

No. 748,065.

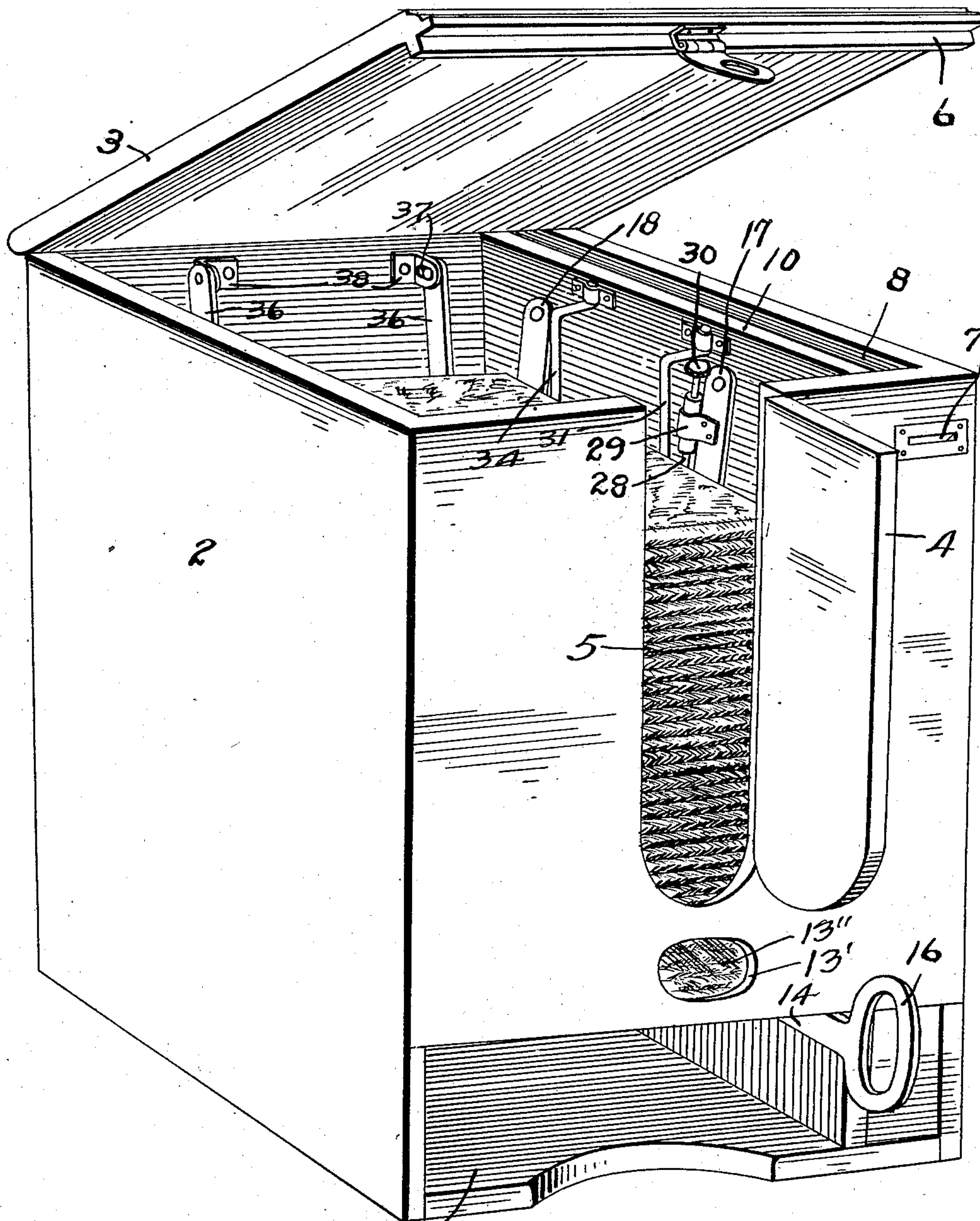
PATENTED DEC. 29, 1903.

R. M. GREEN.
VENDING MACHINE.

APPLICATION FILED AUG. 18, 1902.

NO MODEL.

4 SHEETS—SHEET 1.



Witnesses.
C. J. Stauder
W. C. Noonan

FIG. 1.

Inventor.
Romain M. Green

By Paul & Paul.
his attorneys

No. 748,065.

