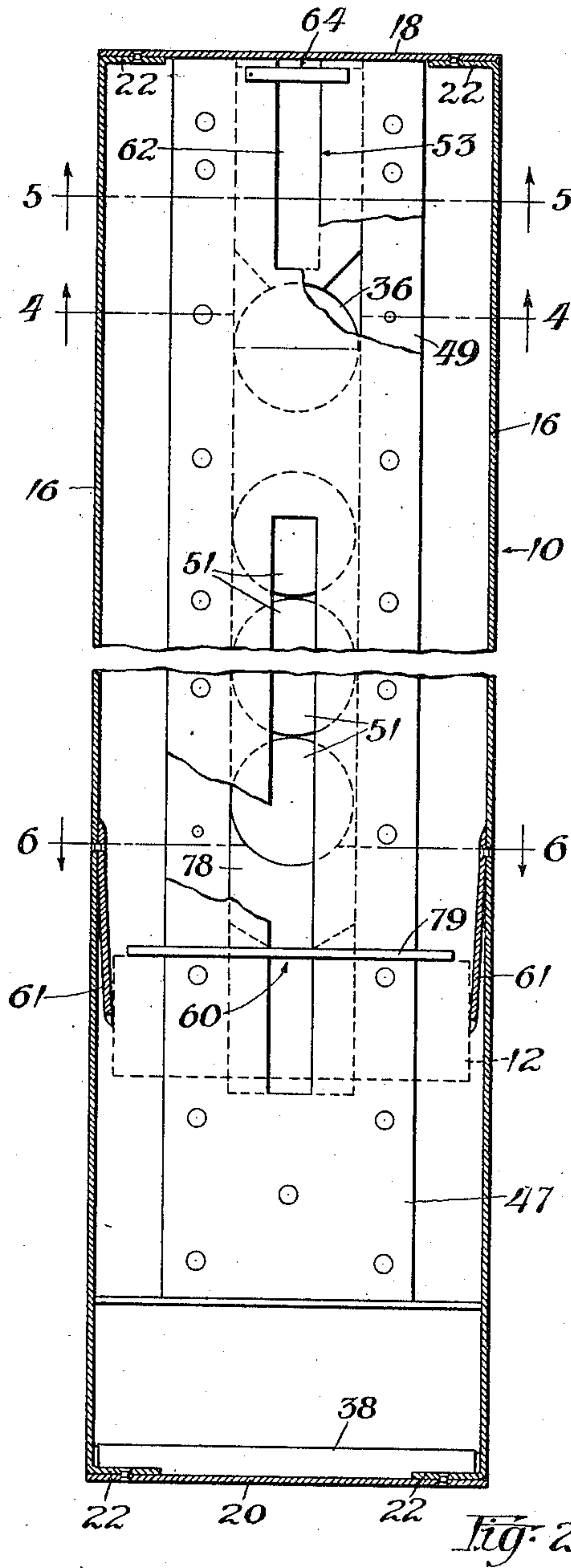
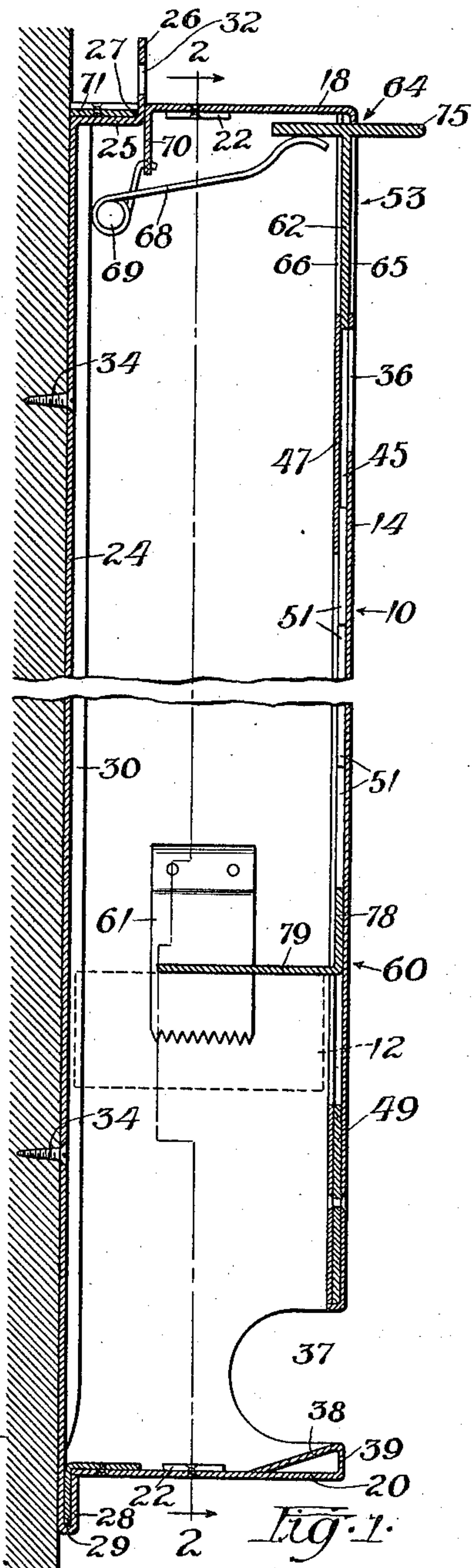


