

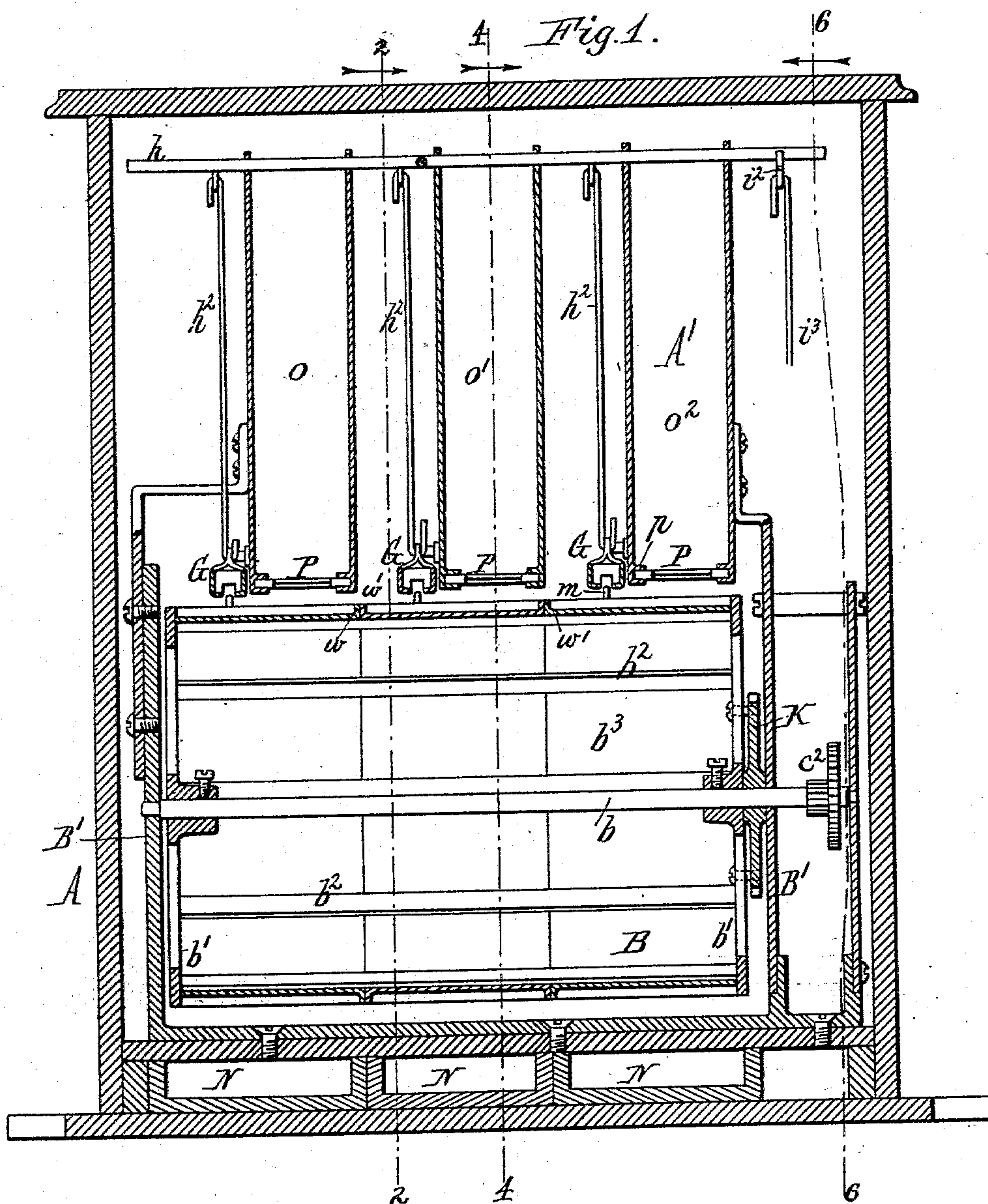
(No Model.)