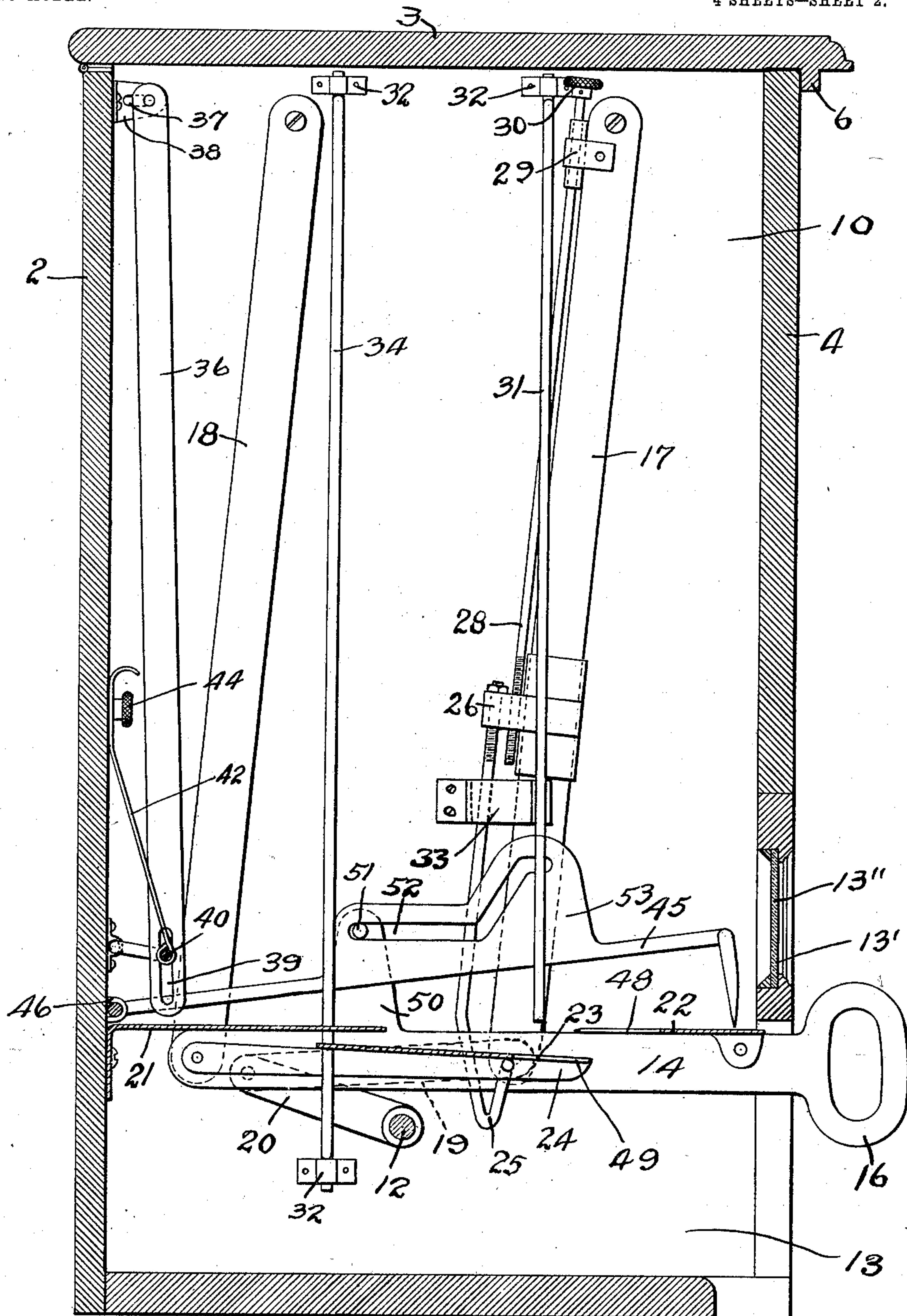
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4 SHEETS—SHEET 2.



