

No. 814,332.

L. C. SPOONER.
VENDING MACHINE.
APPLICATION FILED AUG. 6, 1904.

PATENTED MAR. 6, 1906.

3 SHEETS—SHEET 1.

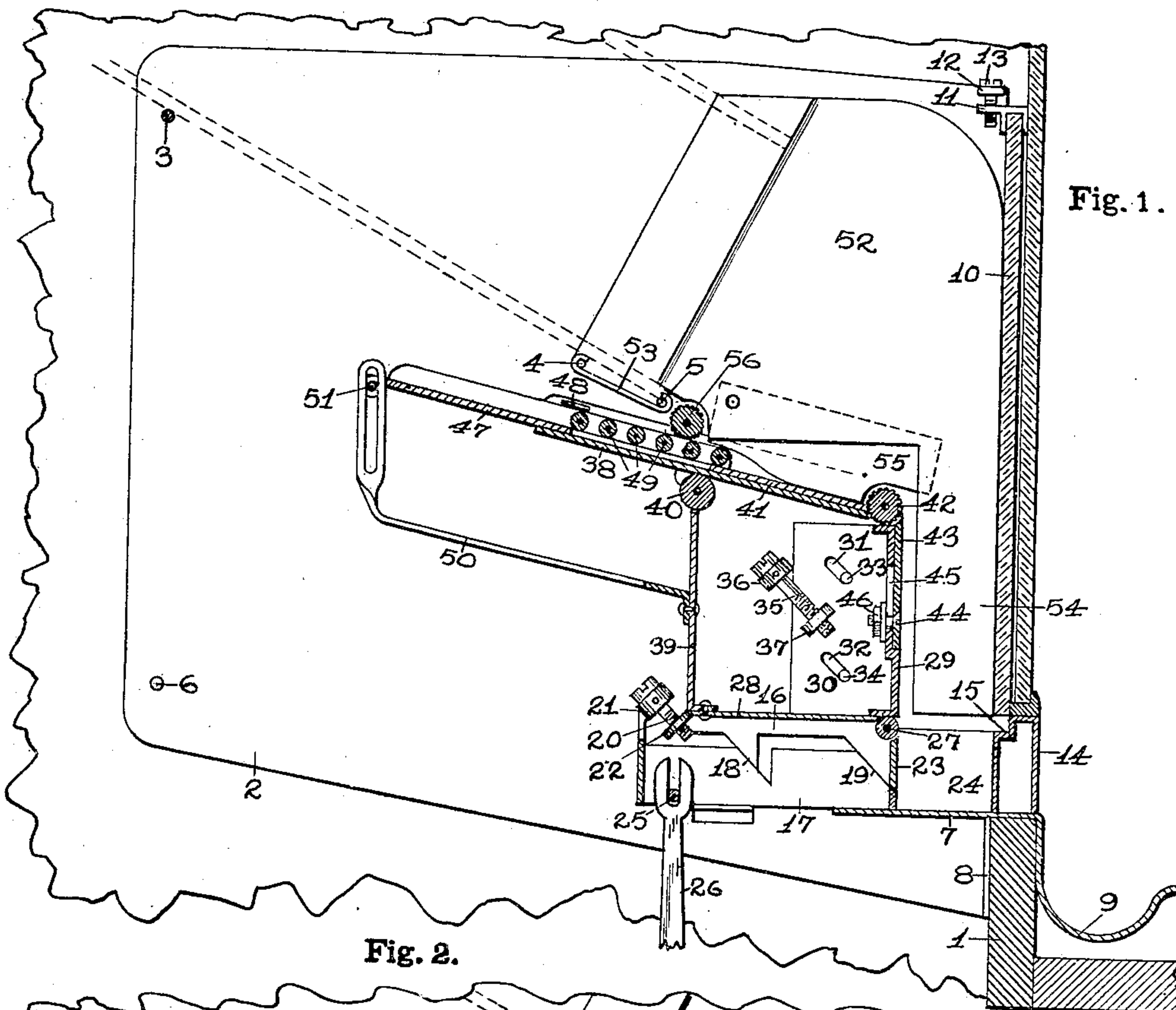
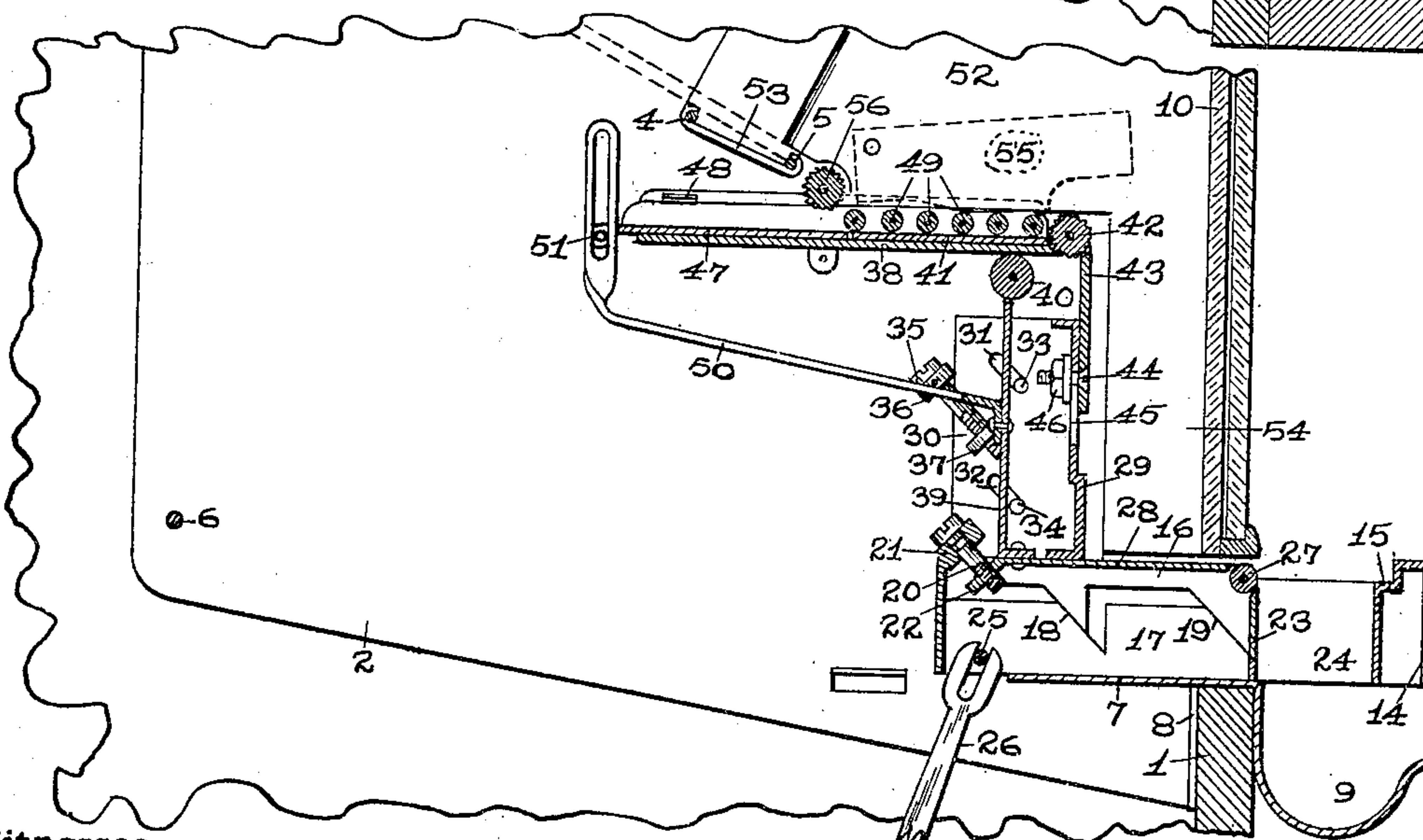