C. E. BRIDGES.
VENDING DEVICE.
APPLICATION FILED FEB. 1, 1909.

996,610.

Patented July 4, 1911.

2 SHEETS-SHEET 1.



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J. M. J. Andrews.

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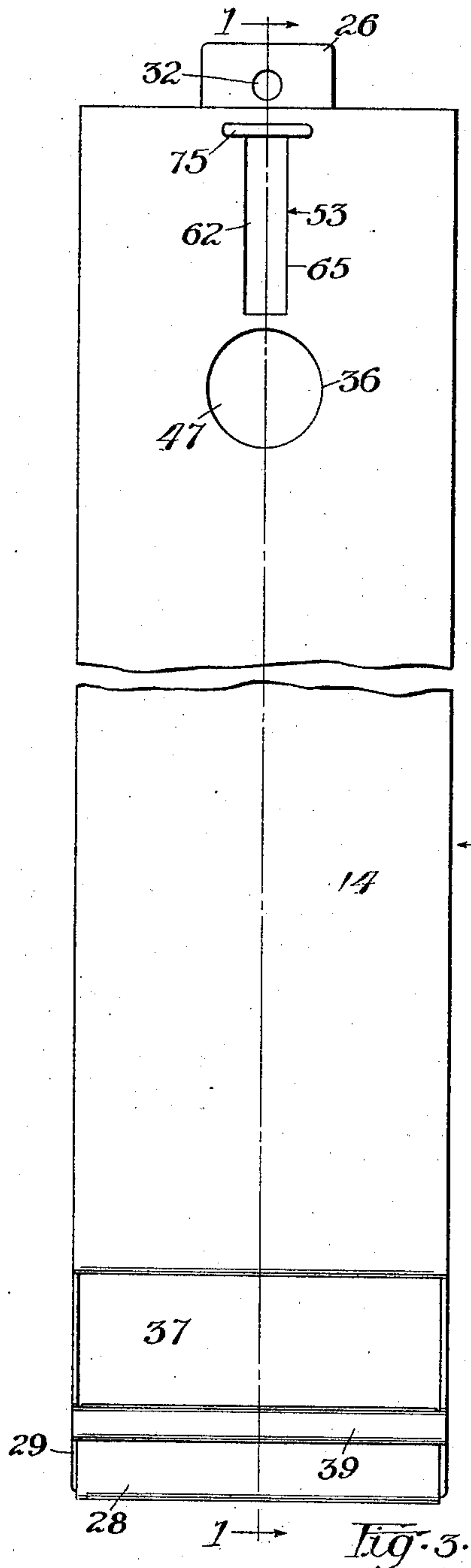


Fig. 3.