Witnesses
C. E. Standa
M. C. Mann

FIG. 2

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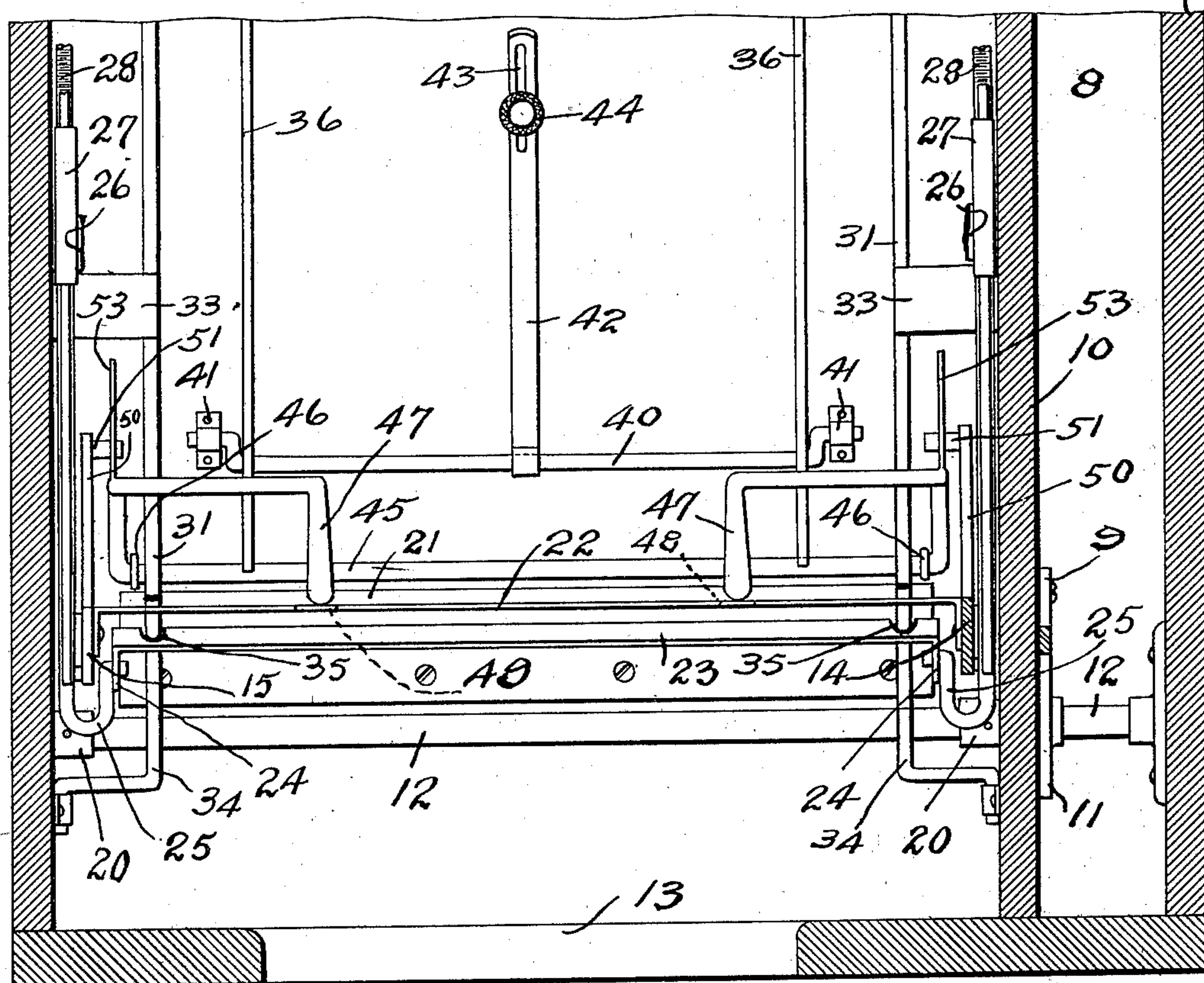
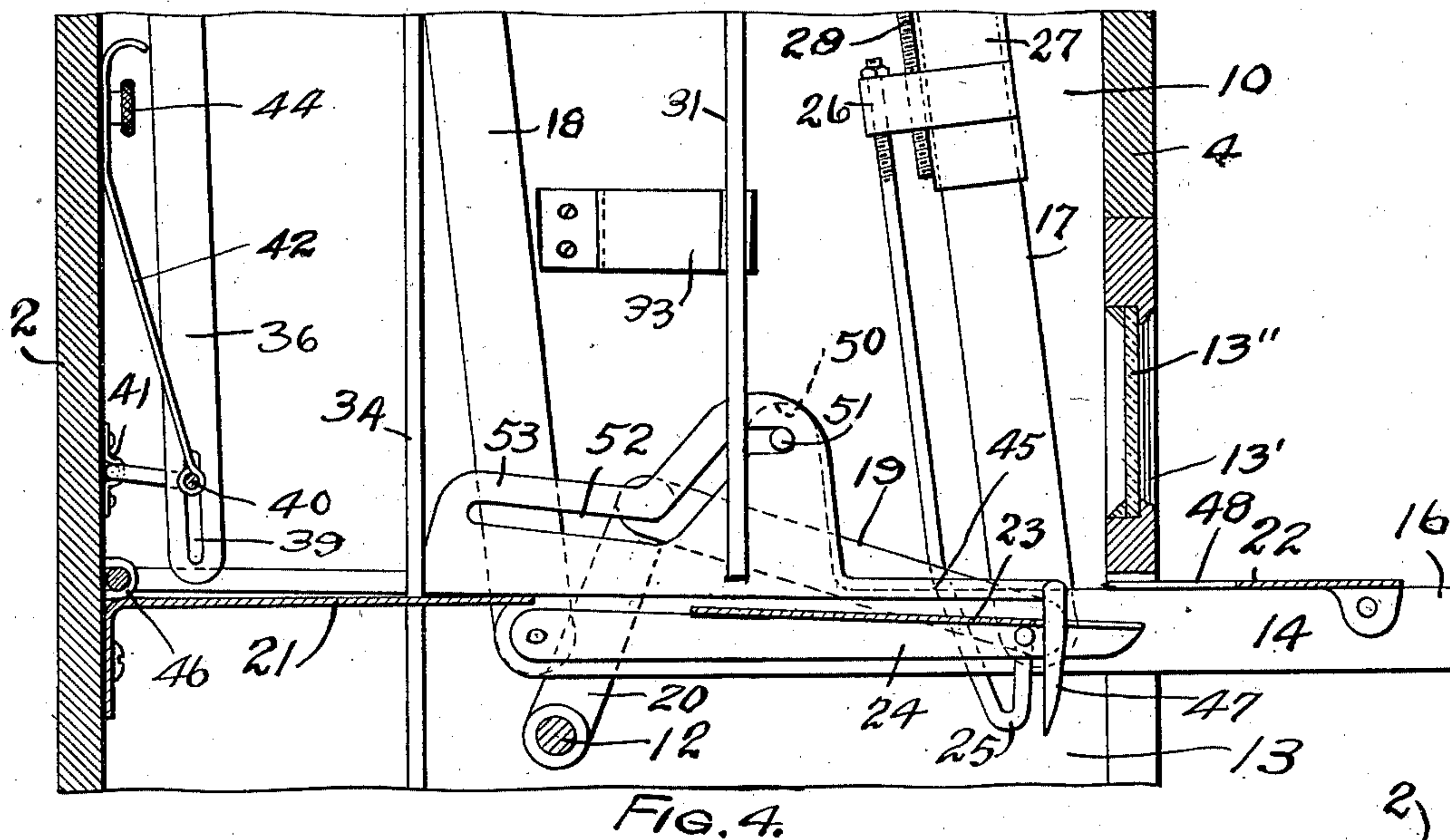
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4 SHEETS—SHEET 3.



Witnesses
O. J. Staudt
M. C. Norman

FIG. 3.