Fig. 2.



Witnesses.

H. J. Whitaker
J. F. Reiser

Inventor, L. C. Spooner,
By *Carroll & Co.*
Attorneys.

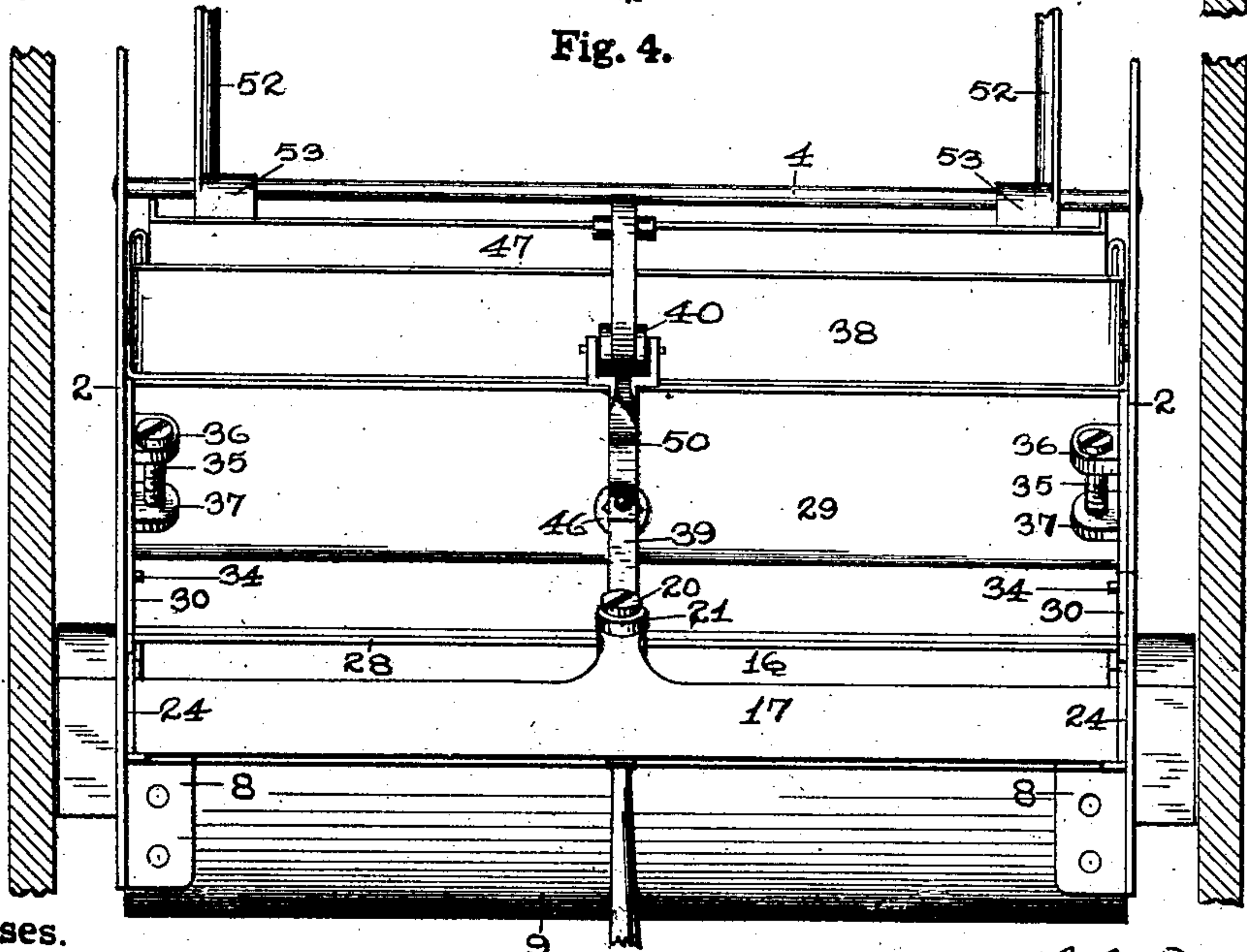
