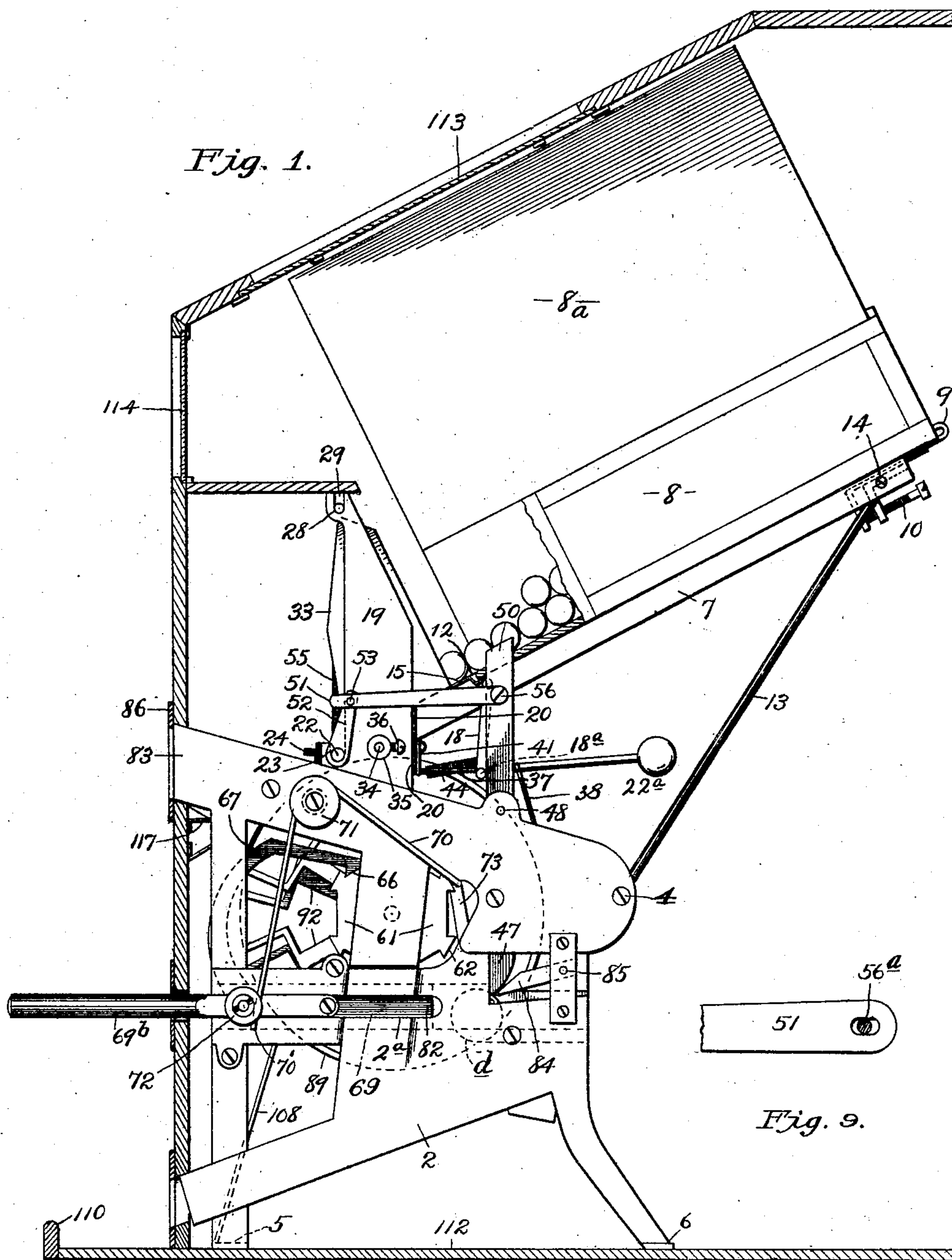


No. 869,635.

PATENTED OCT. 29, 1907.

A. JACOBS.
CIGAR VENDING MACHINE.
APPLICATION FILED FEB. 26, 1906.

5 SHEETS—SHEET 1.



Witnesses
W. L. Tingle
J. Moore

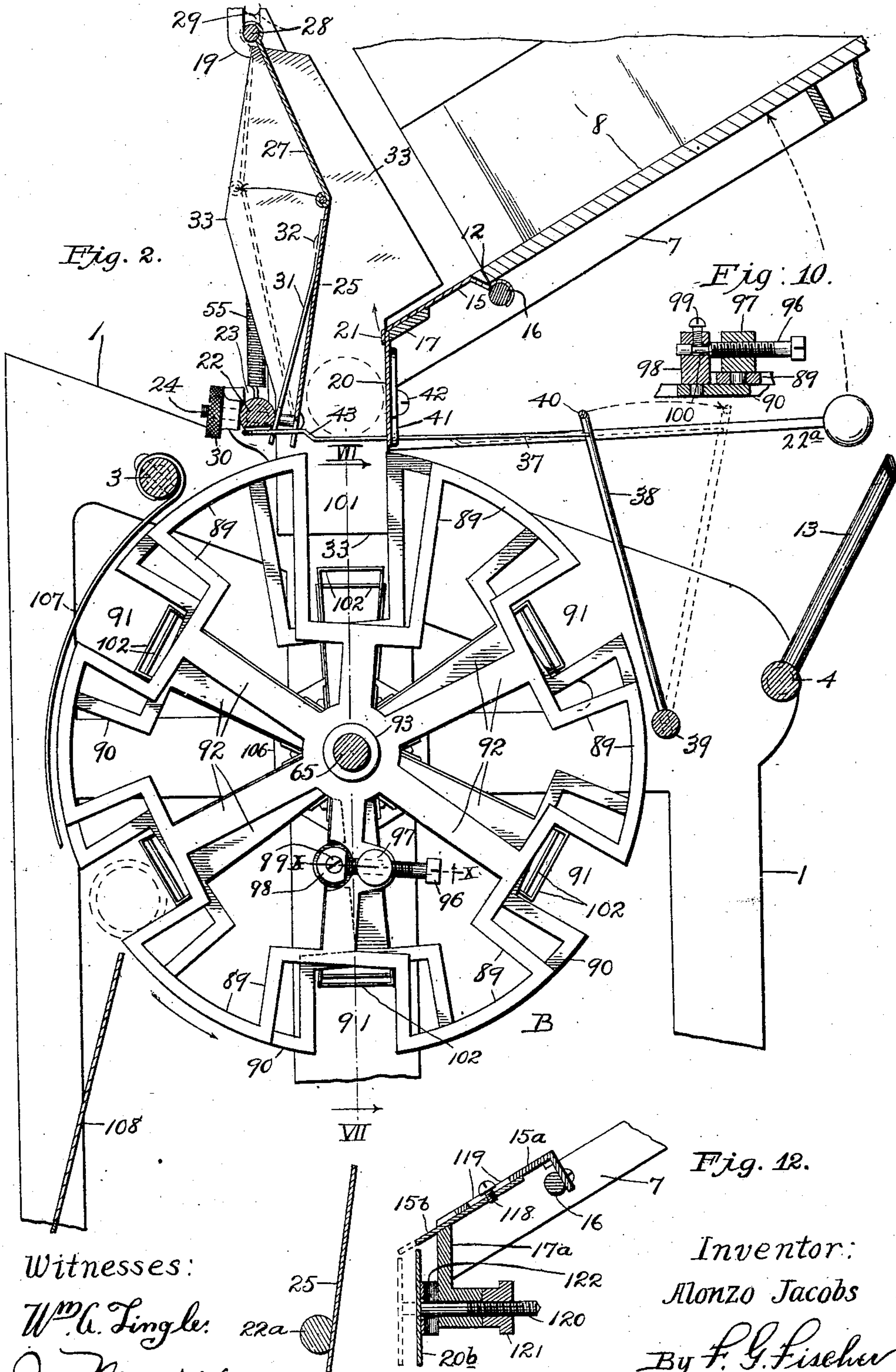
Inventor:
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5 SHEETS—SHEET 2.