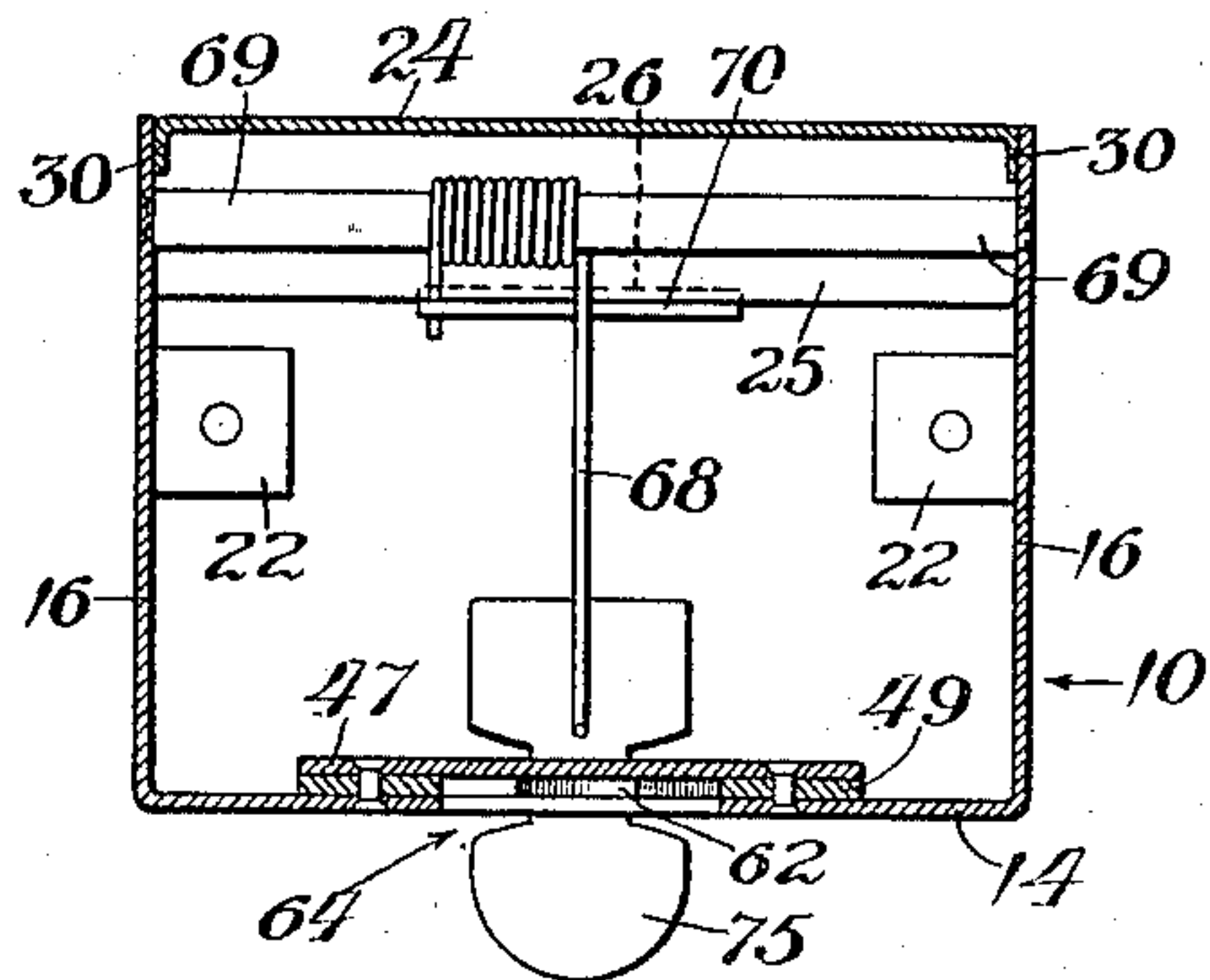


Fig. 4.