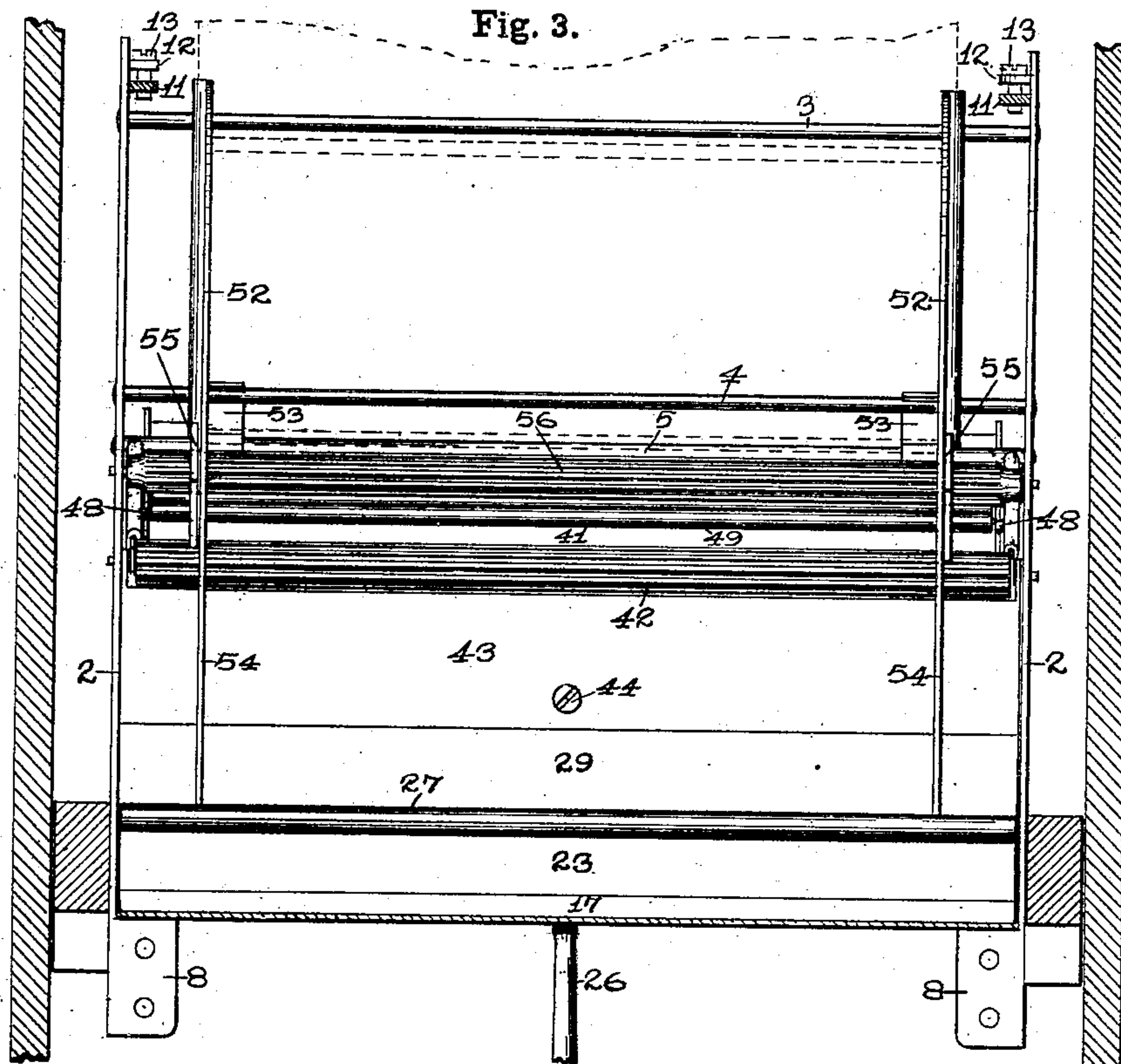
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3 SHEETS—SHEET 2.