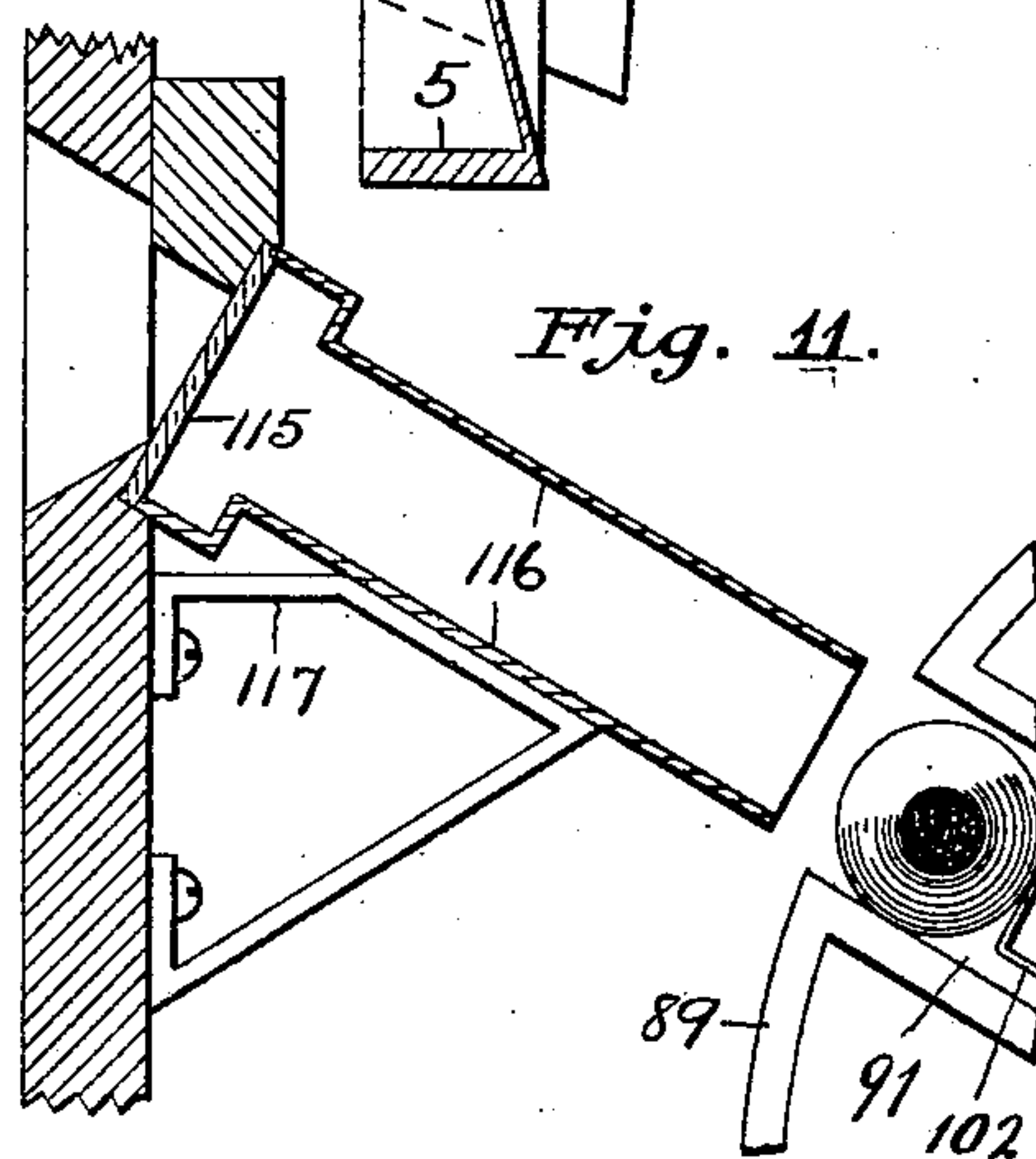
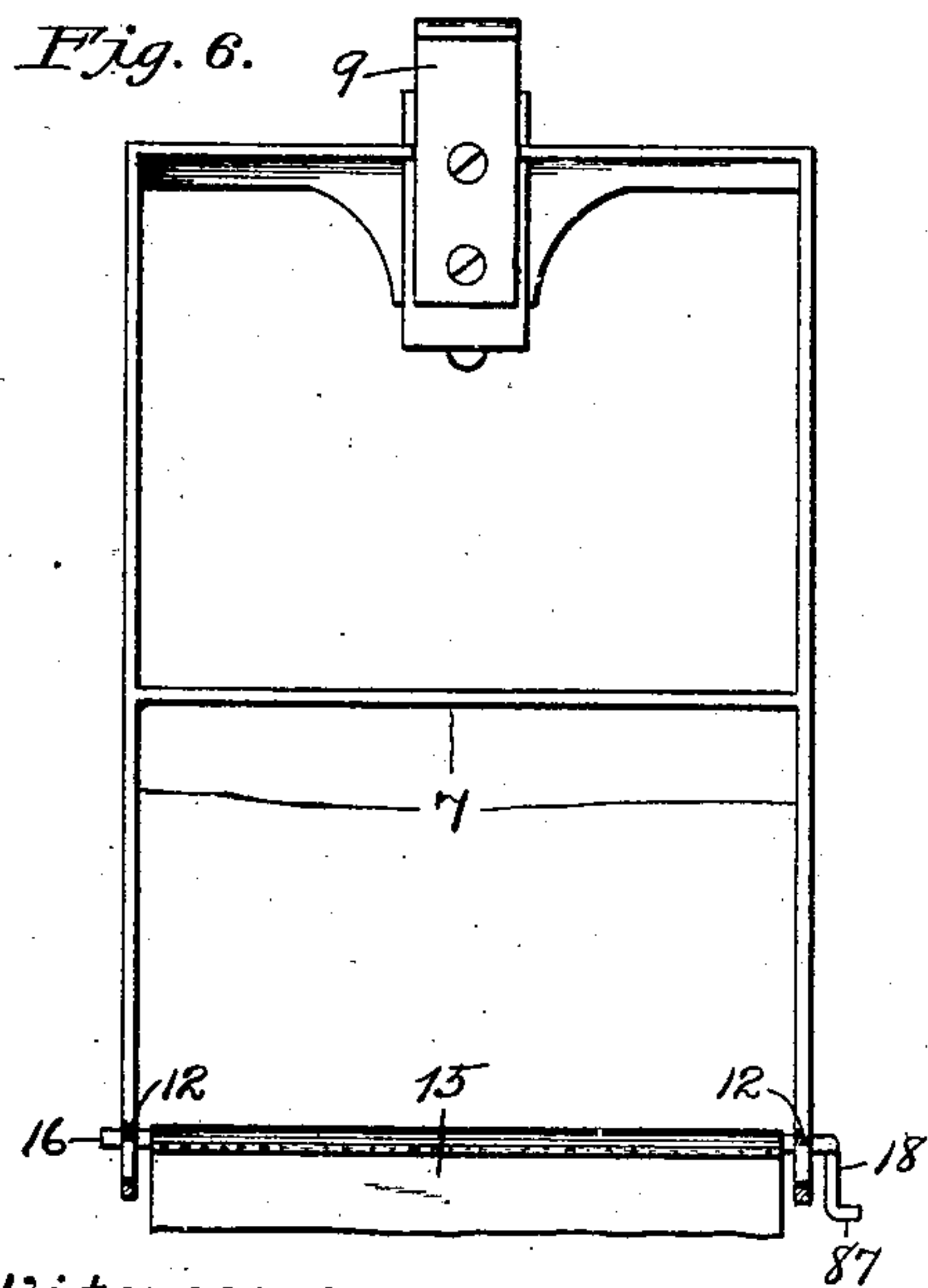
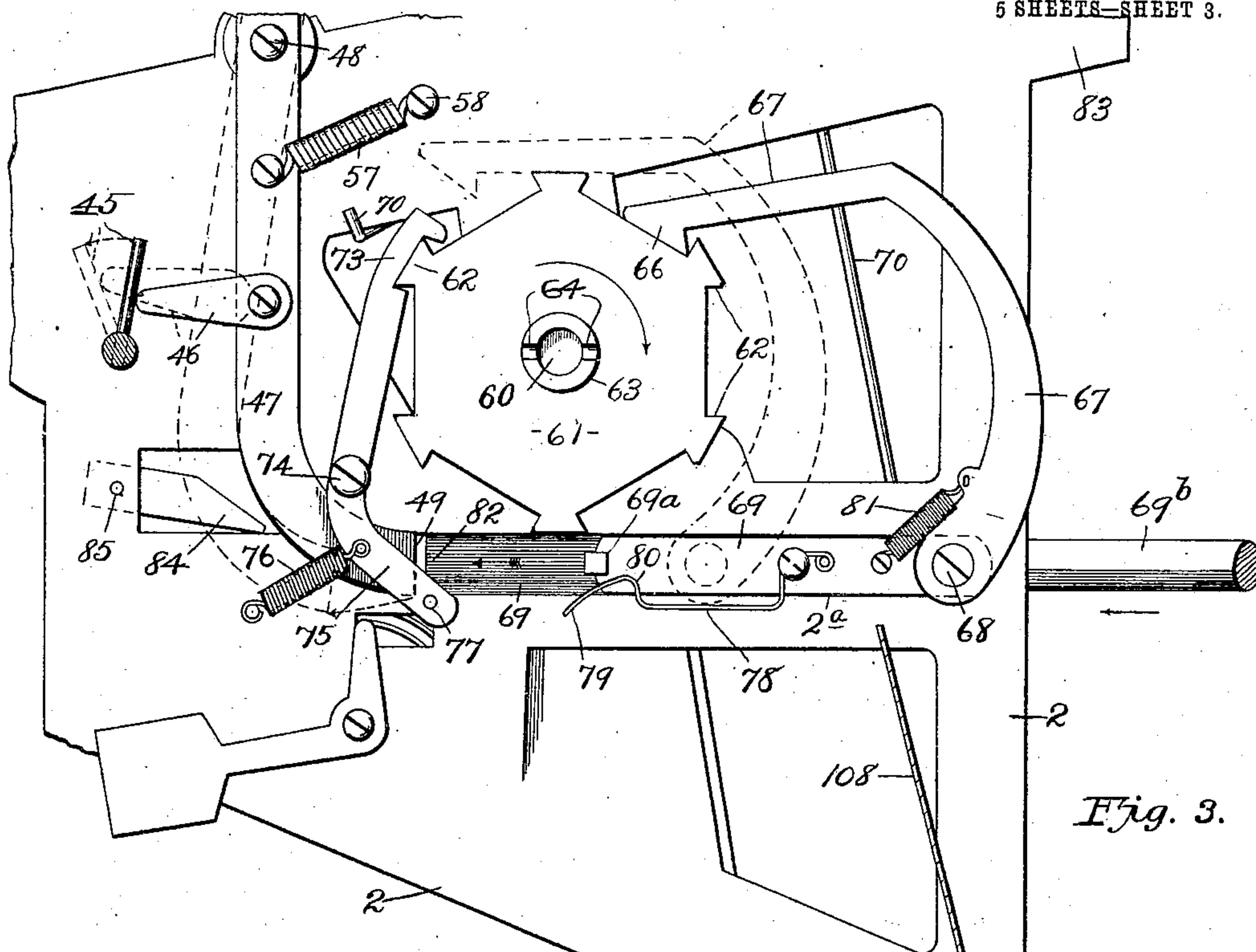


