No. 733,523. PATENTED JULY 14, 1903.

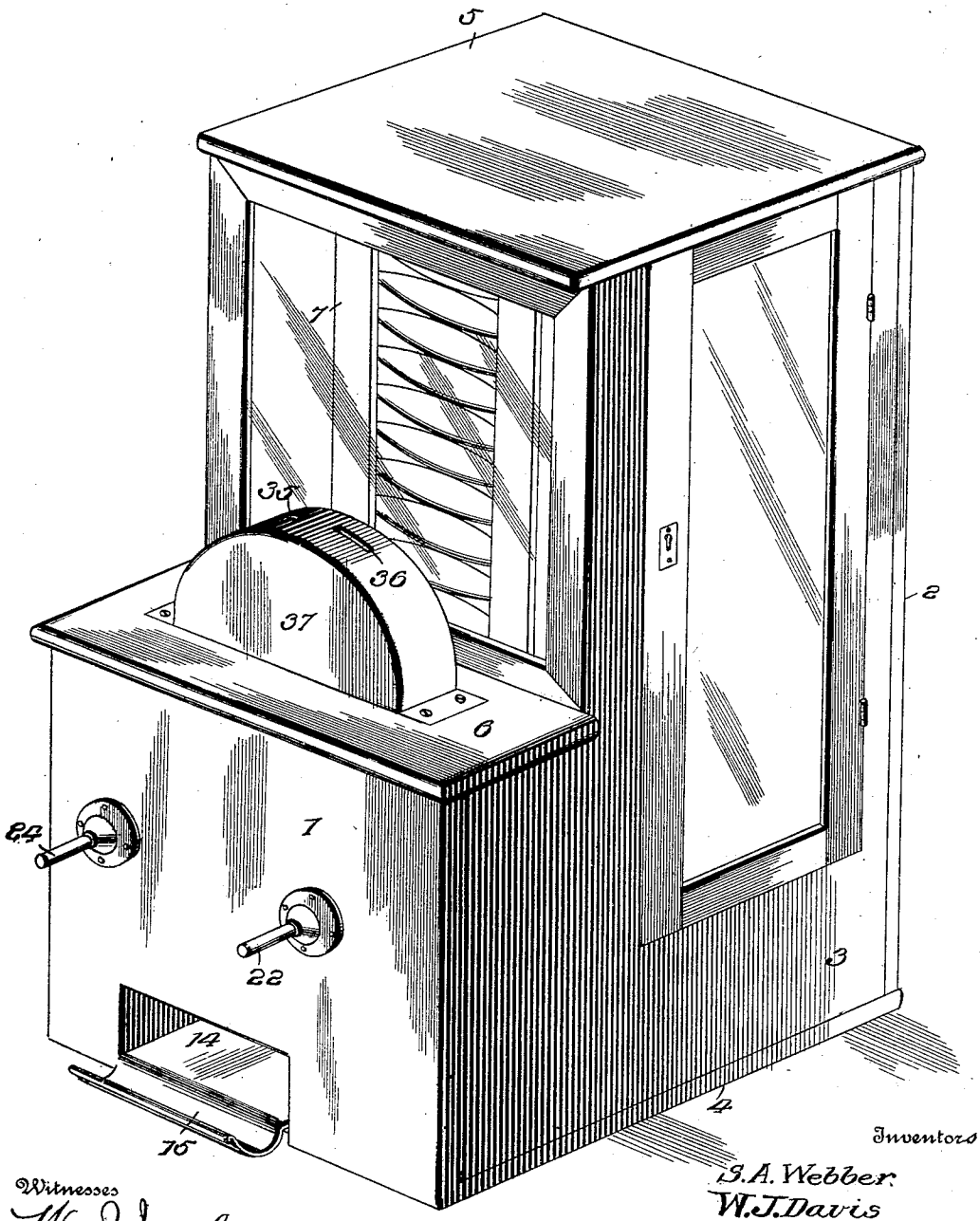
S. A. WEBBER & W. J. DAVIS.

VENDING MACHINE.

APPLICATION FILED AUG. 21, 1902.

NO MODEL. 7 SHEETS—SHEET 1.

FIG. 1.



Witnesses
Wm. J. Jacobi
C. S. Fryt.

Inventors
S. A. Webber.
W. J. Davis
By
W. J. Fitzgerald & Co.
Attorneys.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

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NO MODEL. 7 SHEETS—SHEET 2.