Witnesses.

H. J. Whitaker.
And F. Reiner.

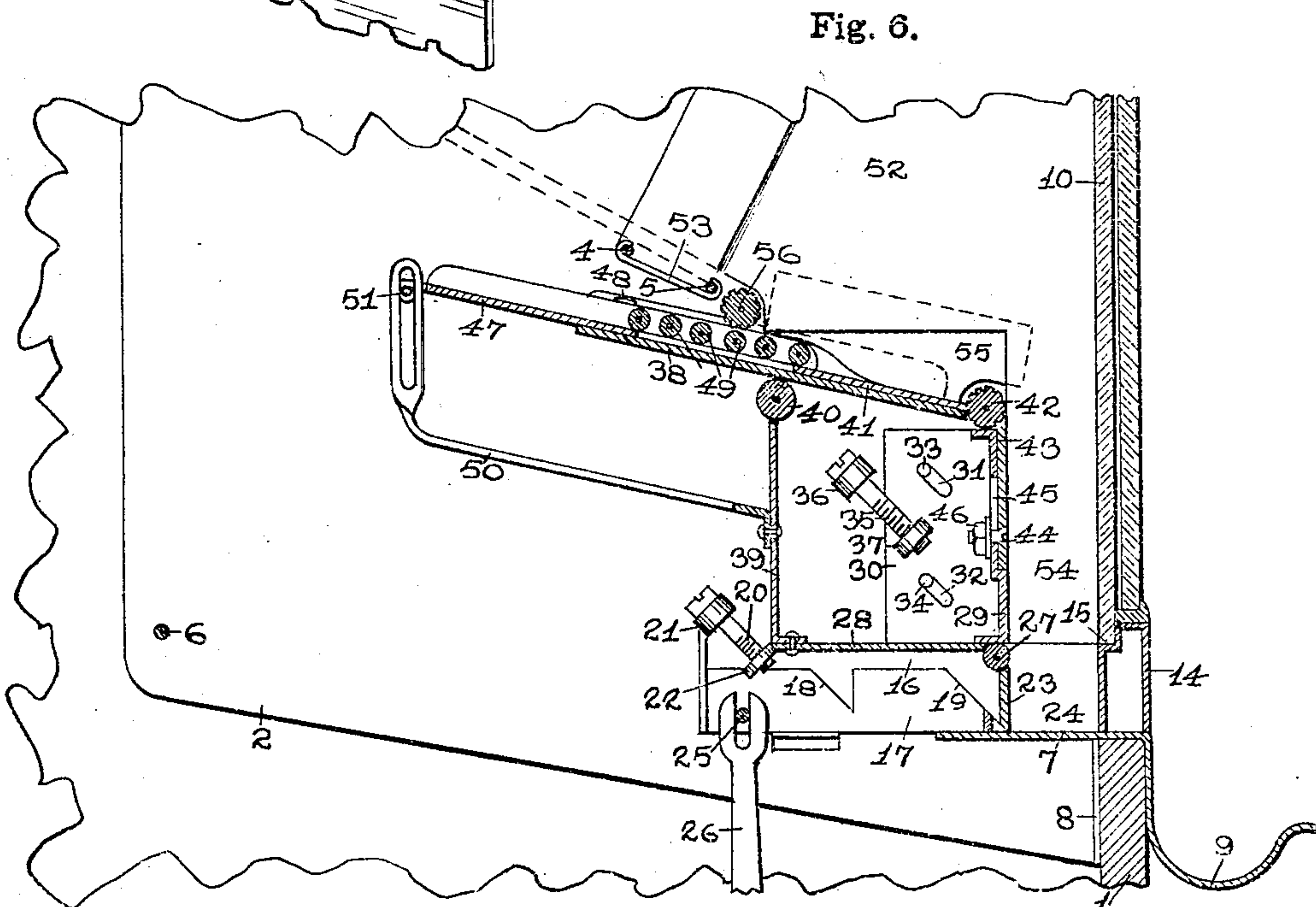
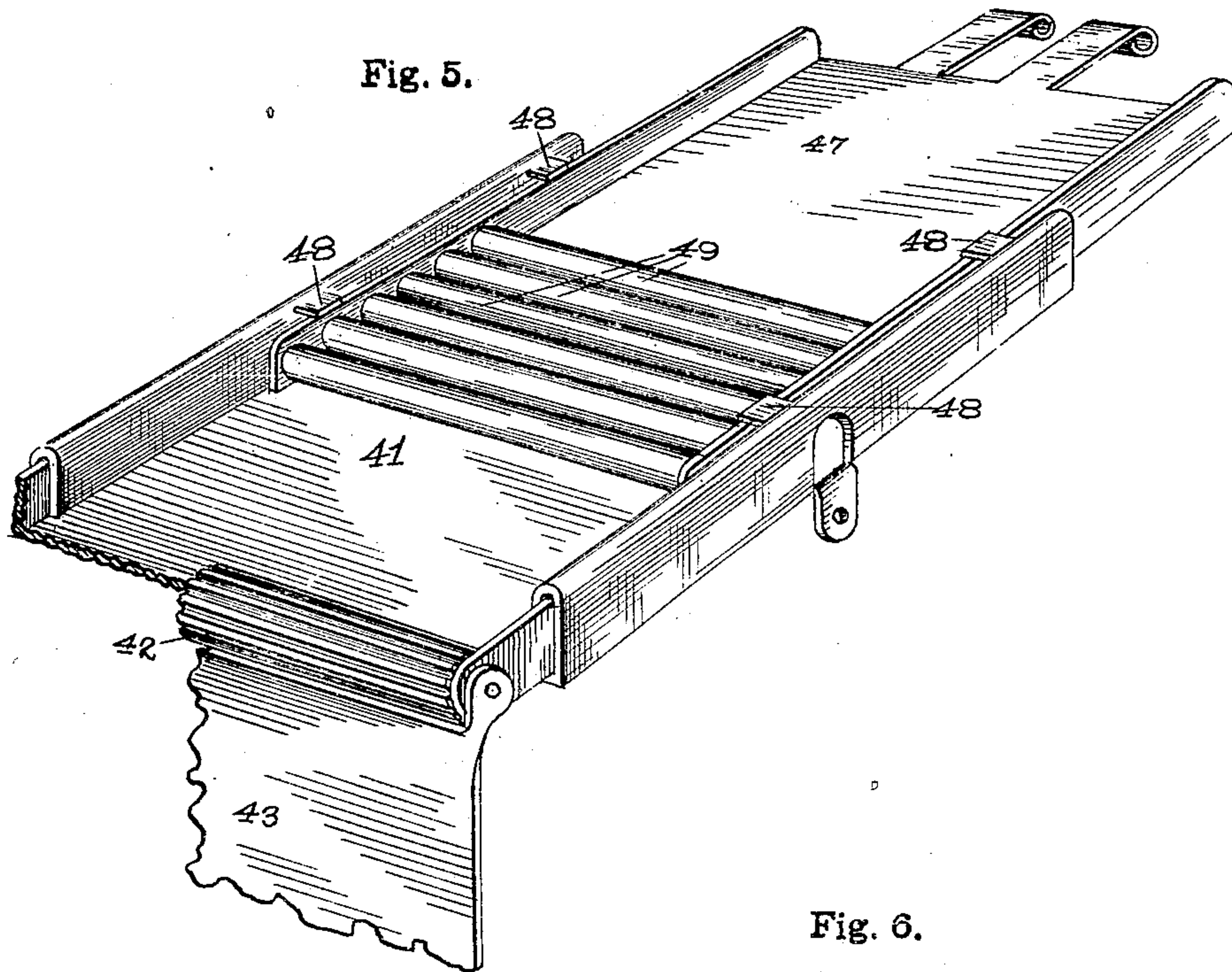
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APPLICATION FILED AUG. 6, 1904.