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5 SHEETS—SHEET 3.



Witnesses
W. C. Fingle.
J. Moore.

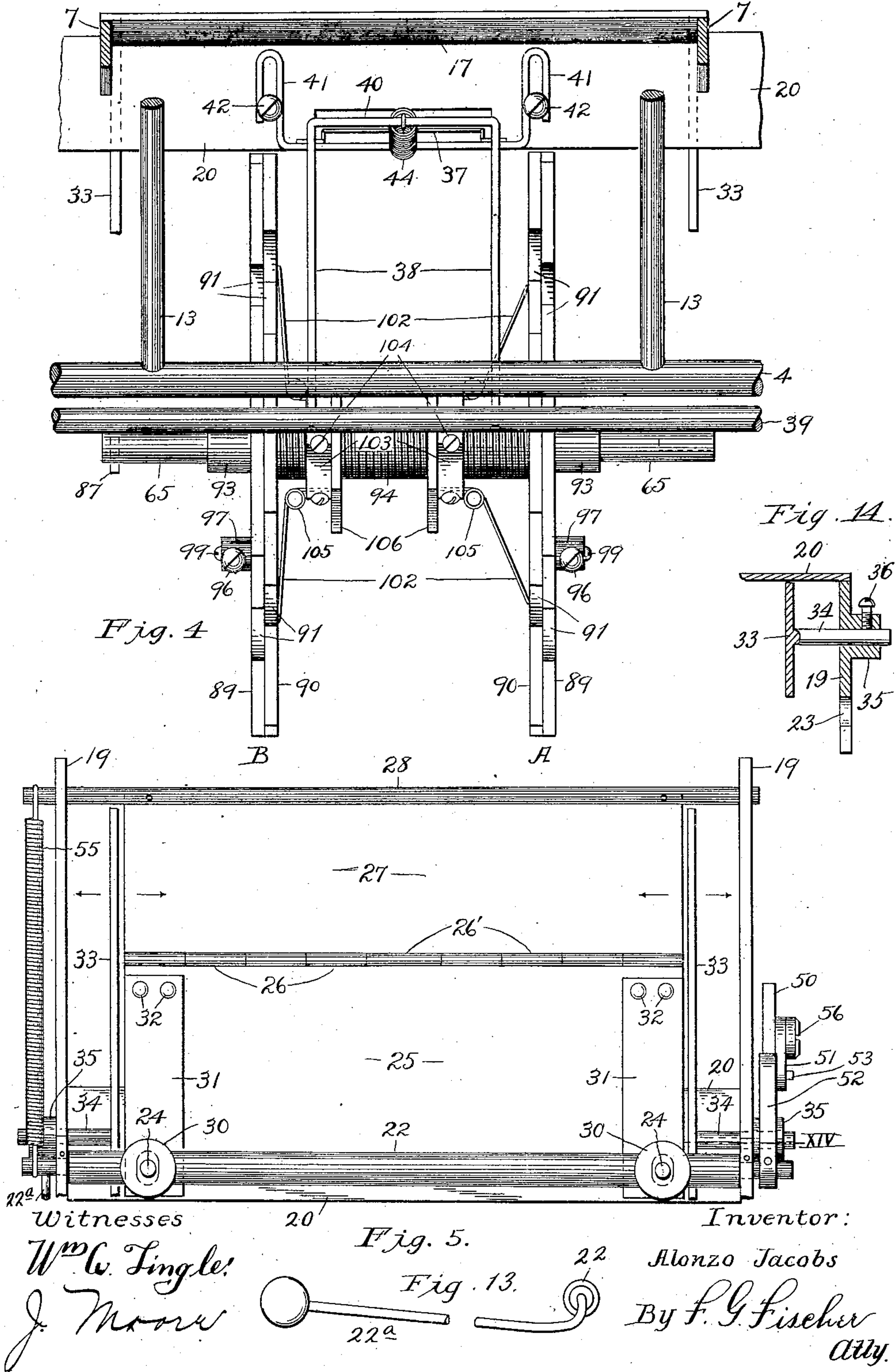
Inventor:
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5 SHEETS—SHEET 4.