5 Sheets—Sheet 1.

E. T. BROWN & W. W. OLCOTT.
VENDING MACHINE.

No. 515,741.

Patented Mar. 6, 1894.



Witnesses:

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5 Sheets—Sheet 2.

No. 515,741.

Patented Mar. 6, 1894.

Fig. 2.

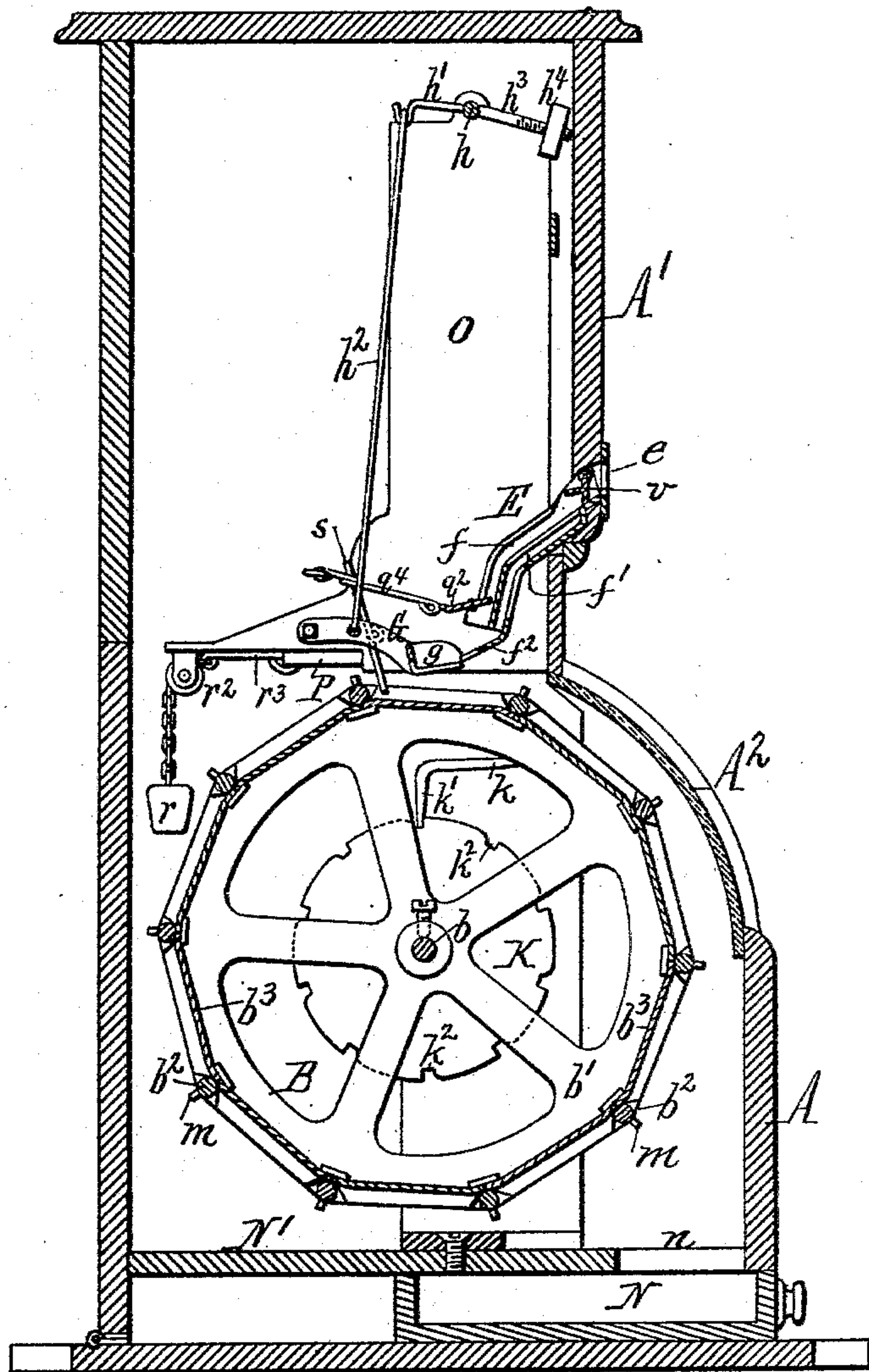
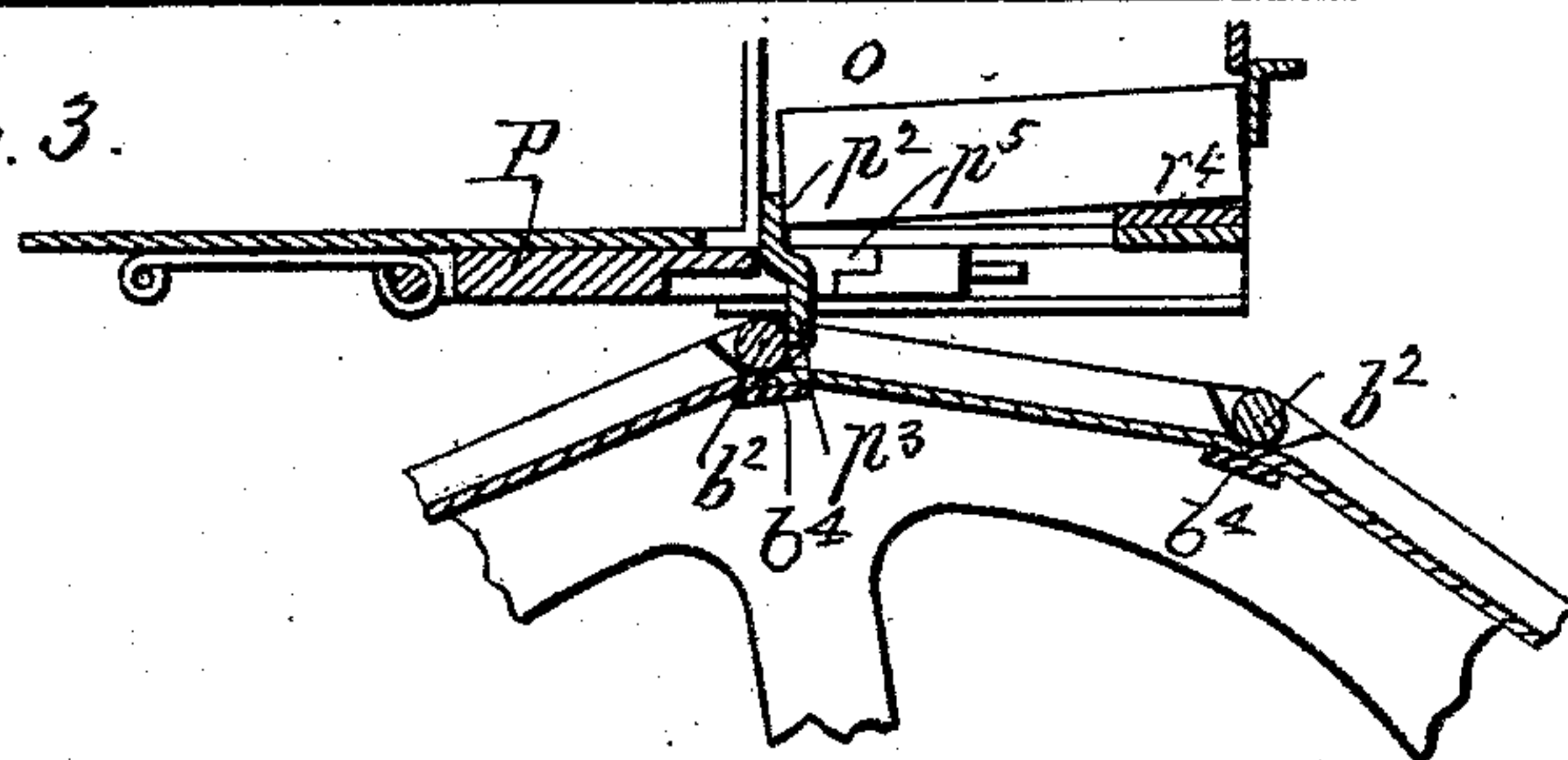


Fig. 3.