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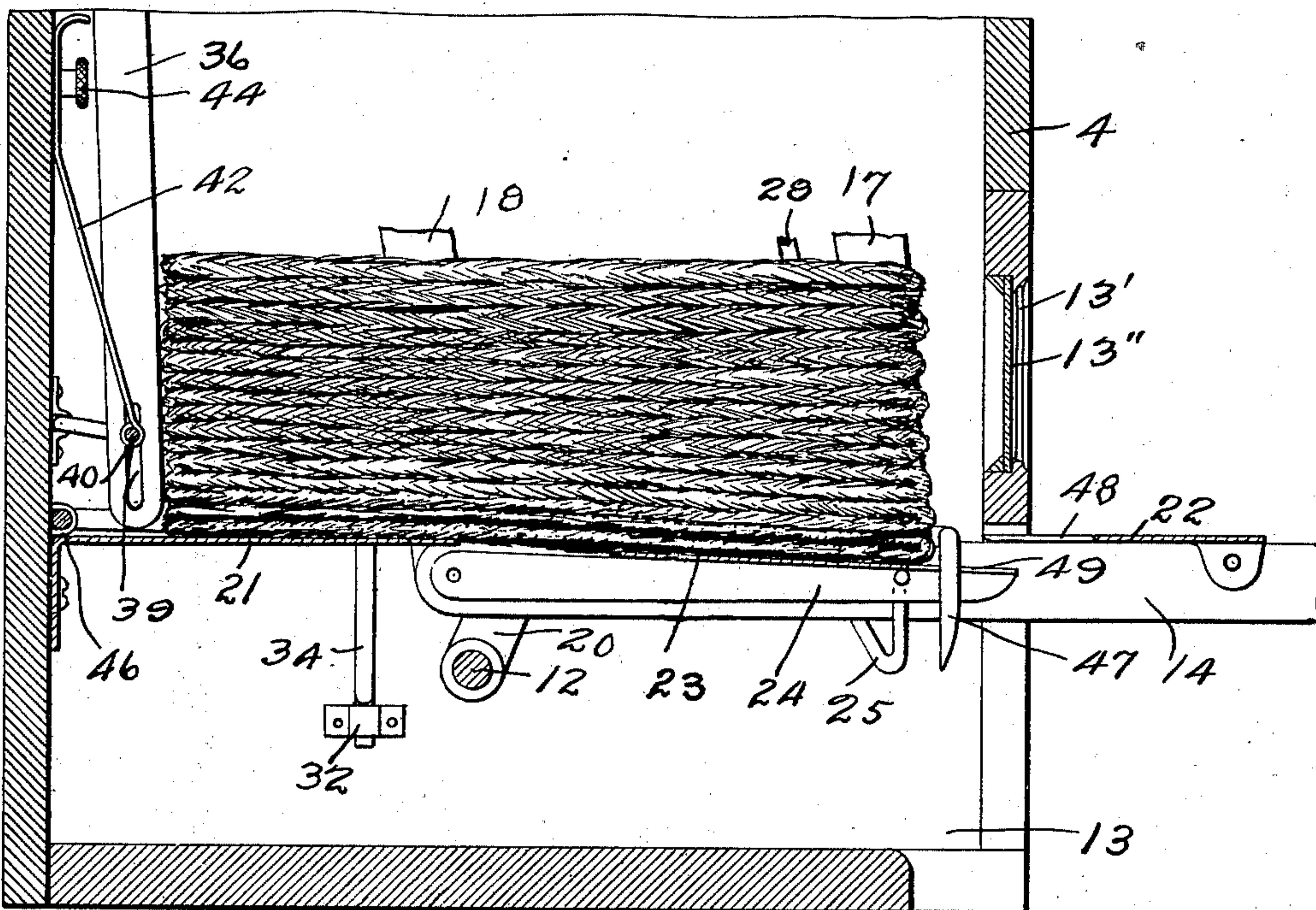
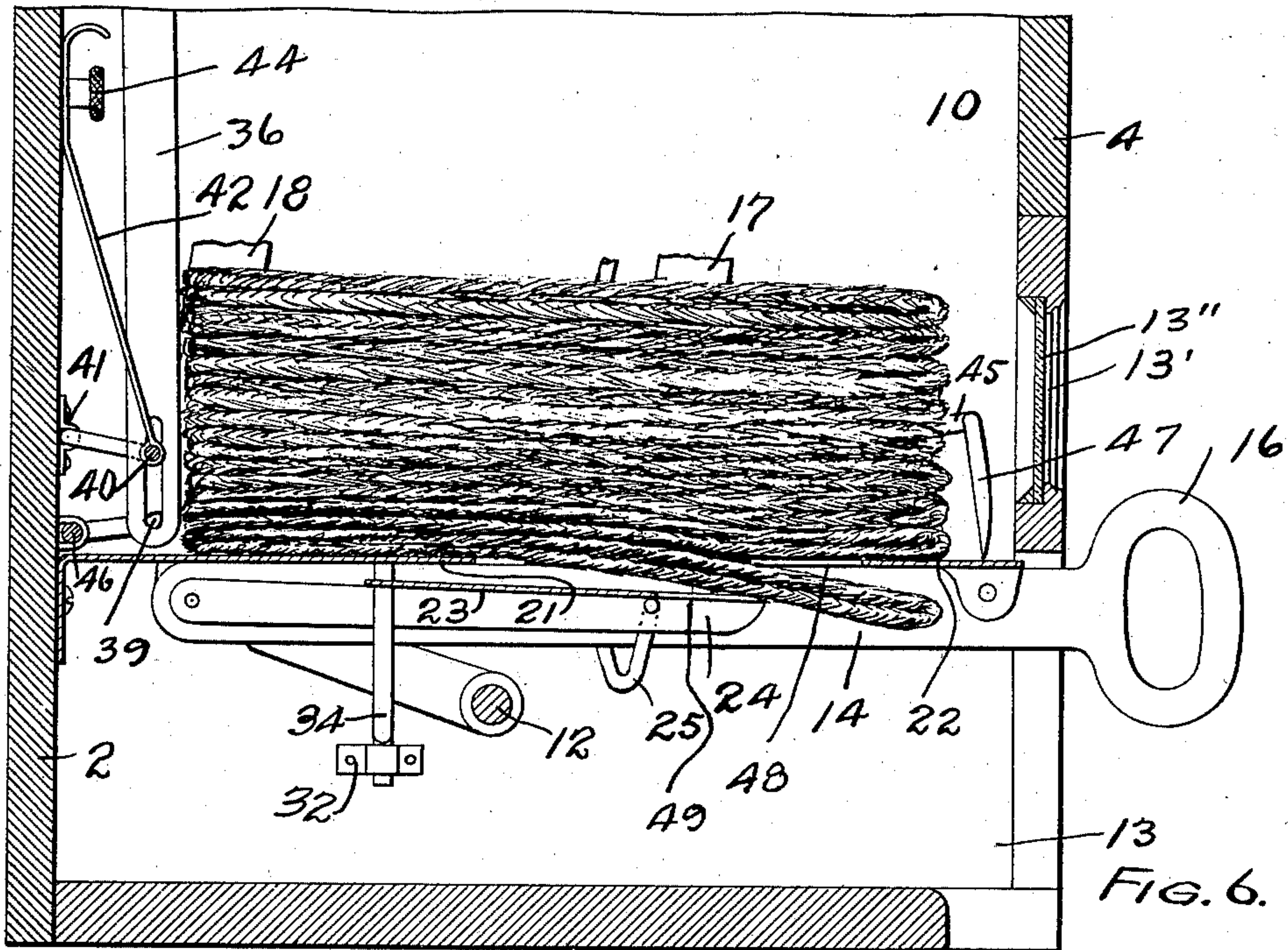
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NO MODEL.