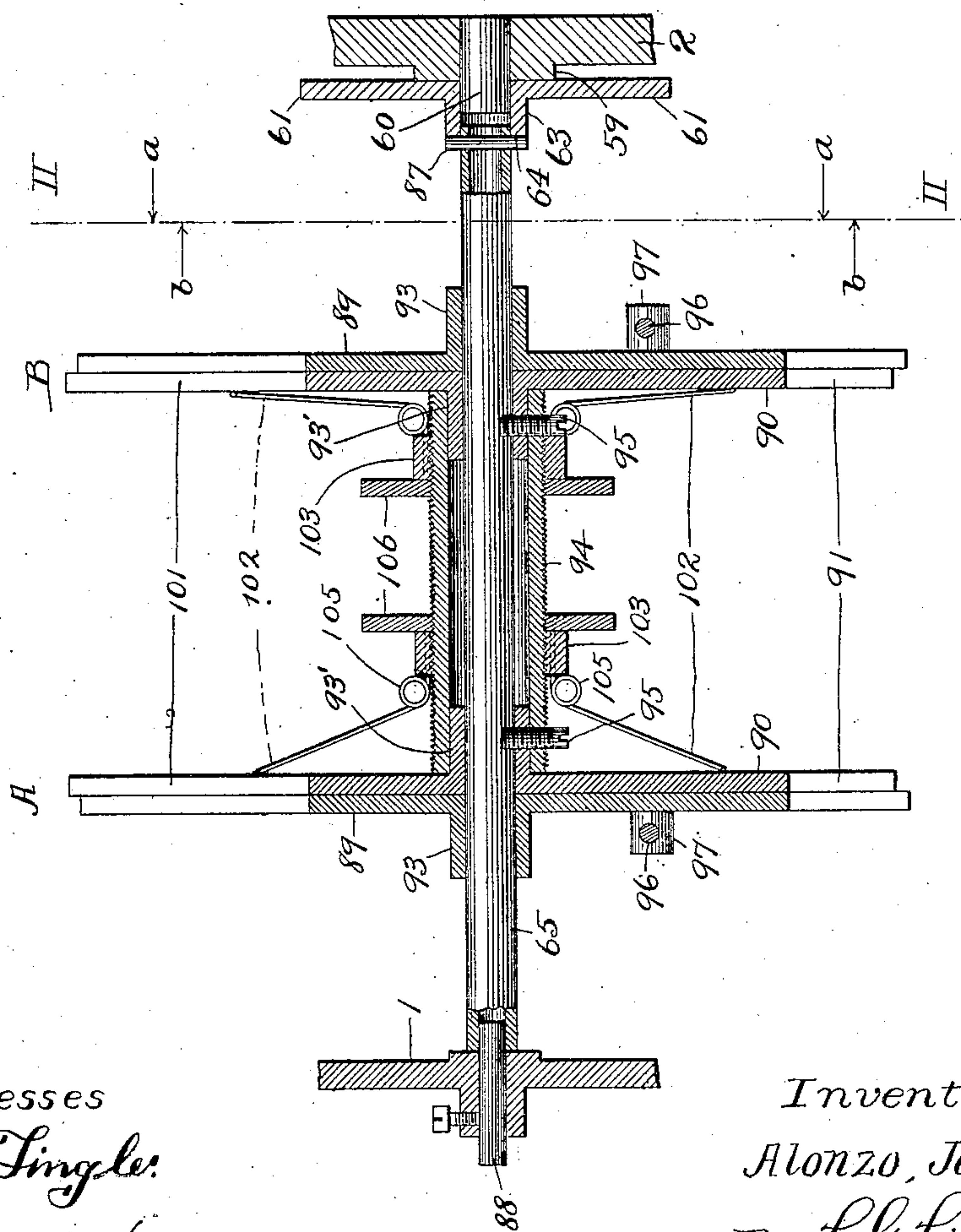
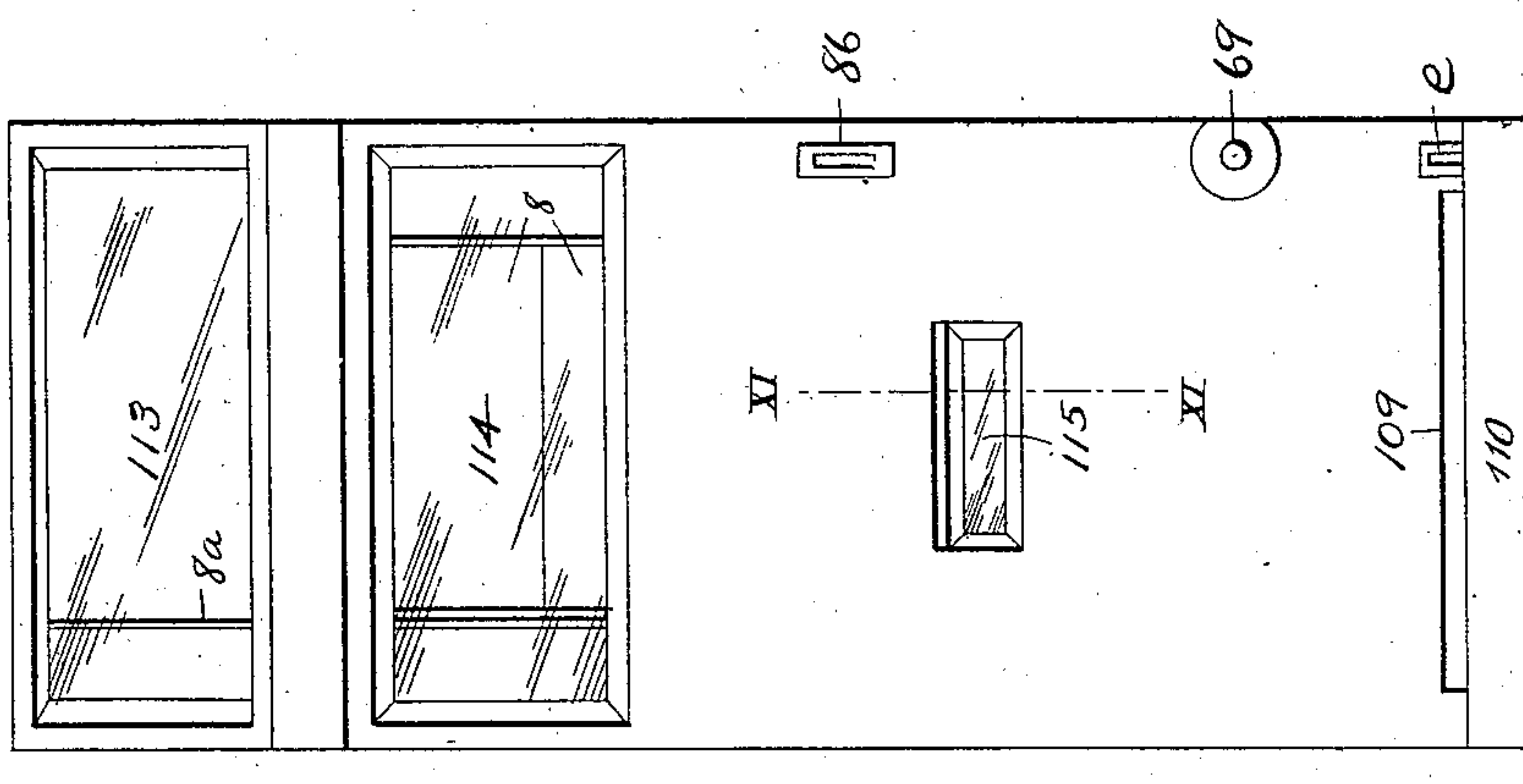


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5 SHEETS—SHEET 5.