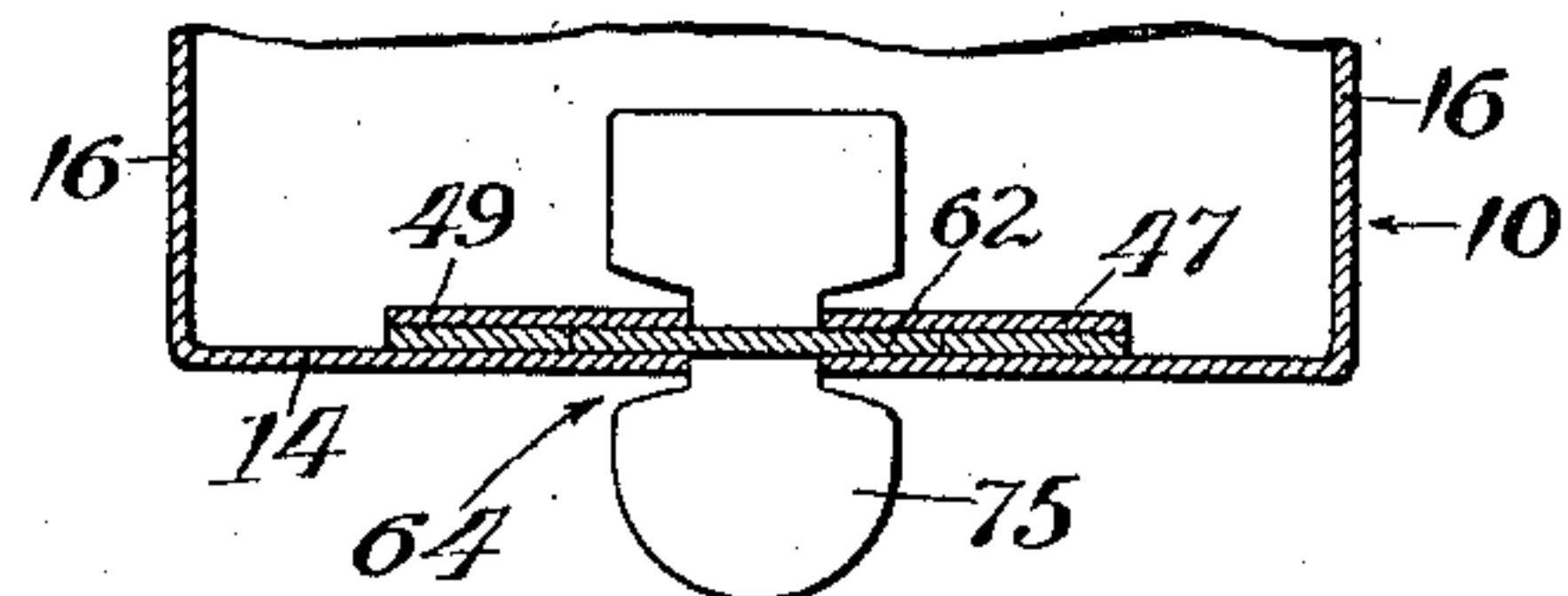


Fig. 5.