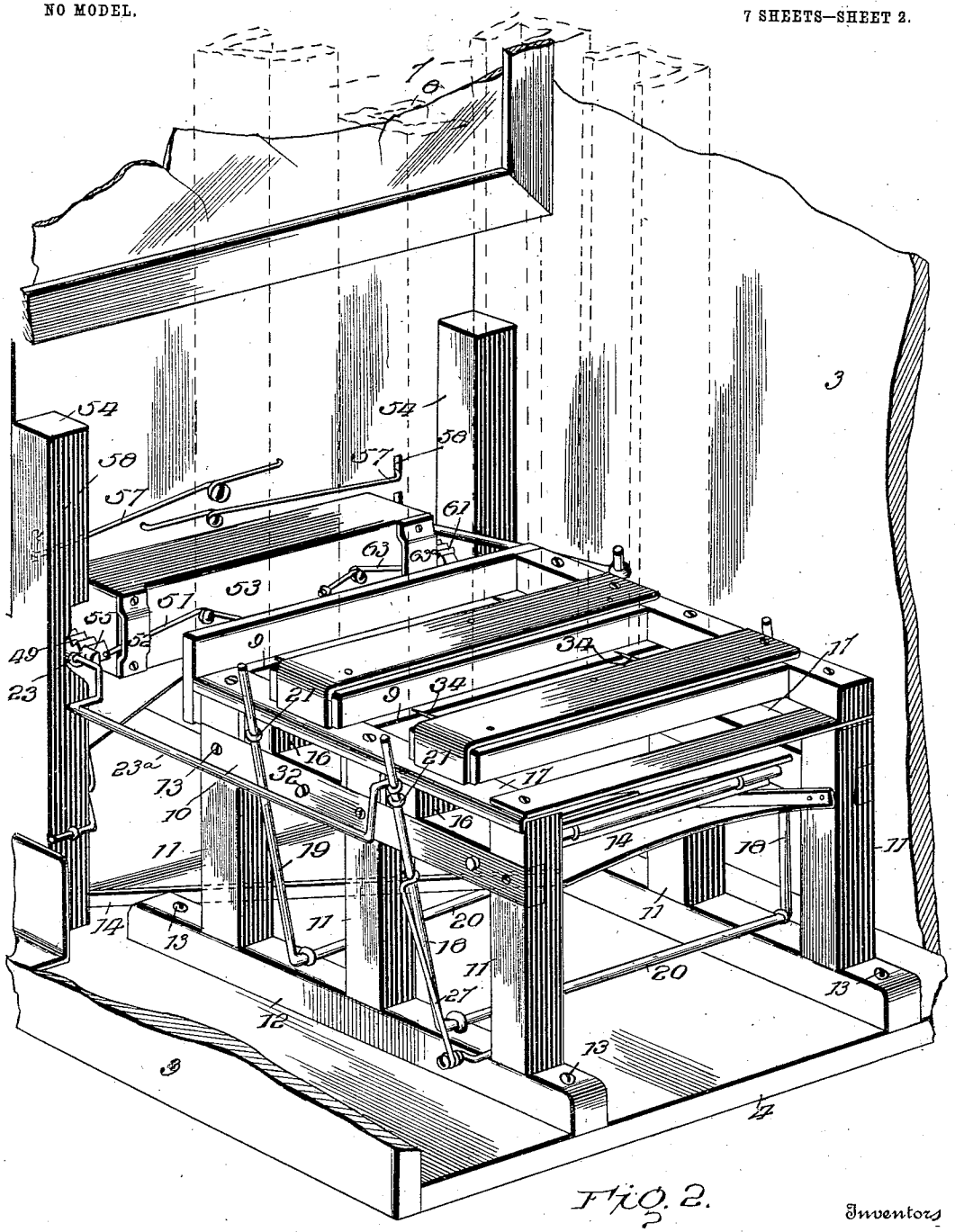


FIG. 2.

Witnesses
Wm. J. Jacobi
C. S. Frye.

Inventors
S. A. Webber
W. J. Davis
By
W. J. Fitzgerald & Co.
Attorneys.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

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NO MODEL. 7 SHEETS—SHEET 3.