Witnesses
W^m A. Single.
J. Moore.

Inventor:
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Atty.

UNITED STATES PATENT OFFICE.

ALONZO JACOBS, OF INDEPENDENCE, MISSOURI, ASSIGNOR TO JACOBS AUTOMATIC CIGAR VENDOR COMPANY, OF KANSAS CITY, MISSOURI, A CORPORATION.

CIGAR-VENDING MACHINE.

No. 869,635.

Specification of Letters Patent.

Patented Oct. 29, 1907.

Application filed February 26, 1906. Serial No. 302,936.

To all whom it may concern:

Be it known that I, ALONZO JACOBS, a citizen of the United States, residing at Independence, in the county of Jackson and State of Missouri, have invented certain new and useful Improvements in Cigar-Vending Machines, of which the following is a specification.

My invention relates to coin-operated cigar vending-machines, and the object of my invention is to produce a cigar vending-machine which is reliable in operation and comparatively simple in construction.

A further object is to vend the cigars directly from the original package, and a still further object is to provide means by which every sixth operation, for example, will cause the customer to receive two or more cigars instead of one, for the price of one cigar.

These and other desirable objects are attained by the novel construction and combination of parts, as hereinafter described and claimed, and illustrated in the accompanying drawings.

In said drawings, Figure 1 is a right-hand side elevation of a cigar-vending machine embodying the invention, the front and top of the inclosing case being in section and the cigar-box being partially in section. Fig. 2 is a full-sized irregular vertical section of the principal working parts of the machine, viewed partly, on a line corresponding to line II—II of Fig. 7, in the direction of arrows *a*. Fig. 3 is an inside elevation of the mechanism that actuates the mechanism shown in Fig. 2, viewed in the direction of arrows *b b*, Fig. 7, a delivering-wheel forming part of the invention being removed, the normal positions of the parts being shown in full lines, and their positions at the end of the plunger-stroke in dotted lines. Fig. 4 is a rear elevation of the delivering-wheel and certain other parts lying above and behind the same. Fig. 5 is a front elevation of an agitator and certain adjacent parts. Fig. 6 is a plan view of the cigar-box supporting frame. Fig. 7 is a vertical section, full size, of the delivering-wheel, taken on line VII—VII of Fig. 2, showing also the bearings of the delivering-wheel shaft, some of the loops being omitted for clearness. Fig. 8 is a reduced front elevation of the case or cabinet of the machine. Fig. 9 is a detail view of a pin and slot connection hereinafter mentioned. Fig. 10 is a sectional view taken on line X—X of Fig. 2, showing one of the adjusting devices for the delivering-wheel. Fig. 11 is an enlarged section on line XI—XI of Fig. 8, showing the means for viewing a portion of the delivering-wheel from the front of the case. Fig. 12 is a sectional detail view illustrating a modification. Fig. 13 is a side elevation of a hammer for striking the underside of the cigar-box. Fig. 14 is a broken vertical section taken on line XIV of Fig. 5.

Referring first to Figs. 1 and 2; the frame of the ma-

chine comprises two standards 1 2, rigidly connected with bolts 3 and 4 above, and at their feet by front and rear cross-pieces 5 and 6. The right-hand standard 2 contains coin-chutes and coin-controlled devices, and supports the mechanism shown in Fig. 3.

Rigidly supported by standards 1 2 is an inclined frame 7 adapted to support a cigar-box 8 in the position shown. Said frame is provided with a clamp 9 adapted to be drawn against the upper end of the cigar-box by turning the clamp-screw 10. The lower edge of the cigar-box abuts against a pair of shoulders 12 formed on the sides of the frame 7. Thus when the clamp 9 is tightened, the cigar-box is rigidly supported. Before the cigar-box is placed in the machine, one of its ends is removed, leaving an open lower end, as shown in Fig. 1, so that the cigars may roll therefrom. Said frame 7 is braced by a pair of rods 13, connected thereto at 14 and at their lower ends to the rear frame-bolt 4.

A continuation of the bottom of the cigar-box is formed by a transverse inclined plate 15, the upper edge of which is riveted to a transverse rock-shaft 16 and the lower edge of which normally rests upon a fixed crosspiece 17, integral with the aforesaid frame 7. Rock-shaft 16 is journaled in the side members of said frame, and one of its ends is provided with a depending arm 18.

Standards 1 and 2 are, respectively, provided with upward extensions 19, united at their rear lower edges by a rear throat-member 20, for normally supporting the downturned lower edge 21 of plate 15 hereinafter termed the starter.

22 designates a transverse rock-shaft the ends of which rest in bearings 23 in extensions 19, one of said ends being provided with a hammer 22^a adapted to strike the underside of the cigar-box to prevent the cigars from lodging therein.

24 designates two screws extending diametrically through shaft 22 and rigidly secured at their inner ends to a lower agitator plate 25 which forms the front of a throat through which the cigars pass from their containing box to the delivering-wheel. The plate 25 is thus rigidly supported by rock-shaft 22 and screws 24, and movements of said shaft will be communicated to said plate.

The upper edge of plate 25 is formed with a row of hinge-lugs 26 which are hinged to a series of similar lugs 26' on the lower edge of an upper agitator plate 27, normally inclined at an angle to the lower plate as shown. Its upper edge is attached to a transverse rod 28, the ends of which play vertically in bearings 29 in the upper ends of extensions 19.

When rock-shaft 22 is turned "forwardly" the lower agitator plate will be swung forwardly until it assumes the dotted-line position (Fig. 2) and the corresponding

movement of the upper plate 27 will raise the rod 28 in the bearings 29. This movement and its reverse, occur during every operation of the machine.

Screws 24 are provided with adjusting-nuts 30 which bear upon the rock-shaft 22. The lower agitator plate 25 is provided with a pair of leaf springs 31, riveted thereto at 32, passing down behind the shaft 22 and pressing forwardly against the same. Thus, a rearward pressure is exerted upon the lower edge of the lower agitator plate, and when the nuts 30 are adjusted outwardly, this pressure forces said plate back and holds screws 24 against shaft 22; but when the nuts 30 are adjusted inwardly the lower edge of said plate is drawn forward away from the rear throat-member 20, thereby increasing the width of the throat opening, more especially noticeable when the agitators are thrown outwardly as shown by dotted lines.

Arranged at the sides of the agitator are two upright plates 33 which form continuations of the sides of the cigar-box 8 for guiding the cigars from the latter to the throat. Said plates extend a certain distance below the lower agitator plate 25, and are laterally adjustable, whereby they may be registered with cigar-boxes of different widths. To provide for such adjustment said plates are supported by lateral pins 34 rigidly secured thereto and extending slidably through bosses 35 on extensions 19. Said bosses are provided with set-screws 36 which hold the pins firmly in adjusted positions.

Any cigar or cigars which lie between the lower agitator plate 25 and the rear throat-members 20, are normally supported above the delivering-wheel by a horizontally-arranged separator 37 consisting of a wire-loop, the backwardly extending ends of which are pivotally connected to a pair of rocker-arms 38 extending upwardly from a rock-shaft 39. As shown the upper ends of rocker-arms 38 are united by a cross-bar 40, which may be integral therewith. The forward portion of the separator 37 is supported by means of a U-shaped wire 41, secured to, and vertically adjustable upon throat-member 20, by means of screws 42. As shown in Fig. 2, the forward portion of the separator 37 is bent upwardly at 43, then continues in a substantially level plane to its end.