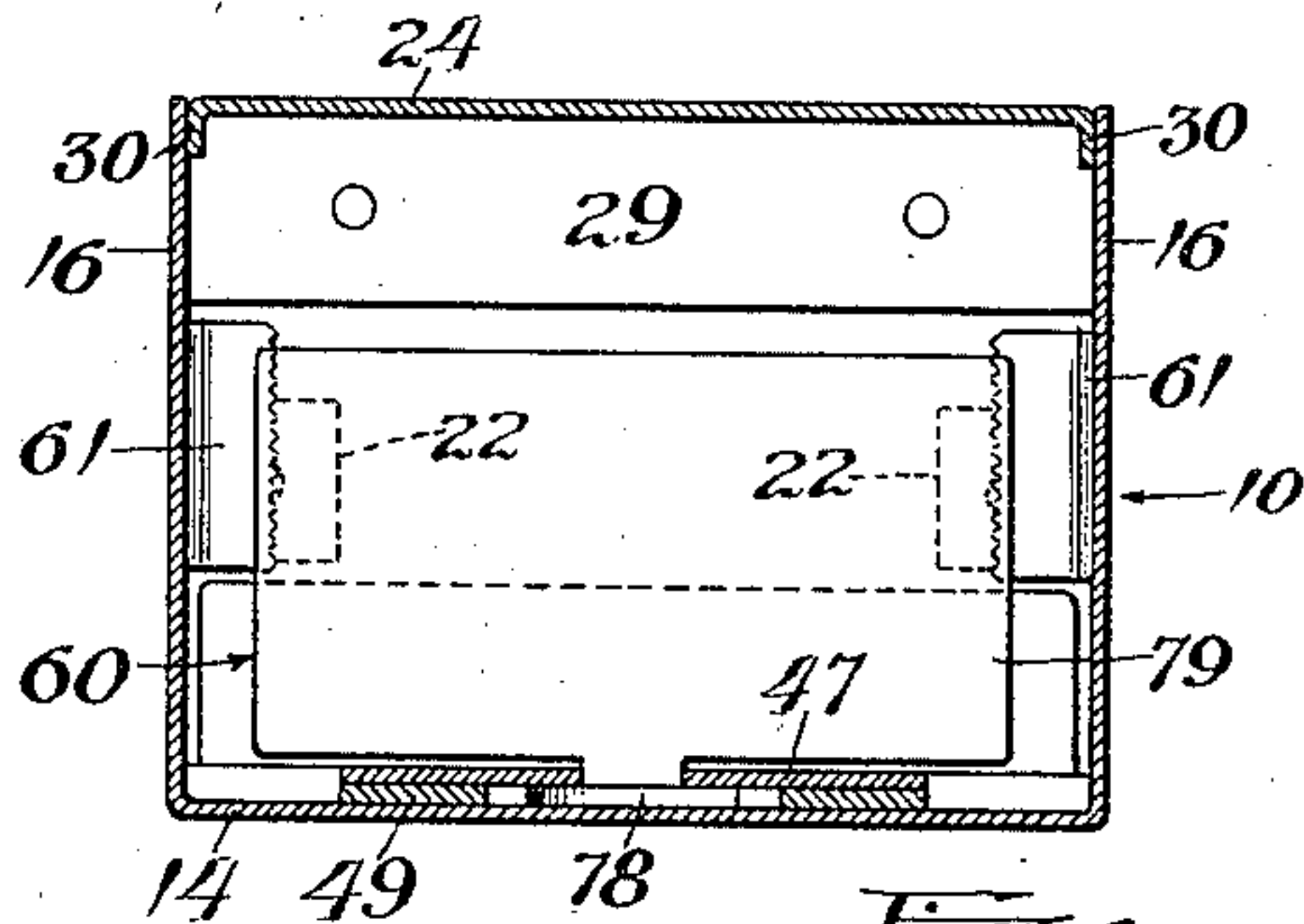


Fig. 6.

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UNITED STATES PATENT OFFICE.

CHARLES E. BRIDGES, OF CHICAGO, ILLINOIS.

VENDING DEVICE.

996,610.

Specification of Letters Patent.

Patented July 4, 1911.

Application filed February 1, 1909. Serial No. 475,537.

To all whom it may concern:

Be it known that I, CHARLES E. BRIDGES, a citizen of the United States, residing at 1311 Leland avenue, Chicago, in the county of Cook and State of Illinois, have invented a new and useful Vending Device, of which the following is a specification.

This invention relates to mechanical vending devices, and has for one of its objects the production of a device which will fulfil all of the requirements of the vending machines in common use, but which can be more cheaply and simply manufactured than any of the vending machines of ordinary form, and which also, by reason of its very simple mechanism, presents a minimum susceptibility to mechanical derangements. Likewise, it is practically impossible for a machine operating upon the principle of the device hereinafter described to "make mistakes," which not only impair the usefulness and efficiency of the more complicated machines, but also entail some little expense in their maintenance.