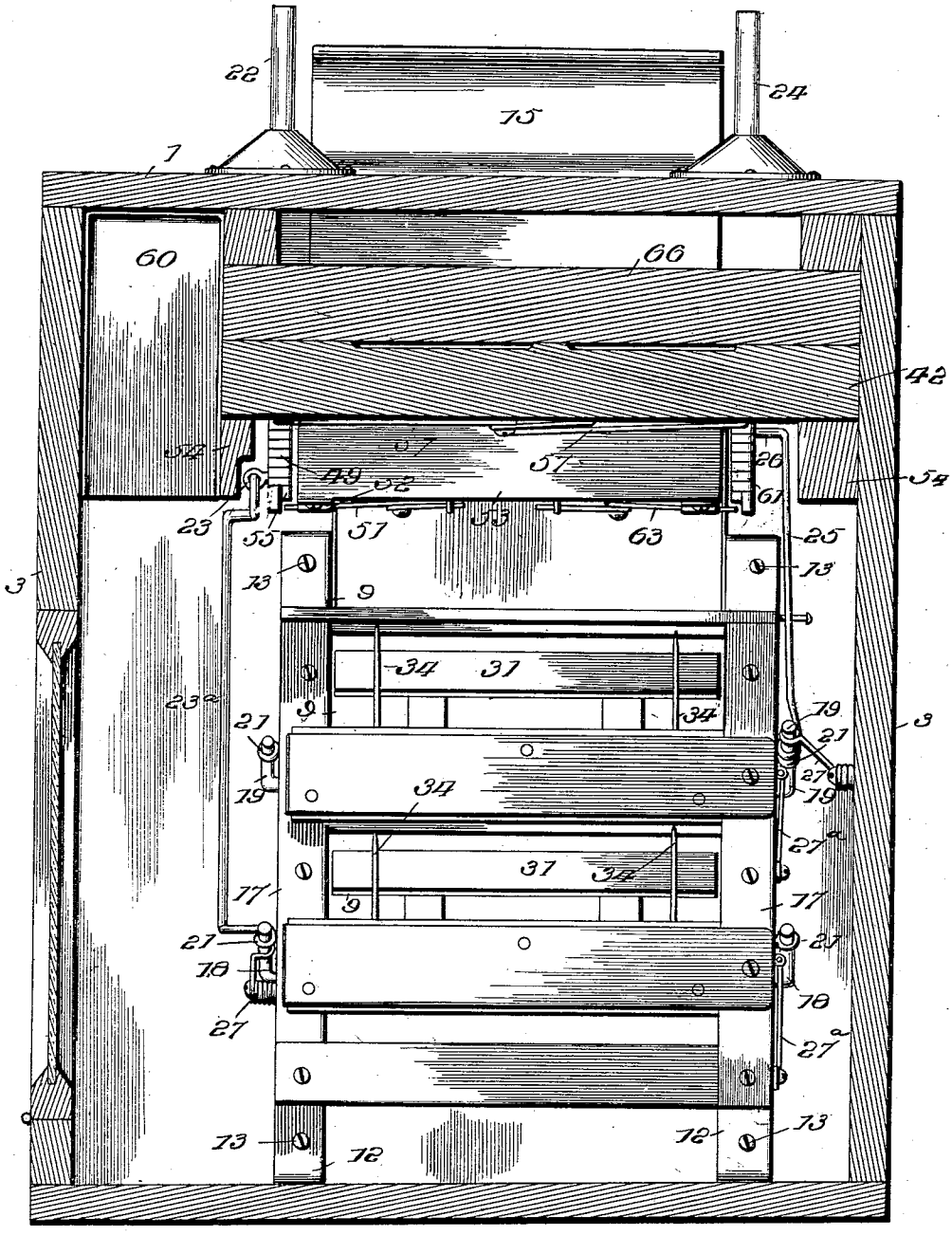


FIG. 3.

Inventors
S. A. Webber
W. J. Davis

By W. J. Fitzgerald & Co
Attorneys

Witnesses
Wm. J. Jacobi
C. S. Frye.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

No. 733,523. PATENTED JULY 14, 1903.

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NO MODEL. 7 SHEETS—SHEET 4.

FIG. 6.

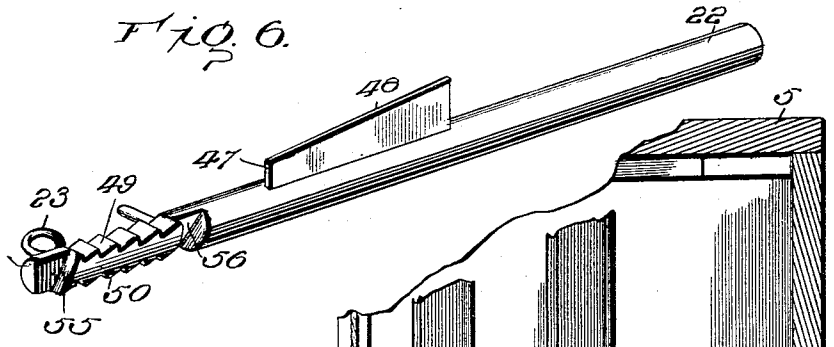
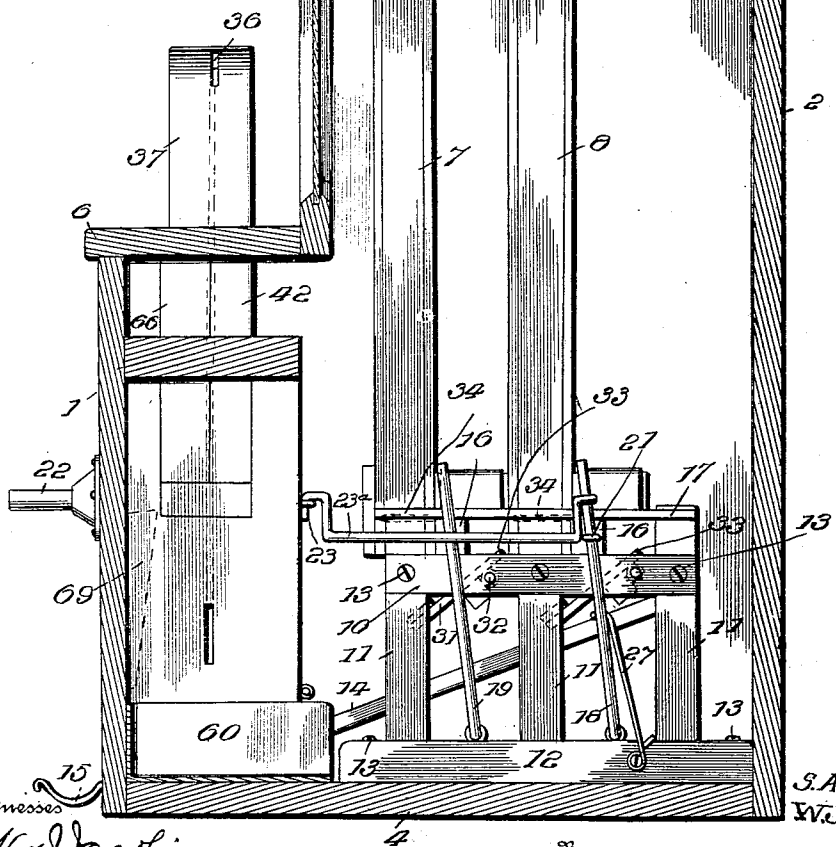


FIG. 4.



Witnesses
W. J. Jacobi
C. S. Fryc

Inventors
S. A. Webber
W. J. Davis

By
W. J. Fitzgerald & Co.
Attorneys.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

No. 733,523. PATENTED JULY 14, 1903.