Rocker-arms 38 are continuously drawn forward by means of a spring 44, connecting the cross-bar 40 to the U-shaped support 41.

Rock-shaft 39 is provided with an arm 45 (Fig. 3) which is held pressed, by the action of spring 44, against an arm 46, adjustably secured to an upright lever 47, fulcrumed at 48 on standard 2. The lower end of this lever is curved forwardly, as shown, and terminates at 49 in the path of a lug hereinafter referred to. Referring to Fig. 1, 50 designates that portion of said lever which extends above the fulcrum 48 and is secured by a connecting-bar 51 at 53, to a crank-arm 52 rigidly secured on one end of rock-shaft 22.

The end of rock-shaft 22 opposite the arm 52 is connected, by a tension spring 55, to the corresponding end of rod 28, thereby exerting a downward pressure upon said rod and the upper agitator-plate 27. Said spring comes into play as the hinged ends of the two agitator plates 25 and 27 are carried past the dead center line in either direction.

The connection between connecting-bar 51 and lever 47 is preferably a pin-and-slot joint, as illustrated in

Fig. 9, in which 56^a is the shank of the pin or screw 56. The function of the joint is to permit the action of the spring 55, as hereinafter described.

The lower portion of lever 47 is drawn forwardly by a moderately strong tension-spring 57, attached to a screw 58.

The inner face of the right-hand standard 2 is formed with a boss 59 having a stub-shaft 60 upon which is journaled a ratchet-wheel 61, provided with teeth 62, which are of dovetail formation and equal in number to the pockets in the delivering-wheel. The hub 63 projects over the stub-shaft and is provided with recesses 64, adapted to receive a pin upon the detachable shaft 65 of the delivering-wheel.

The ratchet-wheel 61 is turned, step by step, in the direction of the arrow by a pawl 66, having a curved arm 67, pivotally connected by a screw 68 to a manually operated plunger 69. Said plunger is arranged to slide horizontally in a guide-way formed in standard 2, which latter has a slot 2^a for the passage of the plunger and a push-bar 69^b secured to said plunger for operating the same. The push-bar is pressed forwardly by a spring 70, the coiled central portion of which is held in position by a button 71 and its depending arm 70' passes behind a button 72 mounted on said push-bar. The other arm of the spring extends rearwardly and its end is bent inwardly through an opening in the standard 2. When the operator forces the push-bar back, the depending arm of the spring is swung back and the spring thereby placed under tension and when the pressure of the hand is removed, the spring restores said push-bar and the plunger to normal position.

Returning to Fig. 3; when the plunger is pushed in, it carries the pawl arm 67 toward the ratchet-wheel 61; the point of the pawl 66 strikes the tooth 62 and rides over it, and the pawl slips back over the top tooth and stops in the dotted line position. In this position there is a space of about 3/8 inch between the heel of the pawl and the tooth, hence the initial retraction movement of the plunger occurs before the ratchet-wheel is started. The reason for this is important, and is explained hereinafter.

Ratchet-wheel 61 is normally locked against rotation in either direction by a recessed dog 73, engaging one of the teeth 62 as shown. Said dog is fulcrumed upon a screw 74, and its lower extension 75 is drawn backwardly by a tension-spring 76. Said lower portion 75 is provided on its face nearest standard 2 with a stud 77. A wiper-spring 78, secured to the plunger has a downwardly bent end 79 adapted to pass beneath said stud, and has a shoulder 80 adapted (by the return stroke of the plunger) to catch stud 77 and draw the same forwardly, thereby tilting the lever 75 far enough to disengage the dog 73 from tooth 62. This occurs just before pawl 66 impinges upon the tooth to rotate the wheel. The wheel is turned one-sixth of a revolution, by said pawl, and as soon as the following tooth arrives at a certain position it is engaged by the dog 73. It is apparent that the dog 73 by gravitation engages the ratchet wheel 61 and is held into such engagement with the teeth 62, and for the purpose of controlling the outward movement of the said dog 73 the spring 76 is provided so that when the plunger moves forward the wiper spring 78 secured to said plunger and having the shoulder 80 is adapted to engage the catch stud 77 on

the dog 73 and upon the reverse movement of the plunger causes the dog 73 to be drawn from engagement with the ratchet wheel 61, and when released by the shoulder 80 the spring 76 tends to shift the said dog 73 in a position so that the same by gravity will fall into locking position or in engagement with the teeth 62 of the ratchet wheel 61. It is obvious that the said spring 76 can be dispensed with, and any well known means for limiting the swing of the said dog 73 can be substituted if found desirable.

Pawl arm 67 is connected by a spring 81, to the plunger as shown, to counteract the tendency of said pawl arm to drop forward when the pawl strikes one of the ratchet-teeth on the inward stroke.

Referring again to Fig. 1; 82 designates the inner end of the plunger 69. When the plunger is pushed back without a proper coin having been inserted in the chute 83, the end 82 will strike the end of a gravity-dog 84, pivoted on a pin 85, and a complete stroke of the plunger will thereby be prevented. But if a proper coin be inserted (through the slotted plate 86, Fig. 8) said coin will stop in the position indicated by dotted circle *d*, directly in the path of the plunger, and at such a height that the inward movement of the plunger will push the coin back under the dog (lifting the latter) and eject said coin through a slot (not shown) at the rear, so that it will fall inside the casing of the machine.

Any number of devices, not shown, may be employed for returning "slugs" and undersized coins, through an opening *e* in the front of the casing.

The depending arm 18 has an outturned end 18^a held against lever 50 by the weight of the starter 15.

The delivering-wheel shaft 65, if made detachable from the machine, has tubular ends, as shown. The end which engages the hub of ratchet-wheel 61 is provided with a cross-pin 87 which enters recesses 64 thereby forming a positive driving connection between the ratchet and delivering-wheels. The opposite end of the shaft 65 is journaled on a non-rotating pin 88 which may be withdrawn when the delivering-wheel is to be removed from the machine for repairs etc. The delivering-wheel consists of two members A B and a threaded sleeve 94 uniting said members. Members A B comprise outer and inner sections 89 90, respectively, each of which consists of a circular rim having six equally-spaced pockets 91, and spokes 92 connecting the same to hubs. Hubs 93 of the outer sections turn outwardly, while hubs 93' on the inner sections extend into sleeve 94, said sleeves and hub 93' being fixed to shaft 65 by set-screws 95. The outer members 89, however, are rotatable upon the shaft for the purpose of obtaining different adjustments thereof relative to the inner members, so that the width of the pockets 91 may be varied for different sizes of cigars.

To facilitate such adjustments the sections 89 are provided with adjusting-screws 96 passing through studs 97, and loosely engaging studs 98 on the other sections. Screws 96 are prevented from withdrawing from studs 97 by set-screws 99 engaging annular grooves 100 in said screws 96. The operation is obvious, and it will also be understood that the two outer wheel sections are independently adjustable upon the two inner wheel sections. When pockets 91 of sections 89 register with those of the inner sections, the maximum width of pocket for the cigars is obtained. Any lesser width

may be obtained by proper adjustment of said outer sections.

It will be observed that one pocket 101 of each wheel-member is of double depth. The object of this construction is to cause the wheel to receive, and deliver once at each revolution, two cigars instead of one. This feature will be an inducement for patronizing the machine, and at the same time it does not render the machine a gambling device, for every operation delivers at least one cigar the retail price of which is the same as the coin by which the machine is operated.

