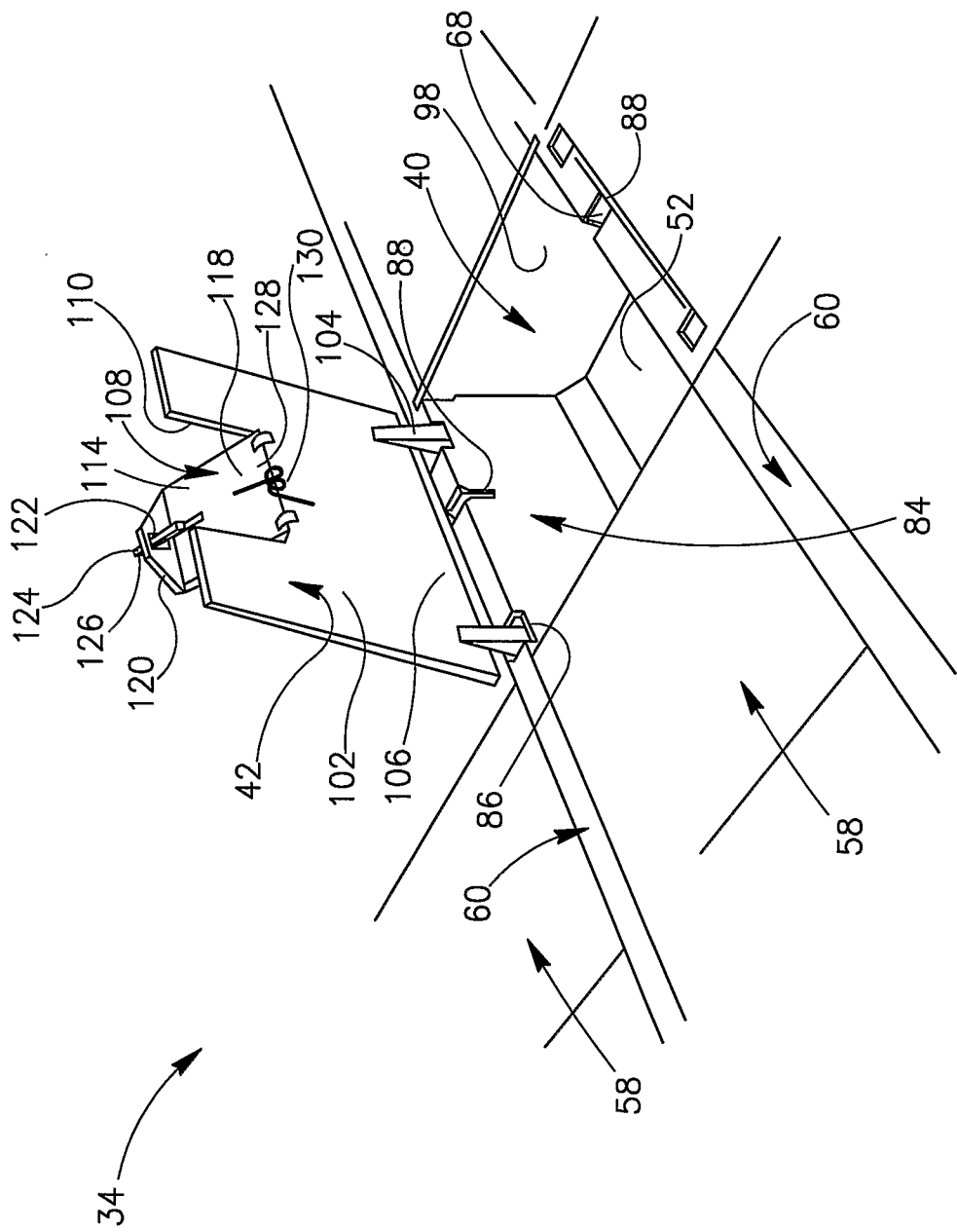


FIG.11

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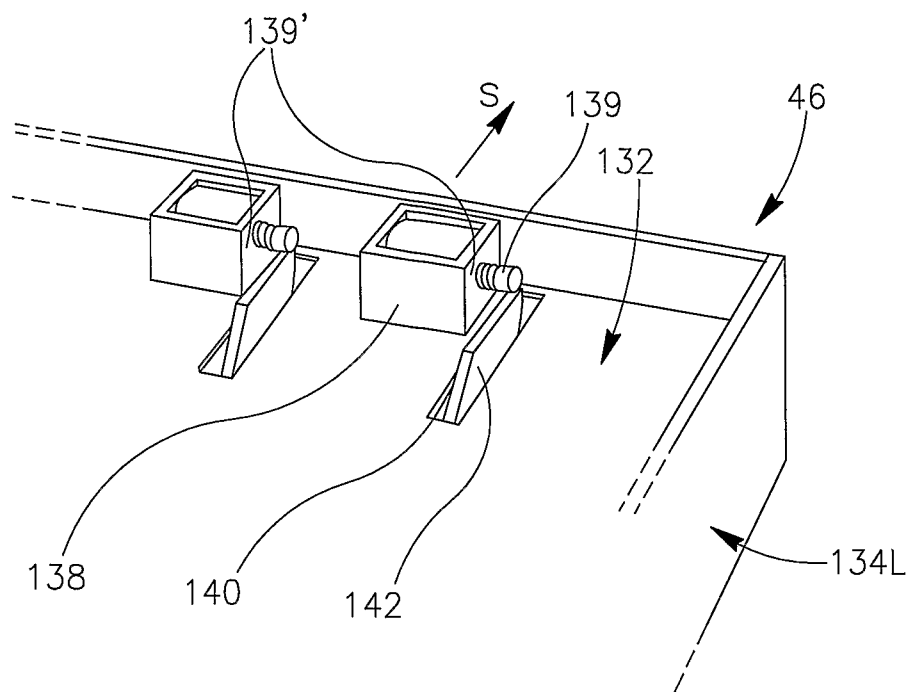