A further object of the invention is the production of a device which is neat and attractive in its appearance, and strong and durable in its construction, and which occupies a minimum amount of space upon a wall or counter, or other place where it may be used.

A vending machine embodying the principles of the present invention is hereinafter described, and pointed out in the appended claims, and is illustrated in the accompanying drawings, in which:

Figure 1 is a view showing the device in longitudinal vertical section, the same being taken on line 1—1 of Fig. 3. Fig. 2 is a view showing the device in transverse vertical section, with parts broken away, said section being taken on line 2—2 of Fig. 1. Fig. 3 is a view in front elevation. Fig. 4 is a horizontal section on the line 4—4 of Fig. 2, looking in the direction indicated by the arrows. Fig. 5 is a horizontal section on the line 5—5 of Fig. 2, looking in the direction indicated by the arrows. Fig. 6 is a horizontal section on the line 6—6 of Fig. 2, looking in the direction indicated by the arrows.

As shown in said drawings, the device consists of a receptacle or container for holding the articles to be vended, and means therein for feeding out, or vending, the articles one at a time, said means being con-

trolled by the insertion of coins into the device. Within the spirit of the present invention, as pointed out in the appended claims, said case may assume various forms, and the feeding mechanism is also capable of wide variation, but as here shown, said case consists of a vertically arranged box or tube, relatively long and narrow, in which are placed the articles to be vended, one above the other in a single column. Said box, as here shown, is provided at its upper end with an opening for the introduction of a coin, and at its lower end with another for the delivery of the articles, and the feeding mechanism is adapted to feed the articles downward one at a time. Said box or case, which is designated as a whole by the figure 10, is here illustrated as rectangular in horizontal section, being arranged to vend small rectangular boxes of safety matches of familiar form, one of which is indicated in dotted outline at 12 in Figs. 1 and 2. The box 10 is conveniently made of sheet metal, being bent to form a front wall 14, and integral side, top and bottom walls, 16, 18 and 20 respectively. The said side walls are bent over at their ends in the form of flanges 22, 22, which are riveted to the top and bottom walls. The back wall, 24, is detachable, and is intended to be fixed to a wall or post of a building, or other solid object, and to be locked in place upon the box as a cover. For this purpose, it is bent horizontally at its upper end in the form of a flange, 25 (Fig. 1), the center portion of which is extended and bent upwardly in the form of an ear or flange 26, (Figs. 1 and 3), which is adapted to pass through a transverse slot 27, (Figs. 1 and 4) in the top wall of the box. The lower end is bent back parallel to itself to form a hook, 28, which engages with a downwardly directed vertical flange 29, formed integral with, or riveted to the bottom wall, 20, of the box. The vertical edges of said back wall are bent inward in the form of flanges, 30, 30, (Figs. 4 and 6) which lend stiffness, and close the crack at the meeting edges of the side and back walls. The ear 26, is provided with an opening, 32, for the insertion of the arm of a pad-lock, whereby the said back wall or cover, 24, is locked in place. Said cover is adapted to be fixed to a wall or post by means of screws, 34, 34, which are covered when the box is closed, whereby the same is prevented from being opened, or stolen.

The heads of said screws may be counter-sunk to prevent their interference with any of the working parts of the device. The box is opened upon removing the pad-lock, by raising the same until the ear 26 and the hook 28, disengage from the related parts of the box.

The front wall 14 is provided at its upper part with an opening 36 for the insertion of a coin or other means, through the medium of which the device may be intended to operate, and at its lower end with a rectangular opening 37 for the delivery of the articles which are vended. Said latter opening is formed by cutting through the wall around three sides of a rectangle, and bending the detached portion, 38, along the fourth side (Fig. 1), whereby a neat edge is formed, and removal of the articles over the bottom marginal portion, 39, of the front wall is facilitated. The side walls adjacent to said opening, 37, are also partially cut away for convenience in removing the articles (Fig. 1).