4 SHEETS—SHEET 4.



Witnesses
M. C. Norman

FIG. 5

Inventor
Romain M. Green
By Paul & Paul
his attorneys

UNITED STATES PATENT OFFICE.

ROMAIN M. GREEN, OF DULUTH, MINNESOTA, ASSIGNOR TO THE VENDING MACHINE COMPANY, A CORPORATION OF MAINE.

VENDING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 748,065, dated December 29, 1903.

Application filed August 18, 1902. Serial No. 120,083. (No model.)

To all whom it may concern:

Be it known that I, ROMAIN M. GREEN, of Duluth, St. Louis county, Minnesota, have invented certain new and useful Improvements in Vending-Machines, of which the following is a specification.

My invention relates to machines having a mechanism released by the weight of a coin deposited therein for delivering newspapers, articles of merchandise, magazines, and other periodicals. Machines of this kind as generally constructed are provided with a series of racks between which the papers are placed one at a time, there being a rack for each paper, the number of papers that can be placed in the machine being of course limited to the number of racks employed. These racks occupy considerable space in the box, and consequently reduce the amount of space that is available for the packing of papers. The fact that it is not practicable in a machine provided with delivery-racks to increase the supply of papers above the maximum number which it was originally designed to contain has alone rendered this style of machine objectionable, as it frequently happens in times of elections, great public calamities, or events of particular interest to some locality that there is a much greater demand for the papers than at other times, and a machine whose capacity can be regulated according to the demand becomes very desirable if not an absolute necessity. Furthermore, those employed to fill the boxes with papers are necessarily limited as to time, particularly where the machines are located on street and railway cars, and it has been found that where it is necessary to lift and separate the racks and place papers one at a time between them the time consumed in filling a machine of this type would practically prohibit its general use. It has also been found that some Sunday editions take up so much room between the racks that when the bottom rack is released the paper thereon in falling will raise up the rear edge of the rack next above, so that its forward edge in dropping down will miss its support entirely, and as a consequence the racks will all drop down in rapid succession and deliver the papers simultaneously.

The object, therefore, of my invention is to provide a vending-machine wherein the papers can be placed in a bunch, one resting directly upon another, without any supporting or separating means between them and the entire space thus be utilized for the papers.

A further object is to provide a machine which can be rapidly and conveniently filled with papers and one that will allow the withdrawal of but one paper at a time and deliver the last of a bunch as well as the first and thick or thin papers with equal facility.

Other objects of the invention will appear from the following detailed description.

The invention consists generally in a box or casing provided with a rear paper-support, a movable forward support, and an intermediate support below the level of the others and adapted to receive the folded edge of the bottom paper when said forward support is drawn out from under the same and while said forward support is being pushed in between said edge and the paper next above.

Further, the invention consists in providing means for preventing the withdrawal of one or more papers while the forward support is being drawn out from under the bottom paper and before it is pushed in between it and the paper next above.

Further, the invention consists in means for adjusting the intermediate support to vary the distance between it and the movable support, according to the thickness of the papers to be delivered.

Further, the invention consists in means for regulating the depth of the box or paper receptacle, according to the dimensions of the paper.

Further, the invention consists in various constructions and combinations, all as hereinafter described, and particularly pointed out in the claims.

In the accompanying drawings, forming part of this specification, Figure 1 is a perspective of a vending-machine embodying my invention, the cover being raised and the front door open, showing the interior of the box. Fig. 2 is a vertical longitudinal section of the box, showing the mechanism for delivering the papers. Fig. 3 is a transverse ver-

tical section looking toward the back of the machine, the upper portion of the box being cut away. Fig. 4 is a partial longitudinal and vertical section showing the delivering mechanism at the limit of its forward movement. Fig. 5 is a similar view showing the papers in position for delivery. Fig. 6 is also a partial longitudinal vertical section showing the mechanism returned to its normal position within the box and the bottom paper separated from the others and ready for delivery.