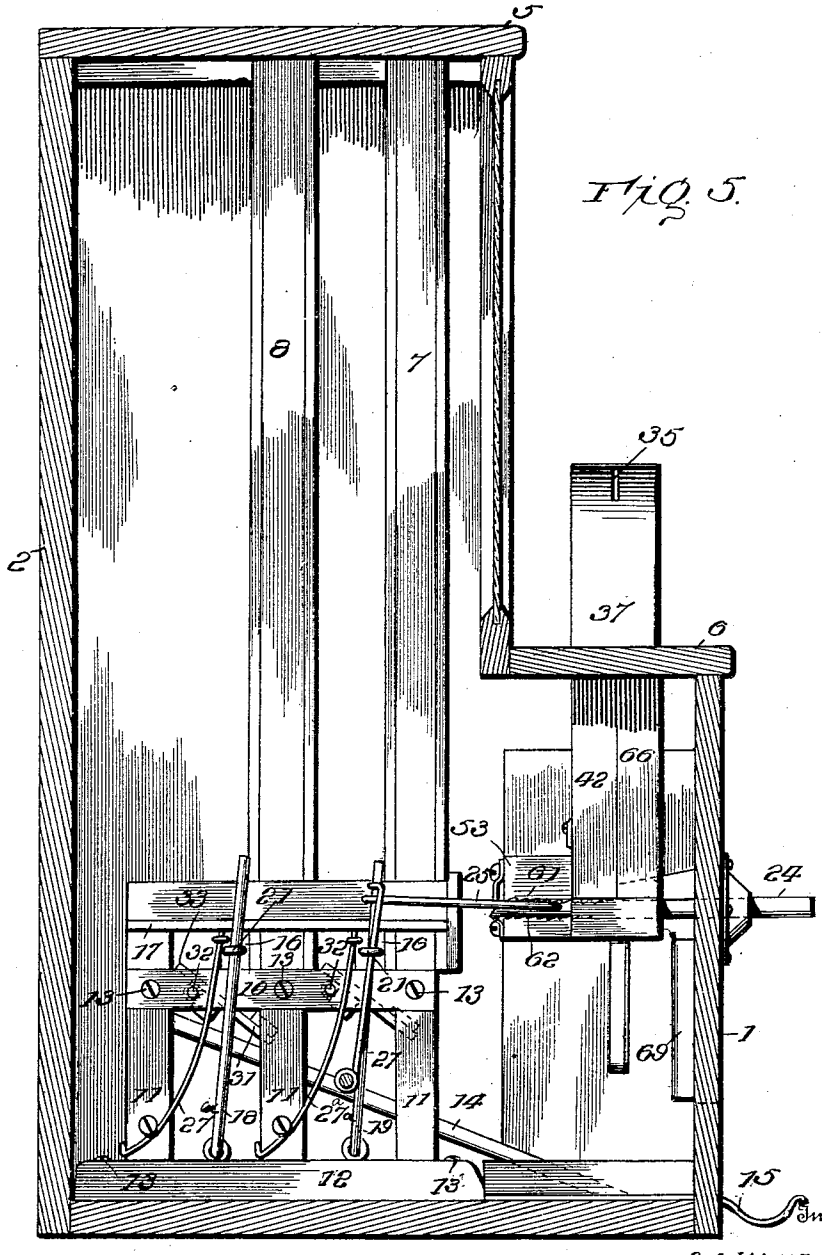
S. A. WEBBER & W. J. DAVIS.

VENDING MACHINE.

APPLICATION FILED AUG. 21, 1902.

NO MODEL. 7 SHEETS—SHEET 5.

FIG. 5.



Witnesses
Wm. J. Jacobi
C. S. Fryer

Inventors
S. A. Webber.
W. J. Davis

By
W. J. Fitzgerald & Co.
Attorneys

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

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APPLICATION FILED AUG. 21, 1902.

NO MODEL. 7 SHEETS—SHEET 6.

FIG. 8.

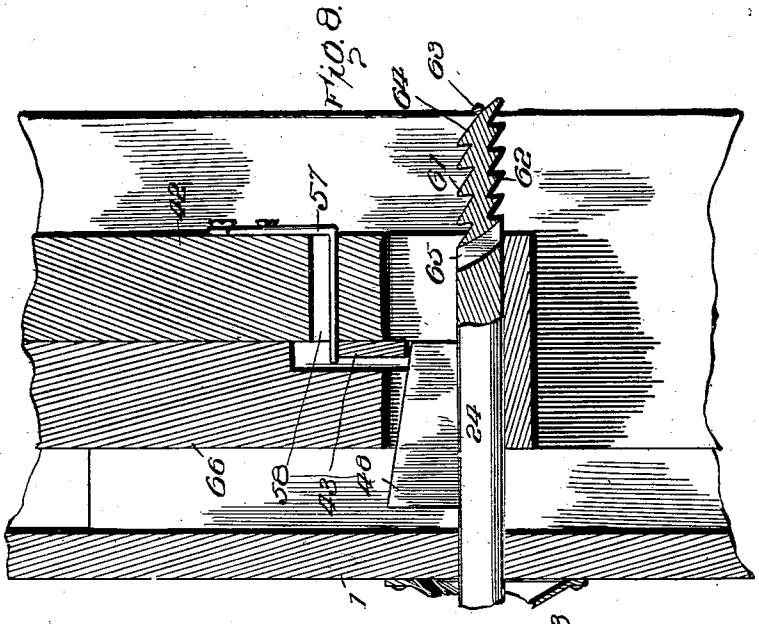
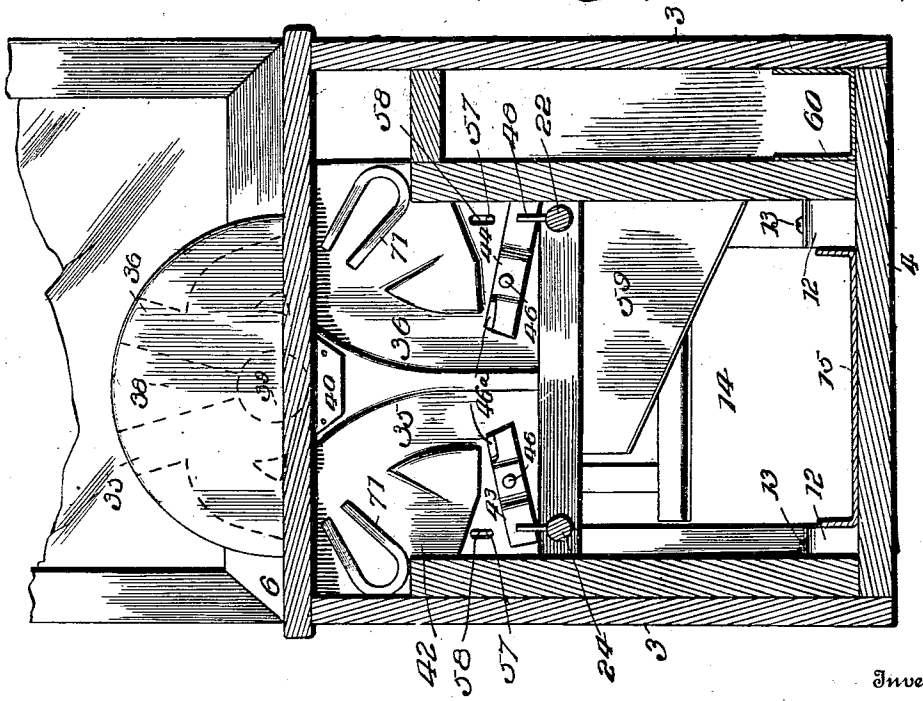