The hole 36, through the front wall 14 of the box, opens into a vertical shaft or groove, 45, formed upon the inner surface of said wall, by means of a vertical plate 47, arranged parallel to said wall and riveted thereto, but spaced a small distance therefrom by means of an intermediate plate 49, the latter having a long vertical slot cut in its center portion to form said shaft. Into said shaft the coins, or other operating media, 51, 51, are introduced through said opening 36. The horizontal dimensions of said shaft 45 are just slightly larger than the dimensions of the coins, so that the latter may be a sliding fit therein, but are restrained from moving in any direction except vertically. As here shown, its width and depth are proportioned respectively to the diameter and thickness of the coins, its length depending upon the intended capacity of the device. In the upper part of said shaft 45 is a plunger, 53, by means of which each coin, as it is introduced into the shaft, is pushed downward in the same, the first coin introduced being pressed, either by the plunger, or by the coin or coins above it, as the case may be, against a rider 60 which is thus forced downward in successive steps, each of a distance equal to the diameter of one of the coins, and expels the contents of the box, said contents being normally maintained in place by the frictional resistance of a pair of springs 61, bearing against the lowermost one of a column of packages, or other articles placed in the box 10. The coins constitute operating media, by means of which the contents of the box are downwardly displaced, and the device operated to vend the articles. Referring to the details of construction of these parts, said plunger, which has the form in transverse vertical section of the letter T, (Fig. 1), con-

sists of a flat plate or disk portion, 62, and a double horizontal flange 64, made integral therewith. Said disk portion 62 is arranged to be a sliding fit in the upper end of the shaft 45, and the adjacent portions of the flange 64, which connect with said disk portion, slide in vertical slots, 65 and 66, cut in the wall 14 of the box, and the plate 47 respectively, for their accommodation. In its upper position the plunger clears the opening 36, permitting the insertion of coins into the shaft 45, and its travel is such as to push each coin downward a small distance below said opening, as indicated by the dotted outline of the topmost coin in Figs. 1 and 2. The lower marginal edge of the disk portion 62 may conveniently be concave in outline as indicated. Said plunger 53 is held yieldingly in its upper position by means of a coil springs, 68, coiled about a transverse shaft 69, one end of which spring bears against the under surface of that part of the flange 64 which lies within the box 10, such part of the flange being laterally extended or widened as shown in Figs. 4 and 5. The other end of said spring bears against a vertical flange 70 formed by cutting through the top wall 18 along three sides of a rectangle, and bending the detached portion downward along the fourth side. The opening thereby left in the wall 18 is covered by a strip 71 (Figs. 1 and 4), of such width as to leave the slot 27 above referred to. The end of said spring 68, which bears against the flange, is inserted through a hole therein to prevent accidental displacement. The portion of the flange 64 without the box, is also laterally extended, and forms a key 75, which is pressed downward by a person operating the device. It may be rounded in outline (Figs. 4 and 5).

The rider 60, which acts to expel the articles to be vended through the medium of the coins 51, comprises a shank portion 78, sliding in the shaft 45, and an integral horizontal flange or plate 79. The connecting portion of these parts is accommodated in and slides in a long vertical slot 81, cut in the plate 47. The plate 79 rests against the top surface of the column of articles to be vended and acts successively to push them downward, at each operation a distance equal to the diameter of one of the coins. The lowermost one of said articles is held in place by the frictional resistance of the springs 61, which are riveted to the side walls 16 at their upper ends, and press against the articles at their lower ends. The lower ends of said springs may be formed with downwardly pointing teeth, as indicated, which, by sticking into the package pressed between them, prevent the same from being pushed upward, by a person tampering with the device, to expel the coins from the top. The upper ends of said springs are

beveled to prevent their obstructing the downward passage of the articles between them. As illustrated in the drawings, all but one of the articles have been vended, the remaining articles (indicated in dotted outline by Fig. 12), having the plate 79 resting on its top surface, and being maintained in place by the springs 61. Upon the vending of the last article, the plate 79 will assume a position below the lower ends of the springs 61, and is prevented by them from being pushed upward to expel the coins from the device. In this position also, the shank 78 rests against the unslotted portion of the plate 49, or the bottom of the shaft 45, thereby preventing another coin, which may be inserted through the opening 36, from being pushed downward into the shaft 45; thus indicating that the machine is "empty".