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(No Model.)

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Fig. 4.

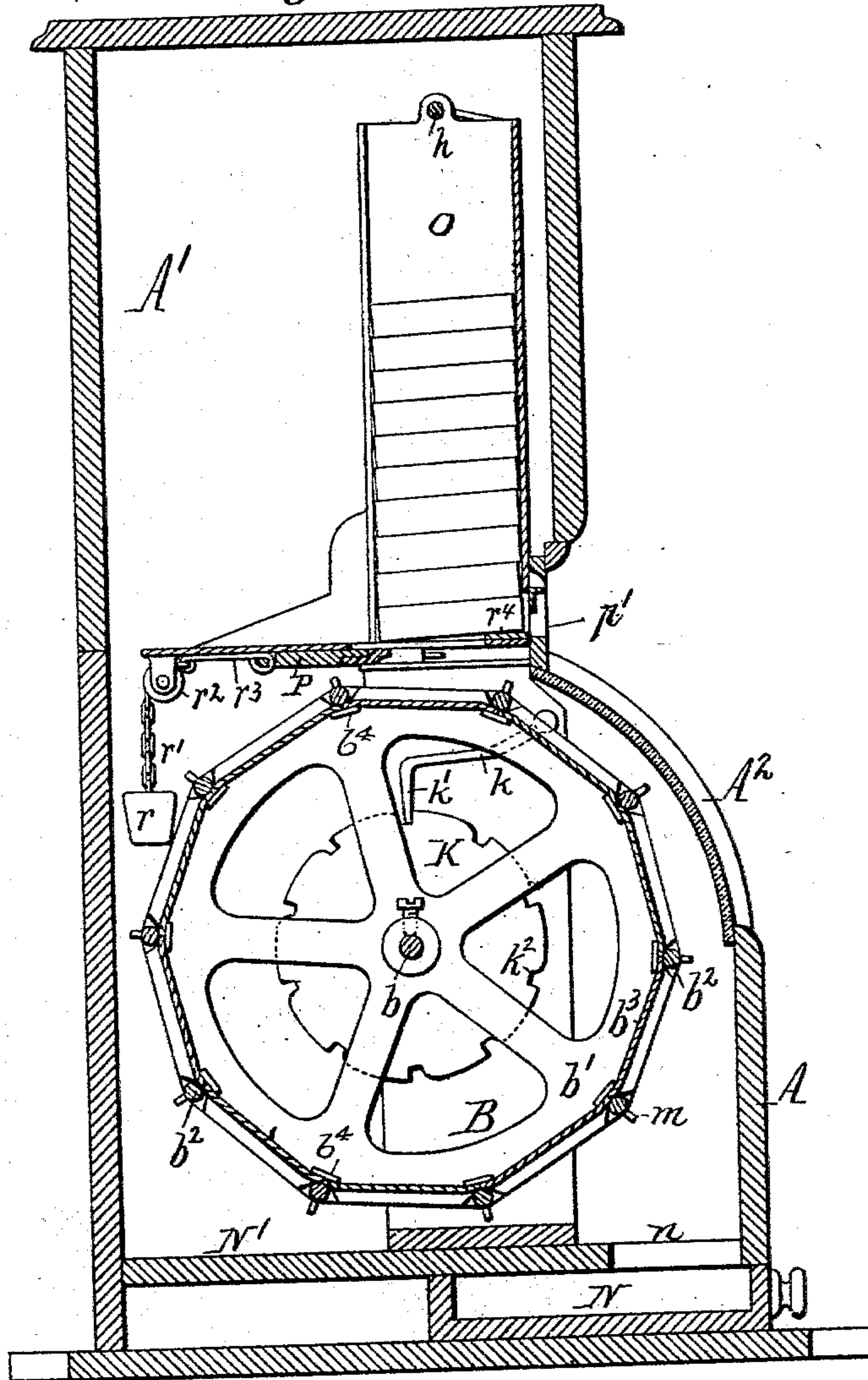
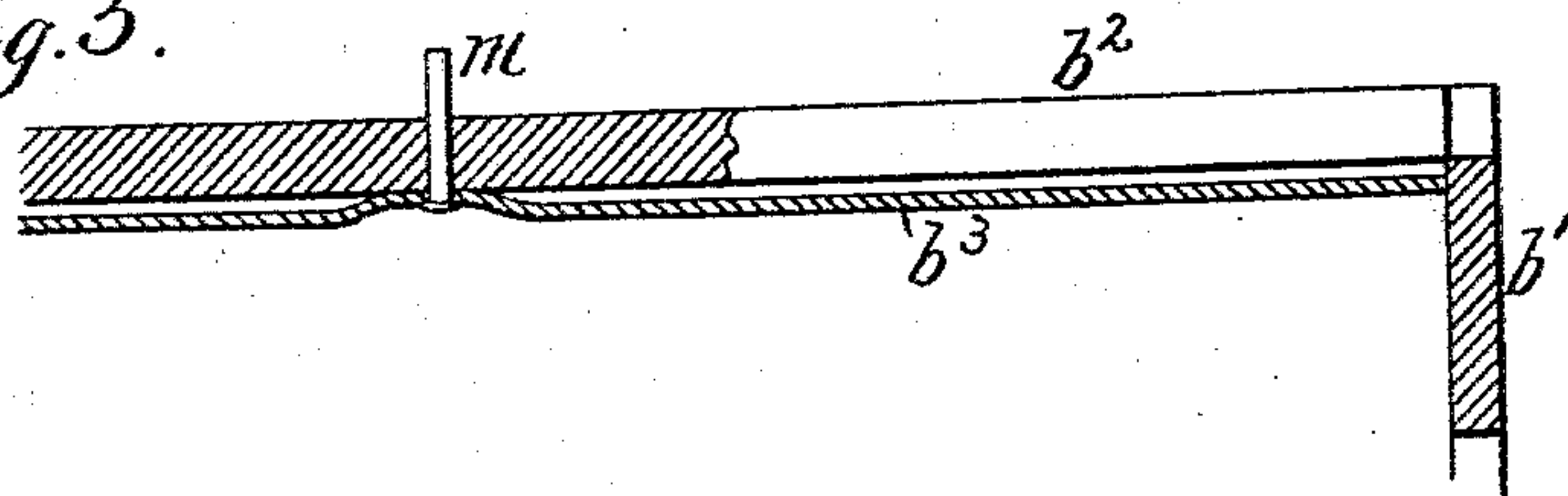