FIG. 7.



Witnesses

Wm. J. Jacobi

C. S. Frye

Inventors

S. A. Webber

W. J. Davis

By W. J. Fitzgerald & Co.

Attorneys

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

No. 733,523. PATENTED JULY 14, 1903.

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APPLICATION FILED AUG. 21, 1902.

NO MODEL. 7 SHEETS—SHEET 7.

FIG. 9.

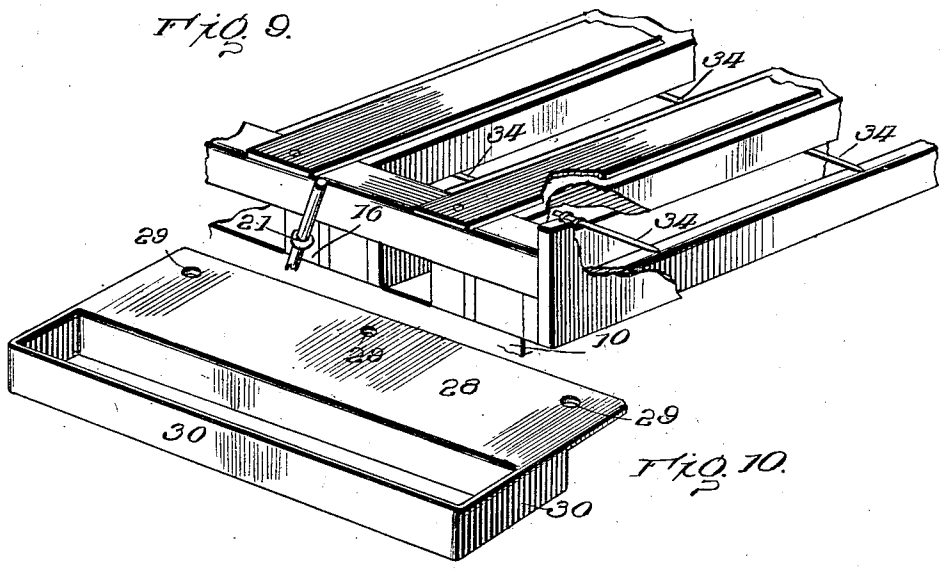
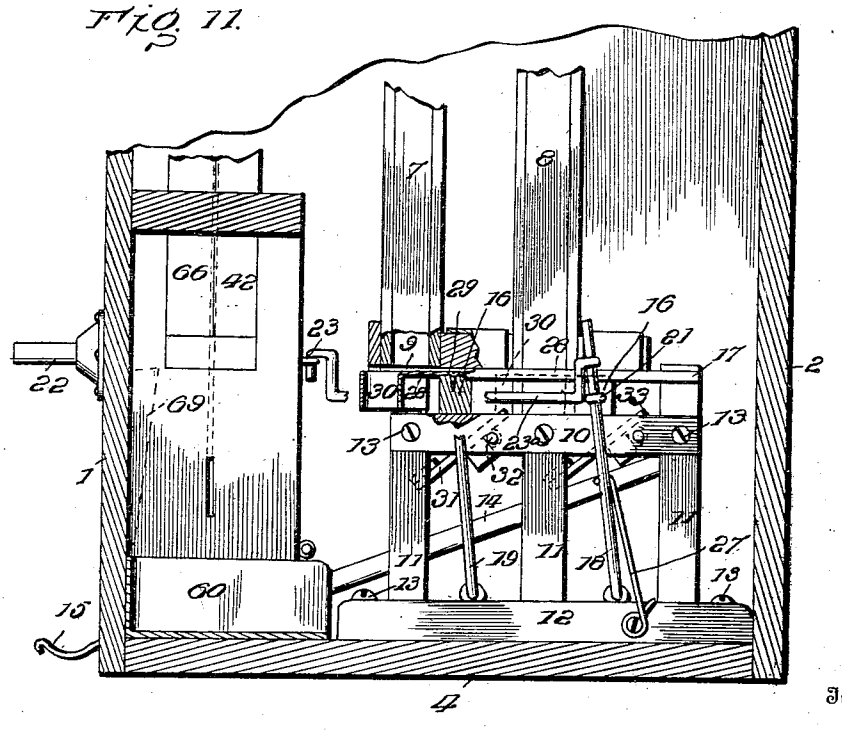


FIG. 10.

FIG. 11.



Witnesses

Wm. J. Jacobi

C. D. Pryce.

Inventors

S. A. Webber

W. J. Davis

By

W. J. Fitzgerald & Co.

Attorneys.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

No. 733,523. Patented July 14, 1903.

UNITED STATES PATENT OFFICE.