3 SHEETS—SHEET 3.



Witnesses.

H. J. Fletcher.
Wm. F. Reimer.

Inventor, L. C. Spooner.

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Attorneys.

UNITED STATES PATENT OFFICE.

LEE C. SPOONER, OF ST. LOUIS, MISSOURI, ASSIGNOR TO THE PETER MANUFACTURING COMPANY, OF ST. LOUIS, MISSOURI, A CORPORATION OF MISSOURI.

VENDING-MACHINE.

No. 814,332.

Specification of Letters Patent.

Patented March 6, 1906.

Application filed August 6, 1904. Serial No. 219,734.

To all whom it may concern:

Be it known that I, LEE C. SPOONER, a citizen of the United States, and a resident of the city of St. Louis and State of Missouri, have invented a new and useful Improvement in Vending-Machines, of which the following is a specification.

My invention relates to vending-machines, and especially to machines for vending cigars. Its principal objects are to provide a machine which may be adjusted for different sizes of cigars, so that the operation upon one size shall be identical with the operation upon another size, to arrange the cigars as they come from the box in a column from which the bottom cigar is ejected, to provide improved means for feeding the cigars into the chute in which the column is formed, to provide an agitating-platform having a reciprocatory feed-slide, and other objects hereinafter more fully appearing.

My invention consists in the parts and in the arrangements and combinations of parts hereinafter described and claimed.

In the accompanying drawings, forming a part of this specification, and wherein like symbols refer to like parts wherever they occur, Figure 1 is a vertical sectional view of the delivery mechanism, the parts being adjusted to accommodate the largest cigars and the ejecting mechanism being in its rearmost position. Fig. 2 is a vertical sectional view similar to Fig. 1, the ejecting mechanism being shown in the foremost position assumed in delivering a cigar. Fig. 3 is a front view of the mechanism shown in Fig. 1, the adjustable plate and parts in front thereof being removed. Fig. 4 is a rear view. Fig. 5 is a perspective view of parts of the machine; and Fig. 6 is a vertical sectional view similar to Fig. 1, the parts being adjusted to accommodate the smallest cigars.

The case for the working parts herein described may be of any desired form. Hence only the front bar 1, to which the mechanism is connected, need be referred to. The frame of the mechanism comprises side plates 2, which are connected by rods 3 4 5 6 and a plate 7. The side plates are each provided with inwardly-turned ears 8. The plate 7 has a downwardly-turned extension, which is

formed into a cigar-receptacle 9. Between the ears 8 and the downwardly-turned portion of the plate 7 the bar 1 of the case is embraced. Screws passing through the ears 8 into the bar 1 secure the frame in the case. While this is the preferred construction, it is to be understood that the case can be made the frame of the mechanism, if desired.

A plate 10, provided with tapped ears 11, depends at the extreme front of the frame. Ears 12 are provided at the front upper corners of the side plates 2. Screws 13 extend through the ears 12 into the tapped ears 11, secured to the plate 10. By this means the plate may be raised and lowered. The slot through which the cigars are ejected occurs between the lower edge of the plate 10 and the upper surface of the plate 7. Hence it follows that the width of the discharge-slot is adjustable. This plate 10 is preferably made of glass, so that the cigars in the chute may be seen by the operator.

The cigars are ejected by a slide having a slot-closing bar 14. This bar is preferably made of sheet metal and is so shaped as to provide a rabbet 15 at its rear upper corner, into which the adjustable plate 10 may descend when lowered. The body of the ejecting-slide is adjustable and consists of an upper frame 16 and a lower frame 17. The sides of the two frames are provided with corresponding forty-five-degree inclines 18 19. A screw 20, extending in a direction parallel with the inclines, turns in a bearing 21 on the lower frame 17 and engages a tapped hole in the rear cross-bar 22 on the upper frame. By this means the upper frame may be adjusted downwardly and forwardly, its front plate 23 being carried forward to narrow the cigar-receiving opening in the ejecting-slide. Side plates 24 are rigidly secured to the sides of the lower frame and extend forward therefrom and connect with the slot-closing bar 14. A rod 25 extends from side to side of the lower frame 17. This rod is engaged by the bifurcated end of an actuating-lever 26. The actuating mechanism may be of any desired type, and hence no particular form is shown. The upper frame has a roller 27 at its front upper corner and a top plate 28. The roller is provided to prevent injury to the cigar

above the one being ejected, and the plate 28 affords a smooth bottom for the column while the ejecting-slide is forward of its normal position.