FIG. 12

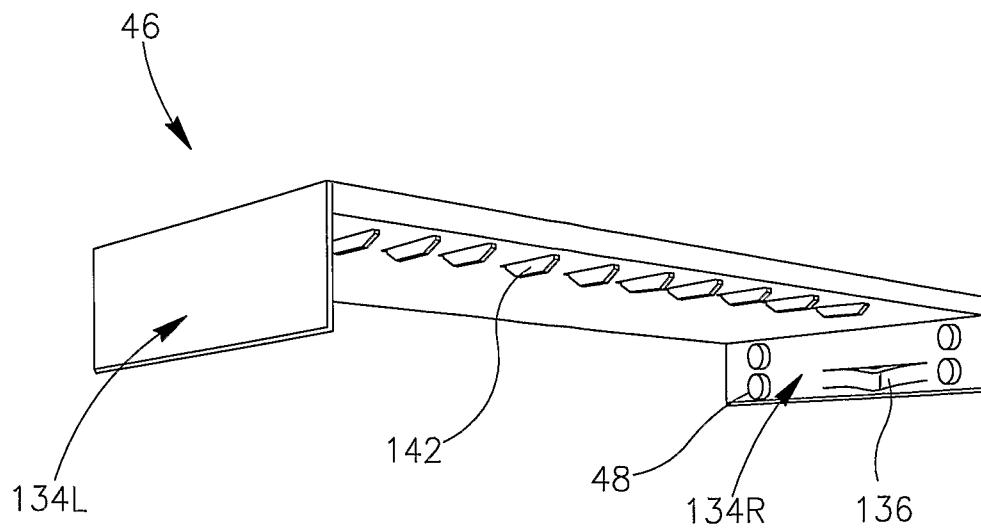


FIG. 13

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