Fig. 5.



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(No Model.)

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Fig. 6.

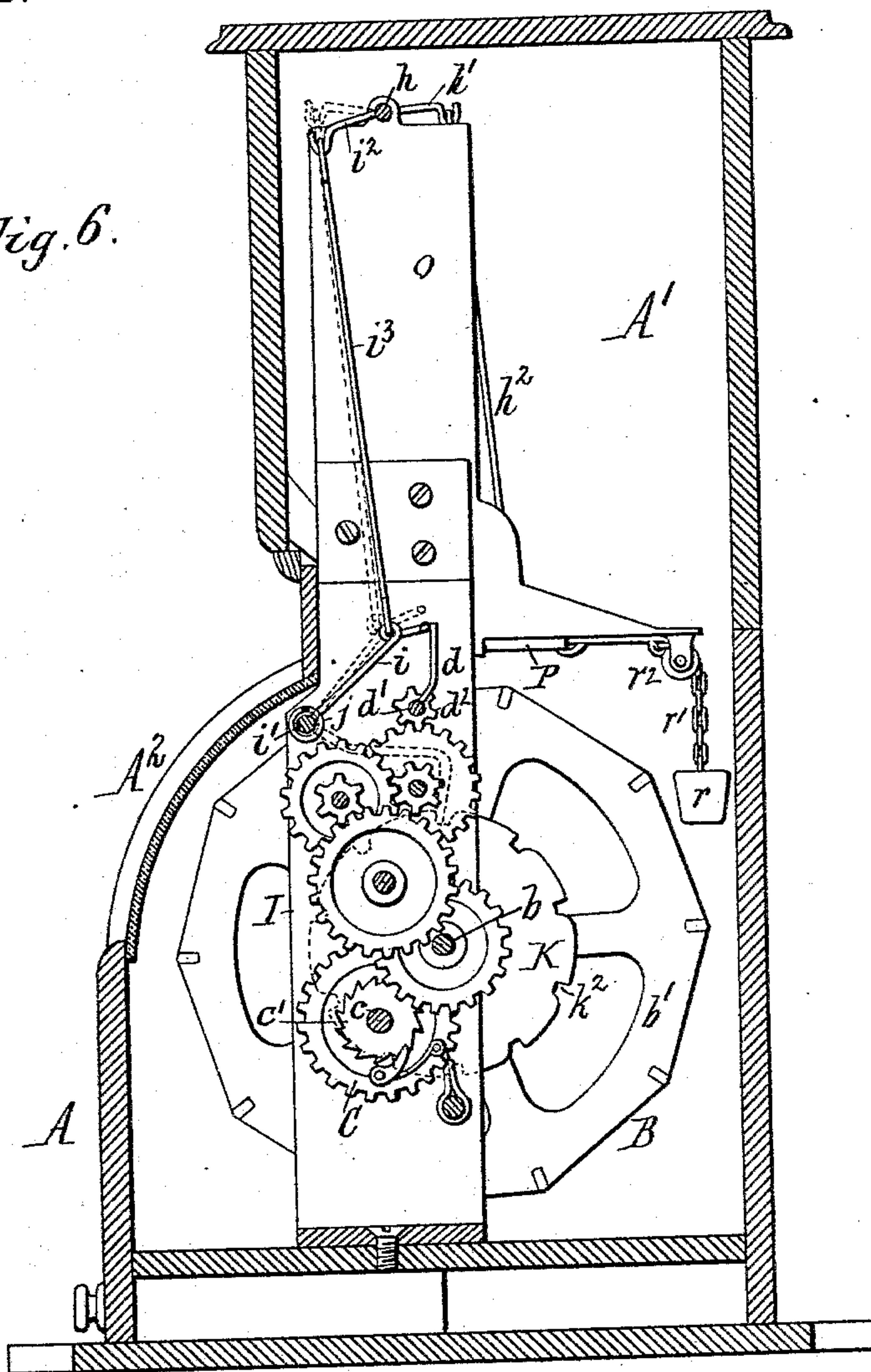