In the drawings, 2 represents a box or casing of suitable size, rectangular in form, and provided with a hinged cover 3 and a door 4, that closes a vertical slot or opening 5 in the front wall and is prevented from being opened when the cover is closed by a rib 6 thereon. A suitable locking device is provided for the cover to prevent unauthorized persons from obtaining access to the box.

It is quite important in filling the box to keep the papers from becoming twisted or lying unevenly one upon another, and I find that by inserting the arm into the vertical slot and lowering the papers to their support they can be held together in a compact bundle and all difficulty of delivery which might arise from their being unevenly placed is avoided. The front wall is also provided with a coin-chute 7, leading to a suitable coin mechanism arranged within a compartment 8, provided at one side of the box and arranged to control the movement of a lever 9, that is pivoted on the wall 10 and engages a notched disk 11, provided on a rock-shaft 12. This coin mechanism may be of the ordinary or preferred construction; but as it forms no part of this invention I have not shown it in detail, nor will I attempt to describe it herein, except to state that it controls the rocking of the shaft 12 in the usual manner and prevents the operation of the newspaper-delivery mechanism except when the proper coin is deposited in the chute.

The front wall of the box at the bottom is provided with an opening 13, into which the hand is thrust to remove the paper after the delivery mechanism has been operated. I also provide a peep-hole 13', covered by a glass 13'', through which the purchaser can perceive the interior of the box and ascertain whether or not there are any papers therein. Within the box near the partition-wall 10 and the opposite side wall I provide horizontal bars 14 and 15, the former having a handle 16, that projects through the opening 13 in position to be grasped by the operator to actuate the delivery mechanism and release a paper. These bars are pivotally suspended upon links 17 and 18, which extend up beside the wall 10 and the opposite outer wall of the box and are pivoted, respectively, thereto near the cover 3. These long swinging supports for the bars allow them, for the comparatively short distance through which they travel, to swing in a sub-

stantially straight line forward and back, and each bar is pivotally connected by links 19 with arms 20, that are secured on the rock-shaft 12. The links 19 may have a common pivot with the links 17 on said bars, and when the rock-shaft is released by the deposit of a coin in the chute the operator grasping the handle 16 will draw it out and move the bars in one direction and then pushing in on the handle return the bars and the rock-shaft to their normal retracted position.

Upon the rear wall of the box near the bars 14 and 15 I provide a horizontal shelf or support 21, which projects forward between the links 18 and supports the rear edges of the papers that are placed in the box. I have shown this shelf of thin sheet metal; but it may be made of other material and in other forms if preferred, it being merely essential to provide sufficient friction to prevent the papers from sliding off when the other supports are moved forward. At the front of the box a movable support 22 is provided, pivoted, preferably, near its outer edge on the bars 14 and 15 and having a thin slightly-rounded inner edge that is adapted to pass between the forward folded edge of the bottom paper and that of the one next above. This forward support being pivoted will automatically adjust itself to any slight inequalities in the thickness of the paper and will yield vertically and slip over any obstruction, where a rigid support would catch and tear the paper or prevent its free delivery. Between the supports 21 and 22 I provide an intermediate support 23, bridging the space between the other supports, but below their level and supported upon arms 24, that are pivoted to the bars 14 and 15 near their rear ends, the pivots being preferably common with those of the links 18. I have shown the supports 22 and 23 composed of thin plates of sheet metal; but it will be understood that these supports may be slatted, if preferred, or made in any suitable form and of any material that will permit them to perform properly the functions for which they are designed.

The forward ends of the arms 24 are supported by hinges 25, having threaded upper ends that are secured in blocks 26, carried by sleeves 27, that are slidable on the links 17, and said blocks have threaded holes to receive the threaded ends of adjusting-rods 28, that are vertically movable in guides 29 near the upper ends of the links 17, and have thumb-nuts 30, by means of which the rods are revolved, the blocks raised or lowered, and the forward ends of the arms 24 adjusted with respect to the rear edge of the support 22. I am thus able to change the position of the support 23 with respect to the forward support and regulate the distance between them according to the thickness of the paper or other article that it is desired to deliver.

During the week the intermediate support will be adjusted according to the thickness

of a daily paper, and on Sunday morning, when unusually large editions are printed, the person filling the box will readjust the intermediate support to accommodate the space between it and the movable support to the increased thickness of the papers to be sold. This adjustment does not have to be very accurate, as the forward support will yield vertically and adjust itself to any slight variation in the paper or any obstruction produced by folding. On each side of the box I prefer to provide rods 31, supported at the top by clips 32 and near their lower ends by brackets 33, and I also provide rods 34, supported at the top and bottom by clips corresponding to those described and passing through the fixed support 21 and slots 35, provided in the intermediate support. These rods upon each side of the space wherein the papers are placed prevent them from coming in contact with the operating mechanism and clogging the machine. I also provide bars 36, adjustably supported in slots 37, provided in brackets 38 on the rear wall of the machine, near the top thereof, and these bars have slots 39 at their lower ends to receive a crank-shaft 40, that is secured at its ends to the rear wall by clips 41 and is oscillated to advance or retract the bars 36 by means of a strap 42, having a slot 43 to receive a thumb-screw 44, that is secured to the rear wall of the box. I am thus able to adjust the bars 36 both at the top and bottom and move them forward away from the wall or back toward the same, according to the depth of the papers with which it is desired to fill the box.