5 The rear wall 29 of the chute through which the column of cigars moves has side flanges 30, provided with slots 31 32, the axis of the slots being at an angle of forty-five degrees to the horizontal. Pins 33 34, secured
10 to the side plates 2, enter the said slots and support the wall. Adjusting-screws 35 work in bearings 36, mounted on the side plates 2, and in tapped lugs 37, mounted on the flanges 30. The screws are arranged parallel to the
15 slots. The wall is thus capable of forward and downward movement to reduce the width of the chute and to close up the gap that would be otherwise left when the ejecting-slide is reduced in height by adjustment.
20 The wall is offset intermediate of its ends by an amount equal to the thickness of an apron, hereinafter described.

The cigars are fed forward into the chute by means of an oscillatory agitating-platform
25 and a reciprocating feed-slide thereon. The platform 38 is pivoted intermediate of its ends at such a height that when its front end rests upon the rear wall of the chute it will be inclined considerably. This platform is os-
30 cillated by means of an upright 39, secured to the ejecting-slide and having a roller 40 at its upper end to engage the bottom of the platform. As the ejecting-slide moves forward the platform is oscillated until it occu-
35 pies a substantially horizontal position. As the ejecting-slide moves backward the platform falls to its normal position.

A mounting-plate 41 is slidably mounted
40 on the platform. The edges of the platform 38 are turned up at right angles to the body thereof and rebent, thus forming grooves. In these grooves the upturned flanges of the mounting-plate 41 enter. Upon the front of
45 the mounting-plate a roller 42 is mounted. This roller alines the cigars as they enter the chute. It arranges the cigar immediately over the last cigar in the column in such position that it will freely fall into the chute in the proper position. The oscillation of the
50 platform carries it up and down, during which movement it rolls on the cigars in front of it and alines them one on top of another. To prevent the jamming of cigars in the space left vacant between the roller 42 and
55 the top of the rear wall 29 when the platform raises the roller to its highest position, an apron 43 is pivoted upon the mounting-plate 41. The apron falls into the recess formed in the front face of the wall 29 by offsetting
60 the wall, as described above. A bolt 44 is secured in the apron and extends through a slot 45 in the wall of the chute. A nut and washer on the bolt secure the apron so that it can-

not move away from the wall, though not so tightly as to interfere with movement up and
65 down with the front end of the oscillating platform 38. As the wall 29 is adjusted forwardly by means of the adjusting-screws 35 the apron 43 moves with it and pulls the mounting-plate 41 and roller 42 forward with
70 it. Thus whatever the adjustment the roller 42 will move up and down as nearly in the plane of the rear wall 29 of the chute as the curvature of its path will permit.

The reciprocating feed-slide 47 on the os-
75 cillating platform 38 consists of a plate having upturned flanges and forwardly-extending arms. Ears 48, struck up from the rebent portions of the platform 38, together with the bottom of the platform, form guides between
80 which the slide may move. The arms extend forwardly over the mounting-plate 41 and slide upon the same. Upon the arms small rollers 49 are so mounted that they do not touch the mounting-plate when moved
85 forward over it. The number of these rollers is determined by the dimensions of the machine. There should be enough to reach from the roller at the end of the box to the roller 42 on the mounting-plate. The rollers
90 should be very small compared with the diameter of the cigars to be vended. The roller 42 should be mounted so low that the plane of the axes of the rollers 49 shall pass above its axis. Then it will be impossible to squeeze
95 a cigar between the front roller of the slide and the roller 42. The slide is reciprocated simultaneously with the oscillation of the platform by means of the arm 50, mounted on the upright 39. The upper end of the arm
100 is slotted. A pin 51, secured to the rear edge of the slide, extends through the slot. Thus the arm 50 positively actuates the slide both forward and backward.

The cigar-box is to be seated on the rods 3
105 4 5. It rests at its front end against shoulders in adjustable guide-plates 52, which slide on the rods 4 5, being mounted thereon by integral snap-clamps 53. The guide-plates have legs 54, which extend down into
110 the chute. The legs have a width equal to the minimum width to which the chute can be adjusted. They are short enough to permit the ejecting-slide to pass beneath them. The guide-plates are recessed on their lower
115 sides to permit oscillation of the platform 38. To keep cigars from getting under the guide-plates, wings 55 are pivoted on them and rest on the platform, rising and falling with it. These guide-plates may be adjusted to suit a
120 cigar of any desired length.