SAMUEL A. WEBBER AND WILLIAM J. DAVIS, OF WINDFALL, INDIANA, ASSIGNORS OF ONE-HALF TO K. D. ROSS AND SHERIDAN CLYDE, OF ELWOOD, INDIANA.

VENDING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 733,523, dated July 14, 1903

Application filed August 21, 1902. Serial No. 120,536. (No model.)

To all whom it may concern:

Be it known that we, SAMUEL A. WEBBER and WILLIAM J. DAVIS, citizens of the United States, residing at Windfall, in the county of Tipton and State of Indiana, have invented certain new and useful Improvements in Vending-Machines; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

Our invention relates to vending-machines, which will be found very useful and reliably efficient for a large variety of purposes, as for vending of various articles of merchandise, though it is our special purpose to so construct and combine the various coöperating parts that the machine will be especially desirable for selling cigars, and for the purposes of this application we will briefly designate the same as a "cigar-vending machine," it being understood that slight modifications of certain parts will fit it for handling other kinds of merchandise.

The prime object of our invention is to provide a vending-machine of the character specified which will comprise a minimum number of parts, each part being of very simple character and adapted to coöperate with the other parts in producing a perfectly acting responsive mechanism whereby a single cigar may be readily obtained by the simple act of pushing a rod.

Other objects and advantages will be hereinafter made clearly apparent, reference being had to the accompanying drawings, in which—

Figure 1 is a perspective view of our invention complete ready for use. Fig. 2 is a perspective detail view of certain interior parts of our vending-machine. Fig. 3 is a horizontal section of the casing, taken immediately above the push-rods and showing a portion of the interior devices in plan view. Fig. 4 is a detail showing the interior mechanism in side elevation and part of the casing in section. Fig. 5 is a view similar to Fig. 4, showing the opposite side of the mechanism illustrated in said Fig. 4. Fig. 6 is a detail showing a perspective view of the push-rod. Fig. 7 is a vertical section of the forward part of the casing, showing the coin-slots and trigger mechanism. Fig. 8 shows a vertical section of the part of the casing and the relative position of the push-rod. Fig. 9 is a perspective detail view of part of the interior mechanism. Fig. 10 is a perspective view showing a modification of the slide which is adapted to permit but one cigar, stick of candy, or the like to drop downward at one operation. Fig. 11 is a detail view showing the part illustrated in Fig. 10 in its operative position.

In order to conveniently designate the various elements of our invention and coöperating accessories, numerals will be employed, the same numeral applying to a similar part throughout the several views.

Referring in detail to the various parts of our invention, 1 and 2 indicate, respectively, a front and a rear wall of our casing, while 3 designates side walls thereof, a suitable bottom 4 and a top section 5 being also provided. We prefer to provide an offset in the front casing formed by the horizontal section 6, and within the casing thus or otherwise fashioned we locate the various coöperating devices adapted to hold the merchandise, as cigars or the like, and deliver one of them at each operation of pushing the push-rod inward, as will be hereinafter more specifically set forth. It becomes desirable, therefore, to provide the cigar-holding receptacles 7 and 8, which in this instance consist of vertically-disposed chutes or guideways, which are adapted to rest with their open lower ends directly in registration with the openings 9, each side of the chutes 7 and 8 being designed to rest upon a contiguous part of the frame-sections 10, as clearly shown in Fig. 3 and other views. The frame-sections 10 are only part of the general framework, said sections being designed to rest upon the supporting members or standards 11, which latter are secured in any preferred way upon the base members 12, all of said parts being, preferably, held in operative relationship by suitable screws 13 or the equivalent thereof. Between the standards 11 is the inclined chute or guideway 14, which extends outward

into engagement with the rear edge of the cigar-pocket 15, and it is therefore clearly obvious that when a cigar is dropped from either of the chutes 7 or 8 it will roll down the inclined plane 14 into the delivery pocket or member 15. It now becomes desirable to provide mechanism adapted to insure that but one cigar shall be dropped at a single operation, and with this purpose in view we provide the sliding members 16, there being one for each chute. The said members 16 consist of transversely-disposed bars, their outer ends adapted to rest upon the frame-sections 10 and adapted to play loosely between said frame-sections and the bars 17, said bars 17 being designed to hold the members 16 from upward movement. In order that the force required to move the bars 16 may be applied simultaneously, we provide the pair of controlling-levers 18 and 19, each of said controlling-levers consisting of a single piece of wire of suitable strength bent upon itself to provide the intermediate connecting link or section 20 and lever-arms, and it is therefore clearly obvious that when one of the lever-arms is operated both of said lever-arms, one upon each side of the machine, will be moved, and since each lever is properly connected to its respective bar 16, as by a staple or eyebolt 21, the upper end of the lever will play loosely through said eyebolt or staple, and thereby readily move the bar 16, so that both ends thereof will move simultaneously. One of the levers 18 is pivotally connected to the inner end of the push-rod 22 in any preferred way, as by the eye 23 and connecting-link 23^a, while upon the opposite side we connect the lever 19 with the push-rod 24 by means of the link 25, said link being bent at its outer end to provide the terminal 26, which is adapted to take into a suitable aperture in a contiguous part of the inner end of the push-rod 24, as clearly shown in Fig. 3 and other views. The levers 18 and 19 are held inclined normally outward by means of suitable springs 27, operatively connected thereto and to a contiguous part of the framework, as will be clearly obvious by reference to the drawings.

27^a represents springs for returning the bars 16 to normal position at each operation of the push-rods.