When the delivery mechanism is drawn forward toward the front of the box, the space between the forward and intermediate supports would permit the withdrawal of the papers and enable any maliciously-inclined person to empty the box upon the deposit of a single coin in the chute. To prevent such wholesale discharge of the papers, I provide a mechanism for obstructing the opening between the forward and intermediate supports while said supports are in their advanced position, said obstruction being removed to allow the withdrawal of the bottom paper when the forward support has been pushed back to its normal position. This obstruction consists, preferably, in an oscillating yoke 45, supported by loops or eyes 46 in the rear of the box and having inwardly and downwardly turned points or fingers 47, that are adapted to enter slots 48 and 49 in the forward edge of the intermediate support and the rear edge of the forward support and prevent the withdrawal of the paper until the forward support has been pushed in between the bottom paper and the one above it. To operate said yoke and fingers automatically, I prefer to provide brackets 50 on the arms 14 and 15, having pins 51, that are adapted to travel in cam-slots 52, provided in plates 53, that are secured to the side arms of the yoke 45. The cam-slots are so arranged that

when the forward and intermediate supports are near the limit of their downward movement the yoke will be oscillated and the fingers 47 projected down into the slots in said supports, obstructing the space between said supports and preventing the withdrawal of the paper. (See Figs. 4 and 5.) As soon, however, as the person purchasing a paper pushes in on the handle to thrust the edge of the movable support in between the bottom paper and the one above the obstructing-fingers will be raised, as shown in Fig. 6, and the forward support entering between the folded edges of the bottom paper and the one next to it will separate them and allow the purchaser of the paper to reach in and withdraw it from the box.

To use my improved vending-machine, the cover is raised, and if it is desired to sell newspapers a package of them is placed upon the supports in the box, the arm of the person placing the papers therein being inserted into the vertical slot in the front wall, as described, and when the box is filled the cover is closed and the machine is ready to deliver the papers. As soon as the purchaser has deposited a coin of the proper denomination in the coin-chute the rock-shaft will be released and grasping the handle, which projects through the opening in the front wall, the purchaser will rock the shaft and draw the bars forward toward the discharge-opening. The rear edge of the papers will be supported upon the stationary shelf or support, and the friction between the bottom paper and said shelf will be sufficient to prevent movement of the papers when the oscillating bars and the forward and intermediate supports are moved. When the forward support has been moved a certain predetermined distance, the forward edge of the bottom paper, which with all the others has been placed in the box with the fold toward the front, will drop off the rear edge of the forward support upon the intermediate support beneath. As soon as the bottom paper has disengaged itself from the forward support the bars will have reached the limit of their forward movement, and the purchaser pressing in on the handle will move the bars and the forward and intermediate supports in the opposite direction. The folds in the papers at the front of the box will present rounded edges to the edge of the forward support and permit it to slip easily in between the bottom paper and the one above it, the intermediate support having been adjusted to provide the proper space between it and the forward support. The entrance of the edge of the forward support between the bottom paper and the one above will separate the bottom paper from the others, and as the obstructing-fingers have been automatically withdrawn as soon as the forward support begins its backward movement the purchaser can reach in through the delivery-opening, grasp the edge of the bottom paper, and draw it out of the machine,

and the bars, with their supports, having been returned to their normal position will be locked and prevented from further movement until another coin is deposited in the chute.

I have shown and described the machine as a vending apparatus for newspapers; but it will be understood that folded articles of merchandise having rounded edges between which the forward support or shelf will easily slip and periodicals of all kinds can be placed in the machine and delivered.

I claim as my invention—

1. A vending-machine, comprising a closed box or casing having a delivery-opening, a rear paper-support provided therein, a reciprocating forward support whereon the forward edge of the bottom paper normally rests, an intermediate support whereon the folded edge of the bottom paper rests when said forward support is drawn out from under it and said intermediate support being below the level of said forward support to allow the latter when pushed in to be thrust between said folded edge and the paper next above.

2. A vending-machine, comprising a closed box or casing having a delivery-opening, a fixed paper-support therein whereon the rear edges of the papers rest, a horizontally and vertically reciprocating forward support, an intermediate support whereon the folded edge of the bottom paper rests when said forward support is drawn out from under it said intermediate support being below the level of said forward support to allow the latter when pushed in to be thrust between said folded edge and the paper next above, the vertical oscillation of said forward support allowing it to automatically adjust itself to variations in the folds of the papers.

3. A vending-machine, comprising a closed box or casing having a suitable delivery-opening, a fixed paper-support therein, a reciprocating forward support whereon the forward edge of the bottom paper normally rests, an intermediate support bridging the space between said fixed and forward supports and below the level of the same, and whereon the forward edge of the bottom paper falls when said forward support is withdrawn from beneath it, and pushed in between said bottom paper and the one next above it, and means for adjusting said intermediate support vertically to vary the distance between it and said forward support.

4. A vending-machine, comprising a closed box or casing having a suitable delivery-opening, a fixed paper-support therein, a reciprocating forward support, a pivoted intermediate support bridging the space between said fixed and movable supports and below the level of the same, and means for swinging said intermediate support on its pivots to vary the distance between said forward edge and the rear edge of said forward support, substantially as described.