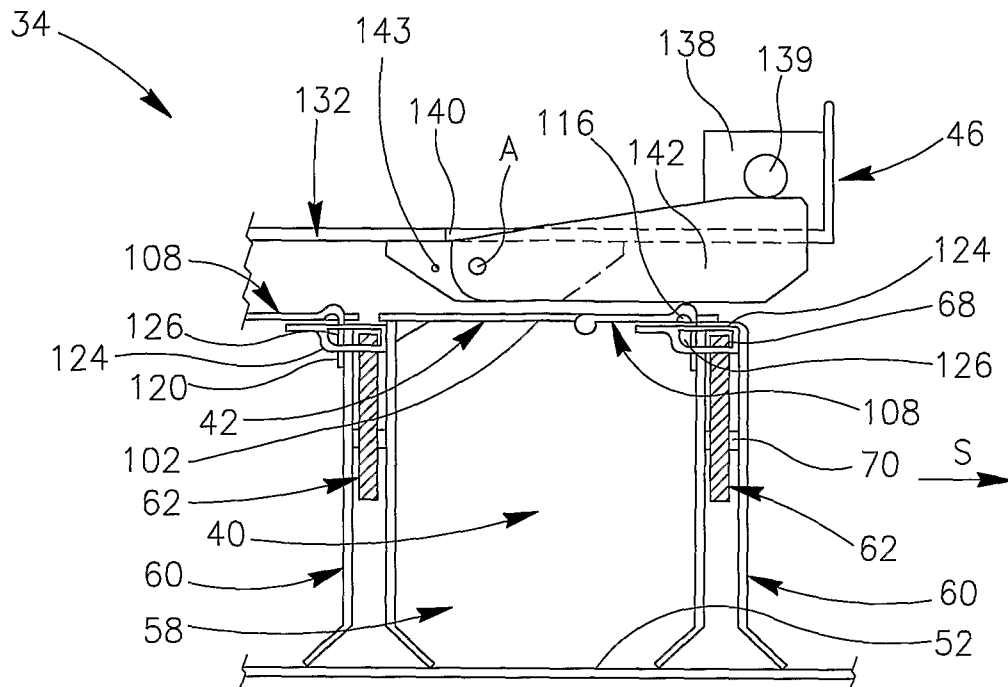


FIG.14

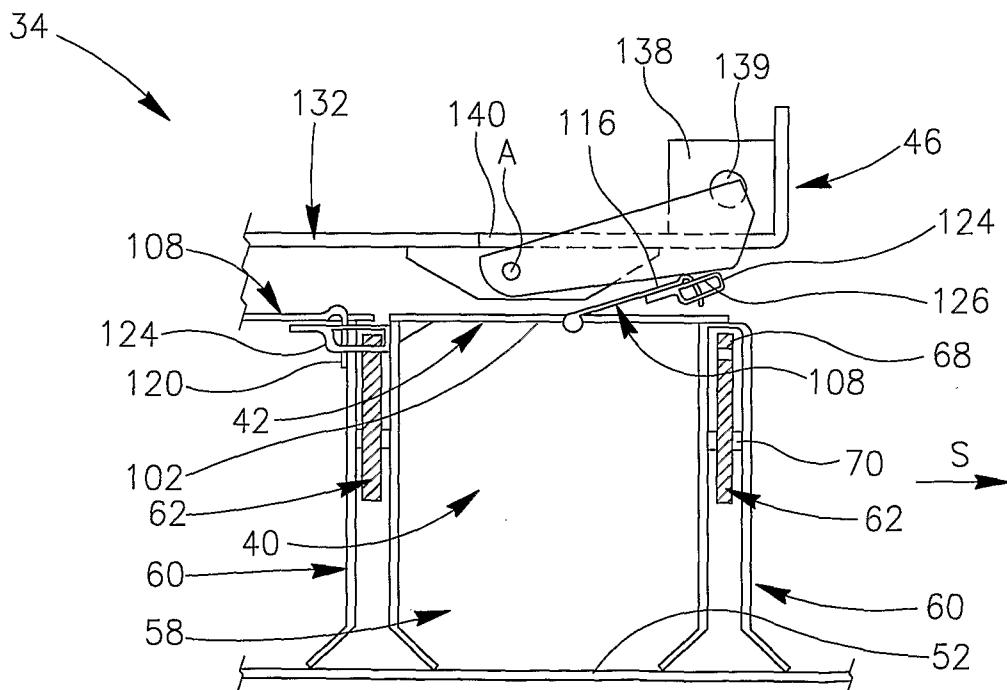


FIG.15