In most instances we prefer to connect to the bars 16 the plates 28 by means of screws passing through the apertures 29, said plates being adapted to be held normally outward by the action of the springs 27^a, and thereby insure that they will rest under and close the mouths of the chutes or receptacles 7 and 8, and it is therefore obvious that when the plate 28 is drawn rearwardly each open frame-section 30, attached to the forward end of the plate 28, will be moved in true registration with the open end of the chute 7 or 8, and since each frame-section 30 is of the same size or a little larger than the open end of said chutes a cigar or stick of candy or the like will drop down through said framework, and in order to prevent but one cigar or the like from passing through the frame-section 30 we provide a suitable arrester, which in this instance consists of the gate-section 31, which is mounted upon the cross-bar or rock-shaft 32, extending across the framework and suitably mounted thereon. The gate-sections 31 are so formed that each one of them will have the upwardly-extending branch or members 33 of sufficient length to lie in the path of the moving bar 16, and it is obvious that when the bar 16 is moved it will contact with the branches 33 and swing the gate-sections upward, so as to bring the same in position to close the open or lower end of the frame-section 30, but will gradually move downward when the push-rod is released and permit the lowermost cigar to be gradually lowered until the plate 28 shall have been moved inward sufficiently to close the chute.

In some instances as a modified construction of support suitable needles 34 may be connected in any preferred way to the upper side of the bars 16, and these needles will thus take the place of the plate 28 and hold the cigars or the like from passing out at the lower end of the chutes 7 or 8 until they are withdrawn, and since said needles or the plate 28, as the case may be, are withdrawn at the instant the gate-section 31 is elevated the needles or said plate will be returned in time to enter between the first and second cigar, while the first cigar will then be dropped by the action of the gate-section 31 onto the chute 14 and be delivered thereby into the receptacle 15, where it may be secured by the operator.

It now becomes desirable to clearly set forth the preferred mechanism we have adopted for controlling the mechanism by coin-operated devices, and we therefore call attention to the coin-chutes 35 and 36, which are provided in the member 37, located upon and secured to the frame-sections 6. The member 37 may, if preferred, be formed of two complementary sections fitted together, so that the chutes 35 and 36 will be separated by the rib-section 38, which is substantially V-shaped, as will be observed by reference to Fig. 7 and other views, the lower end thereof terminating in contact with the circular member 39, formed of glass and properly embedded between the two halves of the member 37. The chutes 35 and 36 extend downward and communicate with the throat 40 by means of the branches 41. The chutes 35 and 36, however, extend in a somewhat devious way, as will be indicated by reference to Fig. 12, inasmuch as they extend downward through the central part of the block or body section 42, so as to deliver the coin into engagement with one or the other of the interposed detents 43 or 44, pivotally mounted within the seats 45, formed in the body portion 42, the interposed detents being held in position by suitable pivots 46, and each detent is dis-

posed so that the inner end thereof will lie in the path of the coin as it falls downward in one of the chutes 35 or 36, thus insuring that the weight of the coin will depress the inner ends of the members 43 or 44 and correspondingly elevate the outer ends thereof sufficiently to raise said outer ends out of engagement with the inner ends 47 of the inwardly-tapered members 48, and thereby permit the push-rods to be pushed inward, and since the inner ends of said rods are operatively connected, respectively, to a lever-arm of the levers 18 or 19 the feeding mechanism for the cigars or other merchandise will be released for positive operation, and thereby cause one of the bars 16 to move rearwardly, and thus withdraw the plate 28 or the needles 34, as the case may be, away from the bottom of the chutes 7 or 8 and permit one cigar to drop down upon the gate-section 31, which has been simultaneously elevated with the withdrawal of said needles or plate, and insure that when said gate-section is lowered by reverse movement of the levers 18 or 19 the needles or the plate will prevent the second cigar from dropping down, though permitting the first cigar to be delivered by the gate-section onto the inclined chute 14 and delivered to the hand of the operator.

In order to insure that a positive action will be imparted to the push-rod, we provide upon the upper side of its inner end a plurality of ratchet-teeth 49 and upon its lower side a similar number of oppositely-disposed ratchet-teeth 50. Designed to coöperate with these teeth is the normally depressed spring-finger 51, moving in a suitable guideway or slot 52, carried by the cross-bar 53, which latter is properly supported in any preferred way, as by the standards 54. The finger 51 is so disposed that it will normally lie substantially in the same plane occupied by the center of the push-rod and is of proper length to engage the inclined face 55 and ride upon the same into engagement with the teeth 49 when the push-rod is forced inward, said finger being of sufficient length to drop downward in the inclined recess 56, and thereby be directed into engagement with the teeth 50 upon an outward movement of the push-rod. The object of the oppositely-disposed ratchet-teeth 49 and 50 and the coöperating finger 51 is to prevent any but a complete operation of the push-rod, inasmuch as it must be entirely withdrawn and entirely restored before another effective operation thereof designed to manipulate one of the levers 18 or 19 can be inaugurated. It is therefore clearly apparent from the foregoing description of said parts that when the push-rod is forced inward the finger will first ride upward on the inclined face 55 and will snap successively in engagement with the teeth 49 until the last one shall have been reached or until a push-rod has been forced entirely home a sufficient distance to operate the lever 18, when the spring-finger 51 will move downward by its own tensile properties into engagement with the inclined recess 56 and be directed thereby successively in engagement with the teeth 50, it being obvious that since the teeth 50 are properly inclined it will be impossible to force the push-rod further inward, and thus operate the lever again, inasmuch as said finger will absolutely lock the rod from inward movement until it shall have been again restored to the initial point or until it is withdrawn outward the extreme limit. We therefore wish to call special attention to the importance of this interlocking device, which holds the push-rod against wrongful manipulation and prevents but one operation of the cigar-delivering mechanism for each coin dropped into the slot. When the push-rod has thus been moved outward, so as to bring the spring-finger 51 in engagement with the inclined face 55, the outer end of the interposed detent 44 will drop downward in advance of the end 47, and thereby positively lock the rod from further inward movement until another coin is placed in the chute and thus brought in engagement with the inner end of the detent 44, and thereby again raise the outer end of the detent out of engagement with the terminal 47 of the inwardly-tapered member 48. By reference to the drawings it will be observed that each of the detents is provided with a controlling-spring 57, which are so mounted that they will move upward in a suitable slot 58, provided in the body portion 42, the object of said springs being to hold the outer ends of the members 43 and 44 in positive engagement with the inclined upper edge of the members 48, and thus insure that said outer ends of the interposed members will be in position to drop downward in advance of the terminals 47. The object in providing that the members 48 shall be inwardly tapered upon their upper edges is to impart a sufficient movement to the inner ends of the detents, which will cause said ends to be depressed out of the path of the coin which has been arrested by the seat 46^a, causing said inner end to move in an arc of a circle, and thus enable the coin to drop downward past the same into the coin-conveyer chute 59 and thence to the coin-box 60.