5. The combination, with a box or casing

having a suitable cover and a delivery-opening, of horizontal bars suspended within said box, a handle for reciprocating said bars toward and from said opening, a fixed support provided in said box for the rear portion of the article placed therein, a forward and intermediate support carried by said bars, the latter being below the level of the former and adapted to receive the forward edge of the article when said forward support is withdrawn from under it and thrust between it and the article next above, substantially as described.

6. In a vending-machine, the combination, with a box having a suitable cover and a delivery-opening, of links pivotally supported in said box, bars carried by said links, a rock-shaft pivotally connected with said bars, a fixed support provided near the rear wall of said box near said bars, a forward and intermediate support provided on said bars and whereon the articles placed in the box are supported, means for moving said bars and said supports toward said delivery-opening and said intermediate support being below the level of the others to support the forward edge of the bottom article when said forward support is withdrawn from beneath the same and thrust between it and the article next above.

7. The combination, with a suitable box or casing having filling and discharge openings, of a fixed support provided within said box, horizontally-reciprocating bars provided near said fixed support, a rock-shaft, arms secured thereon, links connecting said arms with said bars, a handle projecting through said delivery-opening for reciprocating said bars, a forward support mounted on said bars and an intermediate support bridging the space between said forward and said fixed supports and below the level of the same, substantially as described.

8. In a vending-machine, the combination, with a rear support, of reciprocating bars, a rock-shaft pivotally connected with said bars, a pivoted forward support provided on said bars, an intermediate support also pivoted on said bars and extending between said fixed and forward supports and below the level of the same, means for adjusting said intermediate support vertically to vary the distance between it and said forward support according to the thickness of the articles placed thereon, substantially as described.

9. A vending-machine, comprising a closed box or casing having a delivery-opening and rear support, a reciprocating forward support, an intermediate support whereon the folded edge of the bottom article rests when said forward support is drawn out from under it, said intermediate support being below the level of said forward support to allow the latter when pushed in to be thrust between the bottom article and the one next above, and means for obstructing the space between said forward and intermediate supports when they are at or near the limit of their forward movement.

10. In a vending-machine provided with a discharge-opening, the combination, with a fixed support, of a slotted forward and intermediate support, the latter being below the level of the former, means for moving said forward and intermediate supports toward said delivery-opening to withdraw the former from beneath the edge of the article to be delivered and allow it to drop upon said intermediate support, and oscillating fingers provided above said supports, and means for operating them to obstruct the space between said forward and intermediate supports when they are at or near the limit of their forward movement.

11. In a vending-machine, the combination, with a rock-shaft, of bars suspended near the same and pivotally connected therewith, a fixed support, movable supports carried by said bars, one being below the level of the other, slots provided in said movable supports, means for reciprocating said bars, an oscillating yoke, fingers provided thereon to enter said slots and close the space between said movable supports when drawn forward, and means for raising and lowering said fingers as said bars are reciprocated.

12. In a vending-machine, the combination, with the swinging-bars, of a rock-shaft pivotally connected therewith and controlling the movement thereof, a fixed support, movable supports carried by said bars, one being below the level of the other, slots provided in said movable supports, means for drawing said bars forward toward the front of the box, an oscillating yoke, fingers provided thereon to enter said slots when said bars are drawn forward, plates having cam-slots provided on said yoke, and brackets provided on said bars and having pins to enter said cam-slots, for the purpose specified.

13. The combination, with a vending-machine box and the supports therein, of bars pivotally supported on the rear wall of said box, and means for adjusting said bars toward or from said wall to increase or decrease the depth of the space above said supports, substantially as described.

14. The combination, with a vending-machine box and the article-supports provided therein, of bars adjustably supported at their upper ends on the rear wall of said box and having slotted lower ends, a crank pivoted on said rear wall and passing through said slots, and means for adjusting said crank to move said bars toward or from said wall.

15. A vending-machine, comprising a casing having a delivery-opening, a forward re-

ciprocating paper-support whereon the forward edge of the bottom paper normally rests, a second support in the rear thereof and arranged to receive the folded edges of the papers placed one above another when said reciprocating support is swung forward and allow said reciprocating support to be thrust in between the edge of the bottom paper and the one above when returned to its normal position.

16. In a vending-machine, the combination, with a box having suitable supports for newspapers or other articles therein and provided with a vertical slot in its wall, of a cover for said box having a rib, and a door adapted to close said slot and be locked by the engagement of said rib therewith.

17. In a vending-machine, the combination, with a closed box having a delivery-opening, of a shelf provided within said box near the rear wall thereof, a plate pivotally supported near said delivery-opening, a second plate between said first-named plate and said shelf and below the level of the same and whereon the forward edge of the bottom article drops when said first-named plate is drawn forward from beneath the said article, means for locking said first and second named plates, and means for reciprocating them when released to draw said first-named plate from under the bottom article and insert its rear edge between said article and the one above.

18. A vending-machine, comprising a casing having a delivery-opening, reciprocating means whereon the forward edges of the articles to be sold are supported, and a suitable support in the rear of said reciprocating means and arranged to support the articles when said reciprocating means is drawn forward and to allow said reciprocating means to be pushed in between the bottom article and the one above when returned to its normal position.

19. A vending-machine, comprising a casing having a delivery-opening, a reciprocating forward support whereon the forward edges of the articles normally rest, said forward support being adjustable to permit it to be thrust in between the edge of the lower article and the one above when returned to its normal position, and means for supporting the articles when said support is withdrawn from beneath them.

In witness whereof I have hereunto set my hand this 26th day July, 1902.

ROMAIN M. GREEN.

In presence of—

THOMAS J. DAVIS,
S. IRVINE.