The cigars do not rest upon the bottoms of the pockets 91 which are non-adjustable, but are supported by wire-loops 102, the inner ends of which are inserted in holes drilled in the outer faces of two collars 103, loosely mounted on sleeve 94. Said ends are secured therein by small screws 104. The wire of said loops is resilient, and causes the loops to be always pressed against the inner faces of the inside wheel sections 90. To maintain said pressure when the collars are moved towards each other, each leg of each loop is formed with a coil 105. The tendency of the loops and their coils is to press the collars inwardly along the sleeve 94, which pressure is resisted by two nuts 106, threaded upon said sleeve. By turning these nuts apart, the loops 102 are extended, thereby decreasing the depth of the pockets, and by turning said nuts towards each other, the loops are drawn in, and the depth of said pockets increased.

Where tapering shaped cigars are being vended, the two sets of loops are relatively adjusted so that one set will decrease the depth of the pockets at one side of the wheel more than the other; the shallower depth being on the side that supports the smaller ends of the cigars. The object of this is to hold the cigars in a level position in the uppermost pockets. This prevents either end of a cigar from catching on the lower edge of the agitator plate 25 when the wheel starts to turn, and also it will make the action of the separator 37 more certain.

As the delivering-wheel charged with cigars, turns forward, there is a tendency for one cigar to fall from the wheel before the wheel has reached its proper position for delivering that cigar. This is prevented by two retainers 107, formed of arc-shaped strips of sheet metal, almost in contact with the wheel, and supported by the frame-bolt 3. It is evident that a cigar cannot drop from the wheel until it has reached the position indicated by dotted circle in Fig. 2.

As it falls from the wheel, the cigar rolls down a nearly vertical plate 108, and forward through a slot 109, cut in the front of the casing. A molding 110 on the base 112 prevents the cigar from rolling off the base-plate.

As shown in Figs. 1 and 8, the front of the casing is provided with several sight-panes through which the box of cigars and certain portions of the mechanism may be observed by customers, and through which revenue officers may inspect the stamp of the cigar-box without opening the casing.

The lid 8^a of the cigar-box 8 is held in open position, to permit the contents to be seen, and the inclined portion of the casing thereabove is provided with a plate of glass 113 for the purpose named. Directly in front of the agitator is another plate of glass 114. In

order that customers may be able to see whether or not a cigar is ready for delivery (upon the delivering-wheel), a small, narrow pane 115 is provided, it being located at an angle of about 30 degrees above the horizontal, in front of one of the pockets of the delivering-wheel, see Fig. 11. To limit the field of observation to the line of vision, inclined plates 116 are provided, as shown in Fig. 11, said plates being supported by a bracket 117.

As a modification of the means shown for adjusting the width of the throat, the construction shown in Fig. 12 may be employed. In this case the lower agitator-plate is non-adjustably secured to the rock-shaft 22^a, and the "starter" is made adjustable forward and backward. To that end the starter is constructed in two parts 15^a and 15^b the latter being adjustable relatively to the former by means of screws 118 passing through slots 119. The throat-member 20^a, instead of being non-adjustably supported, is supported by two stems 120 passing through holes in cross-bar 17^a and having threaded ends provided with thumb-nuts 121. A bowed spring 122 is held between cross-bar 17^a and plate 20^b for moving the latter forwardly when the nuts 121 are turned to the left. When the nuts are turned to the right, the plate 20^b is drawn rearwardly thereby increasing the width of the cigar passage.

The complete operation of the machine is as follows:—The customer drops a proper coin through a slotted plate 86 at the right of the front of the case. The coin traverses the chute, and comes to rest in the dotted line position, Fig. 1, between the end of the plunger and the gravity-dog 84. The customer pushes in the push-bar as far as it will go, then releases it. The inward motion of the plunger causes lug 69^a to push back the end 49 of lever 47, and carries the pawl arm 67 back to the dotted-line position, Fig. 3. Said motion of lever 47 causes its arm 46 to act upon arm 45, turn rock-shaft 39, swing back arms 38, and draw back the separator 37, until its end rests upon the support 41, thus leaving the throat unobstructed. Simultaneously with this movement, the upper end 50 of lever 47 acts upon connecting-bar 51, throws arm 52 forward, turns shaft 22 which causes the hammer to tap the bottom of the cigar-box. The turning of shaft 22 also tips screws 24 and thereby the lower agitator-plate 25, which by means of hinge lugs 26 26' draws the upper agitator plate 27 forwardly, and, as shown by dotted lines in Fig. 2, the throat or cigar passage is thereby widened sufficiently to permit one or more cigars to descend into the registering pocket of the delivering-wheel, according to the depth of said pocket. In either case the top of the cigar or cigars will be about even with the periphery of the wheel. Said movement of lever 47 has also swung arm 18, turned rock-shaft 16, and lifted the starter 15 a short distance above its rest 17. Said starter is always overlaid with cigars, excepting when only one cigar remains and lies upon the separator 37. The upward movement of the separator agitates the cigars thereabove at the time the agitator plates 25 27 recede from it, and thus the descent of one or more cigars into the throat is assured, and "blocking" is prevented.

At the moment when the agitator plates 25 and 27 are carried out past the "dead center" line, the spring

55 acting on rod 28 suddenly takes up the lost motion in the pin-and-slot joint on lever 50 and connecting-bar 51, the effect of which is to give to the agitator a sudden, quick impulse outwardly. The effect of the sudden movement upon the cigars in the throat is to break up a "block" if one exists at the time, and to make it certain that one of the cigars will fall into the delivering-wheel when the separator is retracted.

When the operator releases the push-bar, the spring 70 returns the same to normal, and this return movement of the push-bar and plunger acts upon the several devices, as follows:—The spring 54 draws lever 47 forwardly thereby permitting spring 44 to draw the separator 37 forwardly, and before the pawl 66 has touched the ratchet-tooth 62, the front end of the separator has passed entirely across the uppermost pocket of the delivering-wheel, thereby separating and lifting the cigar lying above said wheel from the one resting in the pocket. In its initial movement the raised portion of the separator slides upon support 41, but as soon as its offset 43 strikes said support, the separator is thereby lifted, and lifts the cigar as aforesaid. Owing to the aforesaid lost motion between the pawl 66 and ratchet-tooth 62, the mass of cigars is invariably cut off from those received by the wheel, before the latter starts to revolve. If the separation did not occur until the wheel started to revolve, the operation of the machine might become clogged by displaced cigars.

The continued movement of the plunger 69 causes the pawl 66 to turn the delivering-wheel a distance equal to that between the centers of its pockets. Just before pawl 66 engages the tooth 62, the recessed dog 73 is disengaged by means of shoulder 80 engaging the stud 77 on lever 75 which carries said dog. At a certain point said shoulder slips past stud 77, thereby releasing said dog, which is again pressed into engagement, by spring 76, with the following tooth 62.

The return movement of lever 47 draws back connecting-bar 51 and arm 52, rocking shaft 22, and restores the agitator to normal position.

As the agitator is drawn back, or in, past the dead center line, the spring and the pin-and-slot joint again come into play, and cause said agitator to be suddenly jerked a short distance, which is determined by the length of the slot through which the pin passes.

Although I have described the invention as a cigar-vending machine, I, of course, do not limit myself to this use, as it may be employed for dispensing gum and other articles of merchandise.

Having thus described my invention what I claim and desire to secure by Letters-Patent, is:—

1. In a vending machine, a goods container, a support for the latter to hold the same at an inclination, a rotatable carrier having adjustable sections provided with a plurality of peripheral recesses forming pockets, adjustable collars interposed between the sections, yieldable loops carried by the collars for increasing or decreasing the depth of the pockets formed by the recesses, a plunger having a push-bar, hinged plates coöperative with the latter to interrupt the path of movement of the goods to the rotatable carrier upon movement of the push bar in one direction, means normally in engagement with the rotary element for imparting an intermittent motion to the same when said plunger is moved in one direction, means controlled by the plunger in an opposite direction to lock the element against movement, and an agitator acting upon the container for vibrating the same to impart free delivery of the goods to the rotary element.