In operation the cigar-box is seated on its supporting-rods and rests against the shoulders on the guide-plates, the front end of the box having been removed. The cigars roll
125 down the inclined platform and into the

chute, which becomes filled with them, the bottom cigar lying in the cigar-receiving opening of the ejecting-slide and filling the same. When the actuating-lever moves forward, the ejecting-slide moves with it and carries the bottom cigar out through the discharge-slot and drops it in the receptacle. At the same time the platform is oscillated, agitating the cigars above it and alining the cigars at the top of the chute. The slide also moves forward, loosening the cigars and imparting a tendency to roll downward. When the actuating-lever recedes, the parts resume their normal position and the cigars in the chute settle down, a new cigar occupying the cigar-receiving recess of the ejecting-slide. A roller 56 is arranged just in front of the bottom of the cigar-box when in position on the frame and with its top on a level with the top surface of the box-bottom. Thus a rounded surface is provided at this point and injury to cigars due to rearward movement of the feed-slide is prevented. If a cigar should be pressed upon the roller 56, the latter would turn and guide the cigar up, and thus it would be relieved from the pressure.

Obviously my machine is capable of considerable modification within the scope of my invention, and therefore I do not wish to be limited to the specific construction shown and described.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. A vending-machine comprising a frame provided with a chamber to contain the articles to be delivered, an ejecting member, a chute leading from said chamber to said ejecting member, and an oscillatory bottom for said chamber, one end of which moves substantially in the plane of one wall of said chute, an apron substantially confined to the wall of said chute and connected to said end of said bottom to move therewith, said ejecting member and said bottom being operatively connected, whereby the articles in said chamber will be agitated and certain of them will be alined with said chute whenever an article is delivered.

2. A vending-machine comprising a frame provided with a chamber to contain the articles to be delivered, an ejecting member provided with a recess to contain an article to be delivered, means to adjust the width of said recess in said ejecting member, a chute leading from said chamber to said recess, means to adjust the width of said chute, an oscillatory bottom for said chamber, and means connecting said ejecting member and said oscillatory bottom to actuate the latter when the former is actuated.

3. A vending-machine comprising a frame provided with a chamber to contain the articles to be vended, an ejecting member pro-

vided with a recess to contain an article to be delivered, means to adjust the cross-sectional area of said recess, a chute connecting said chamber and said recess, and means to adjust the size of said chute.

4. A vending-machine comprising a frame provided with a chamber to contain the articles to be vended, an ejecting member, a chute leading from said chamber to said member, an oscillatory bottom for said chamber, one end of which moves substantially in the plane of one wall of said chute, and a reciprocatory feed member mounted on said bottom.

5. A vending-machine comprising a frame provided with a chamber to contain the articles to be vended, an ejecting member, a chute leading from said chamber to said member, an oscillatory bottom for said chamber having one end substantially in the plane of one wall of said chute, and an apron connected with said bottom to move with the end thereof but substantially confined to the plane of the wall of said chute.

6. A vending-machine comprising a frame provided with a chamber to contain the articles to be vended, an ejecting member, an oscillatory bottom for said chamber, a feed-slide arranged to reciprocate with respect to said bottom, and means for simultaneously oscillating said bottom and reciprocating said feed-slide upon actuation of the ejecting member.

7. In a vending-machine, an ejecting member having a recess to contain an article to be delivered, one of the sides of said recess being simultaneously adjustable horizontally and vertically and a screw arranged to adjust said side and hold it in its position of adjustment whereby said recess may be adjusted in cross-section and its dimensions may be temporarily fixed.

8. A vending-machine comprising a frame provided with a chamber to contain the articles to be delivered, an ejecting member provided with a recess to receive an article to be delivered, means to adjust one wall of said recess downwardly and inwardly, a chute leading from said chamber to said recess and having a wall in substantial alinement with said wall of said recess and means to adjust said wall of said chute downwardly and inwardly, whereby said chute and said means may be adjusted to substantially the same width.

9. In a vending-machine, an ejecting member having a recess to contain an article to be delivered, and means to equally vary the vertical and horizontal dimensions of the cross-sectional area of said recess.

10. In a vending-machine, an ejecting member provided with a recess to contain an article to be delivered and comprising rela-

tively movable frames, said frames having
coöperating inclined bearing - surfaces and
means to adjust one frame with respect to
the other whereby the vertical and horizontal
5 dimensions of the cross-sectional area of said
recess may be simultaneously varied.

In testimony whereof I have hereunto set

my hand, in the presence of two subscribing
witnesses, this 3d day of August, 1904, at St.
Louis, Missouri.

LEE C. SPOONER.

Witnesses:

W. L. COLEY,

FRED F. REISNER.