In operation, the rider 60 is slid to its topmost position, and the space below it filled with a column of articles to be vended, the bottom one being grasped by the springs 61. The box is then closed, as above described, the back wall 24 being fixed to a wall, post or other support. Persons desiring to operate the device will then insert coins through the opening 36, and push each one downward by means of the key 75 and plunger 53, each operation expelling one of the articles into the bottom part of the box, where it may be removed through the opening 37. When all of the articles have been vended, the box is disengaged from its back wall and inverted, allowing the coins to slide to the top of the shaft 45, and out through the opening 36. The springs 61 may be then separated and the rider 60 again raised, and the box refilled.

I claim as my invention:

1. A vending device in which the articles to be vended are arranged in a row, a shaft arranged parallel therewith and adapted to receive a number of operating media, said shaft being of such dimensions as to cause said operating media to arrange themselves in a row therein, means for imparting movement to said row of operating media, and means actuated by the movement of said row of operating media, and engaging directly with said articles, whereby in the operation of the device, said first row is decreased in length and said second row increased in length, but the aggregate length of said two rows is not varied.

2. In a vending device, a receptacle, the contents of which are arranged in a row, a shaft of substantially equal length arranged parallel therewith and adapted to receive a number of operating media, said shaft being of such dimensions as to cause said operating media to arrange themselves in a row therein, means for imparting movement to said row of operating media, and means operating within said shaft, actuated by the

movement of said operating media, and engaging directly with the contents of said receptacle, whereby, in the operation of the device, the number of parts constituting each of said two rows is varied without varying the aggregate length of said two rows.

3. In a vending device, a receptacle for the articles to be vended, a shaft adapted to receive a plurality of operating media, means for imparting movement to said media in said shaft through each operation a distance equal to one of the dimensions of one of said media, and a rider in said shaft, actuated by the movement of said media and engaging directly with said articles, for displacing said articles a distance equal to the distance through which said media are moved.

4. In a vending device, a receptacle adapted to contain a plurality of articles to be vended, arranged in a row, means for yieldingly maintaining said row in position in said receptacle, a shaft substantially equal in length to said row and arranged parallel therewith and means for receiving an operating medium in said shaft at a point adjacent to one end of said row, a delivery opening in said receptacle near the opposite end thereof, means for imparting endwise movement to said operating medium in said shaft at each operation through a distance equal to one of the dimensions of said medium, and a rider moving in said shaft and adapted to move through substantially the entire length thereof, said rider being actuated by the movement of said operating medium and engaging directly with said row of articles whereby said row is displaced toward said delivery opening, at each operation, a distance equal to the distance through which said operating medium moves.

5. In a vending device, a receptacle adapted to contain a plurality of articles to be vended, arranged in a row, means frictionally engaging with one of said articles at one end of said row, a shaft arranged parallel to said row, a delivery opening in said receptacle near the first mentioned end of said row, and a rider moving in said shaft, and engaging directly with said row of articles, whereby said row is displaced toward said delivery opening at each operation, a distance equal to the distance through which said rider moves.

6. A vending device in which the articles to be vended are arranged in a row, a shaft arranged parallel therewith and adapted to receive a number of operating media, said shaft being of such dimensions as to cause said operating media to arrange themselves in a row therein, means for imparting movement to said row of operating media, through each operation a distance equal to one of the dimensions of one of said media, and means actuated by the movement of said

row of operating media and engaging directly with said row of articles, whereby, at each operation of the device, said row of articles is displaced a distance equal to the
5 distance through which said row of operating media is moved.

In testimony whereof I have hereunto

affixed my signature, in the presence of two witnesses, this 25th day of January, 1909.

CHARLES E. BRIDGES.

Witnesses:

SIDNEY E. LEVY,
LOUIS COHEN.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."