In Fig. 8 we have shown the inner side of the push-rod 24, and it will be observed that the inner end thereof is provided upon the upper side with the ratchet-teeth 61 and upon its lower side with oppositely-disposed teeth 62, said teeth being designed to coöperate with the spring-finger 63, extending through the guideway or slot 63^a, said teeth and finger subserving the similar purpose to the teeth upon the push-rod 22 and the spring-finger 51 coöperating therewith—that is to say, when the push-rod is forced inward the finger 63 will ride upward on the inclined face 64 and successively over each of the teeth 61, when it will drop into the downwardly and

inwardly inclined recess 65—and it is obvious that when the rod 24 is drawn outward the finger 63 will snap successively over the teeth 62 and prevent the rod from being forced inward until it has been entirely withdrawn and a new coin introduced.

It will be seen that the various details of our invention may be very cheaply and expeditiously manufactured and readily assembled each in its respective operative position and that when so assembled the complete machine will be found to be reliably efficient in the performance of its office of delivering to the operator a single cigar for each five-cent piece dropped in the slot. It will be further obvious that the spurious coins will produce no force or effect upon the cigar-delivering mechanism, and the machine will therefore remain unresponsive to the depositing of such a coin. It will also be clearly apparent that with very slight modifications of the coin-delivering devices two different grades of cigars may be vended by the same machine, one slot being reserved for the deposit of a ten-cent piece and the other duly labeled for the deposit of a five-cent piece, and since such a modification of the mechanism is clearly within the province of the manufacturer we deem it unnecessary to specifically set forth such changes.

While we have described the preferred combination and construction of parts deemed necessary in materializing our invention, we wish to comprehend such substantial equivalents and substitutes as may be considered as falling fairly within the scope and purview of our invention.

Having thus fully described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. A vending-machine comprising a holding-receptacle having an open lower end, a frame on which the receptacle is supported, a sliding member adapted to play beneath the receptacle, a controlling-lever having a connecting-link hinged to the frame and arms connected with the sliding member, a push-rod, and a link connecting one of the said lever-arms with the push-rod, as set forth.

2. A vending-machine, comprising a holding-receptacle having an open lower end, a frame on which the receptacle is supported, a sliding member adapted to play beneath the receptacle, a controlling-lever connected with the sliding member, a spring pressing the controlling-lever forward, a push-rod and a link connecting the controlling-lever with the push-rod, as set forth.

3. A vending-machine comprising a holding-receptacle having an open lower end, a frame on which the receptacle is supported, a sliding member adapted to play beneath the receptacle, a spring pressing the sliding member forward, a controlling-lever connected with the sliding member, a push-rod, and a link connecting the controlling-lever with the push-rod, as set forth.

4. A vending-machine comprising a holding-receptacle having an open lower end, a frame on which the receptacle is supported, a sliding member having a frame-section connected therewith and adapted to play beneath the receptacle, a controlling-lever connected with the sliding member, a push-rod and a link connecting the controlling-lever with the push-rod as set forth.

5. A vending-machine, comprising a holding-receptacle having an open lower end, a frame on which the receptacle is supported, a sliding member having a frame-section connected therewith, and a supporting device for the contents of the receptacle located between the frame-section and the sliding member, a controlling-lever connected with the sliding member, a push-rod and a link connecting the controlling-lever with the push-rod as set forth.

6. A vending-machine, comprising a holding-receptacle having an open lower end, a frame on which the receptacle is supported, a sliding member having a frame-section connected therewith and supporting-needles for the contents of the receptacle located between the frame-section and the sliding member, a controlling-lever connected with the sliding member, a push-rod and a link connecting the controlling-lever with the push-rod, as set forth.

7. A vending-machine comprising a holding-receptacle having an open lower end, a frame on which the receptacle is supported, a sliding member adapted to play beneath the receptacle, means for operating the sliding member, an arrester pivoted beneath the sliding member having a gate-section and a branch normally in the path of the sliding member, a push-rod and a link connecting the means for operating the sliding member with the push-rod as set forth.

8. A vending-machine comprising a holding-receptacle having an open lower end, a frame on which the receptacle is supported, a sliding member adapted to play beneath the receptacle, means for operating the sliding member, a push-rod having ratchet-teeth on opposite sides, a spring coöperating with the teeth on the push-rod, and means for connecting the operating means of the sliding member with the push-rod as set forth.

9. A push-rod for vending-machines constructed with ratchet-teeth on opposite sides, an inclined face and an inclined recess.

In testimony whereof we affix our signatures in presence of two witnesses.

SAMUEL A. WEBBER.
WILLIAM J. DAVIS.

Witnesses:
DANIEL V. GARRIS,
D. T. HUTCHERSON.