2. In a vending machine, an adjustable rotary goods receiving and delivery element including sections having peripheral recesses, adjustable means for regulating the depth of the recesses, a shiftable plunger, means independent of each other and coöperative with the plunger for engagement with the said element for moving the same when the plunger moves in one direction and for locking the said element against movement when the plunger moves in an opposite direction, a merchandise supporting means, the latter being adjustable to give the proper inclination thereto, and an agitator coöperative with the plunger for vibrating the supporting means to cause free delivery of the merchandise from the said supporting means to the receiving and delivery element.

3. In a vending machine, a rotary receiving and delivery element, an article container, means forming throat communication from the latter to the said element, mechanism including a movable plunger for imparting intermittent motion to the rotary element, means arranged in the throat communication and actuated upon by the plunger for interrupting and freeing the delivery of the goods from the container, and an agitator operative by the plunger and acting directly on the article container for vibrating the same to impart initial feed of the goods from the said container to the receiving and delivery element.

4. In a vending machine, a cigar container, a cigar receiving and delivery element rotatably mounted in the machine, a reversely movable means for interrupting the path of movement of the cigars from the container, and plunger controlled mechanism for intermittently rotating the said element and for actuating the said means to move the same in opposite directions.

5. A vending machine involving a cigar container, means for adjusting the container, a rotary element for receiving and delivering cigars, means forming a throat communication between the said element and the container, a plunger, mechanism coöperative therewith for imparting intermittent motion to the said rotary element, means actuated by the movement of the plunger to interrupt the path of movement of the cigars from the container, and means operated by the movement of the plunger in one direction for agitating the container to allow free delivery of the cigars.

6. A vending machine, involving a rotary receiving and delivery element, an article container having throat communication with the said element, mechanism including a movable plunger for imparting intermittent motion to the rotary element, means actuated upon by the plunger for interrupting and freeing the delivery of the cigars from the container, and an agitator for vibrating the article container.

7. In a vending-machine, the combination with a suitably supported cigar container, of an agitator forming a continuation of the bottom thereof, a horizontally-movable member below the agitator, a rotary carrier below said member, and means to intermittently rotate the carrier.

8. In a vending-machine, a rotary carrier consisting of two pairs of sections, axially aligned, each section having peripheral pockets, and means for rotatably adjusting one member of each pair relatively to the other two.

9. In a vending-machine, a rotary carrier mounted on a shaft, said carrier comprising two pairs of separately-adjustable sections having peripheral pockets, and radially-adjustable members forming supports for articles of merchandise in certain positions of the carrier.

10. In a vending-machine, a rotary carrier mounted on a shaft, said carrier comprising two pairs of separately-adjustable sections having peripheral pockets for the purpose named, and radially-adjustable resilient members forming supports for articles of merchandise in certain positions of the carrier.

11. In a cigar vending-machine, a rotary carrier comprising a shaft, two pairs of pocketed sections mounted thereon, one section of each pair being rotatably adjustable, a threaded sleeve extending between the inside sections, a pair of nuts on said sleeve, a pair of slidable collars between the nuts and the inner sections, and two series of resilient, radially-adjustable members carried by said nuts, the outer ends of said members lying closely

against the inner sides of the inner sections and forming cigar supports in certain positions of the carrier.

12. In a vending-machine, a rotary carrier comprising a shaft, two pairs of pocketed sections mounted thereon, one section of each pair being rotatably adjustable, a threaded sleeve extending between the inside sections, a pair of nuts on said sleeve, a pair of slidable collars between the nuts and the inner sections, and two series of resilient, radially-adjustable wire loops carried by said nuts, the outer ends of said wire loops lying closely against the inner sides of the inner sections and forming supports.

13. The combination of a goods container, mechanism for receiving and delivering goods from the container, means for causing positively a free feed of the goods to said mechanism, means for interrupting the path of movement of the goods from the container to the mechanism, and means for operating the said mechanism.

14. In a cigar vending machine, a rotatable carrier having adjustable sections provided with a plurality of peripheral recesses forming pockets, a goods container mounted above the carrier, plunger controlled mechanism for intermittently rotating the carrier, and means arranged between the container and the carrier for interrupting the path of movement of the goods to the carrier.

15. In a vending machine, a rotary carrier, a shaft supporting the said carrier, a ratchet wheel on said shaft for driving the carrier, a plunger, a pawl carried by the plunger and coöperative with the ratchet wheel for imparting rotary motion thereto when the plunger is moved in one direction, an auxiliary pawl coöperative with the plunger and ratchet wheel to limit the rotary movement thereof and to lock the carrier in a fixed position when the plunger is operated in an opposite direction, an article container, means for interrupting the path of movement of the articles to the carrier, and an agitator mechanism actuated by the movement of the plunger for causing positively free delivery of goods to the carrier.

16. In a vending-machine, the combination with a receptacle for merchandise, of a throat leading therefrom, the front of said throat being formed by a pair of toggle-jointed plates, a rock-shaft secured to one of said plates, means to rock said shaft in a manner to enlarge the throat, and also in a reverse direction.

17. In a vending-machine, the combination with a receptacle for merchandise, of a throat comprising adjustable side members and inwardly and outwardly movable front members, with means for moving said front members outwardly and inwardly.

18. In a vending-machine, the combination with a receptacle for merchandise, of a throat leading therefrom, the front of said throat being formed by a pair of toggle-jointed plates, means to shift said plates in a manner to enlarge the throat, and means to restore the parts to normal positions.

19. In a vending-machine, the combination with a receptacle for merchandise, of a throat leading therefrom, said throat including an agitator, a rotary carrier, means for imparting a step-by-step rotation to the carrier, a separating device normally closing the lower end of the throat, above the carrier, a plunger, means actuated by the in stroke of the plunger for retracting the separating device, similarly actuated means to actuate the agitator, and means actuated by the out stroke of the plunger for moving the separator across the throat, and similarly actuated means to rotate the carrier one step after said closing movement of the separator.

20. In a vending machine, the combination with a cigar container, of a rotary carrier for receiving and delivering the cigars, a plunger, mechanism coöperative therewith for actuating the carrier to impart intermittent movement thereto, means controlled by the movement of the plunger to interrupt the path of movement of the cigars from the container to the carrier, and an agitating device operative by the movement of the plunger for oscillating the said device for direct action upon the container to cause free movement of the cigars to the carrier.

21. In a vending-machine, the combination with a cigar container, of a primary agitating device over which the cigars roll from the container, a secondary agitating de-

vice, means to operate both agitating devices prior to the operation of the rotary carrier, and means to actuate said devices in the reverse direction during the rotation of the carrier.

5 22. In a vending-machine, the combination with a cigar container and a throat leading therefrom, of a rotary carrier having a step-by-step movement, an operating plunger, a lever operated by the plunger, a separator, a rock-shaft carrying means to actuate the separator, means by which said lever actuates said rock-shaft, and a spring to restore the separator to normal position.

23. In a vending machine, a throat adapted to carry merchandise from a holder to a carrier, an inclined starter over which said merchandise rolls in passing from the holder into the throat, said starter being adjustable, means

to oscillate said starter, and a forwardly and rearwardly adjustable plate forming the rear wall of the throat.

24. In a cigar vending-machine, a cigar container, an inclined starter over which the cigars roll from the container, a rest, having a downward projection, an adjusting- 20 screw passing freely through said projection, a throat-member secured to one end of said screw and forming the rear wall of a throat, a spring pressing said throat member forwardly, and an adjusting nut on said screw.

In testimony whereof I affix my signature, in the pres- 25
ence of two witnesses.

ALONZO JACOBS.

Witnesses:

F. G. FISCHER,
JESSIE MOORE.