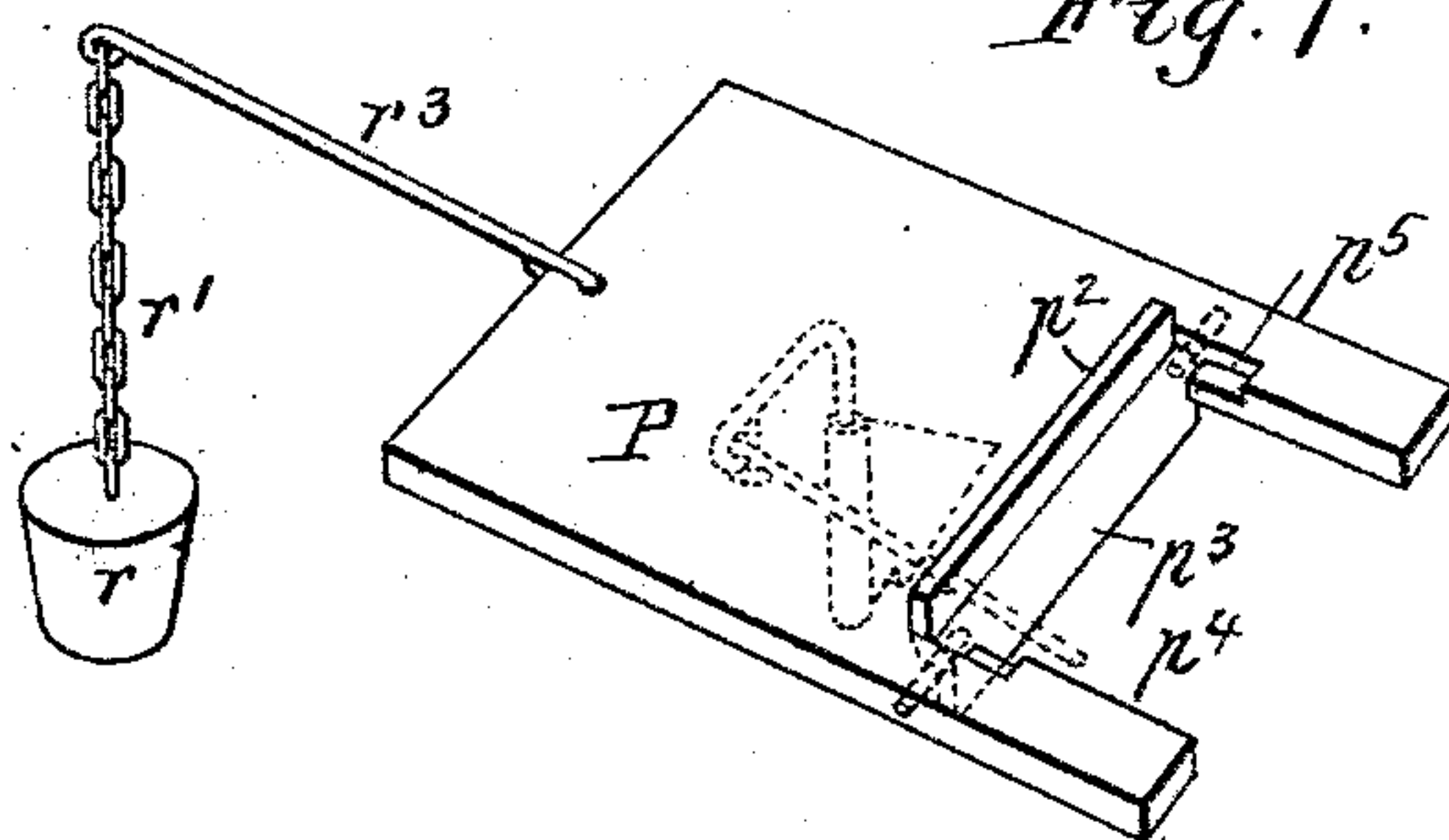


Fig. 7.



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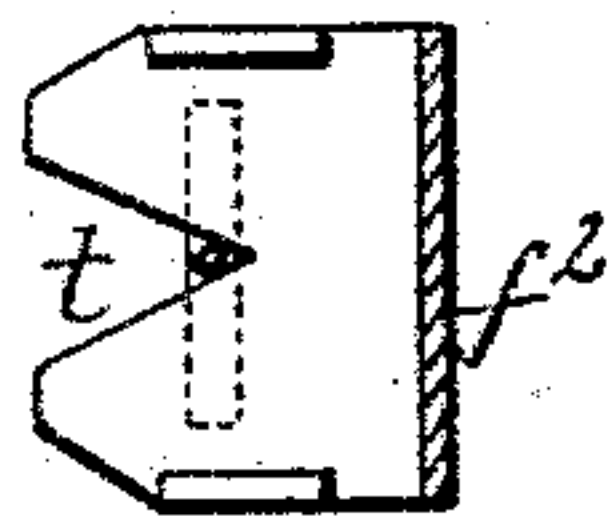
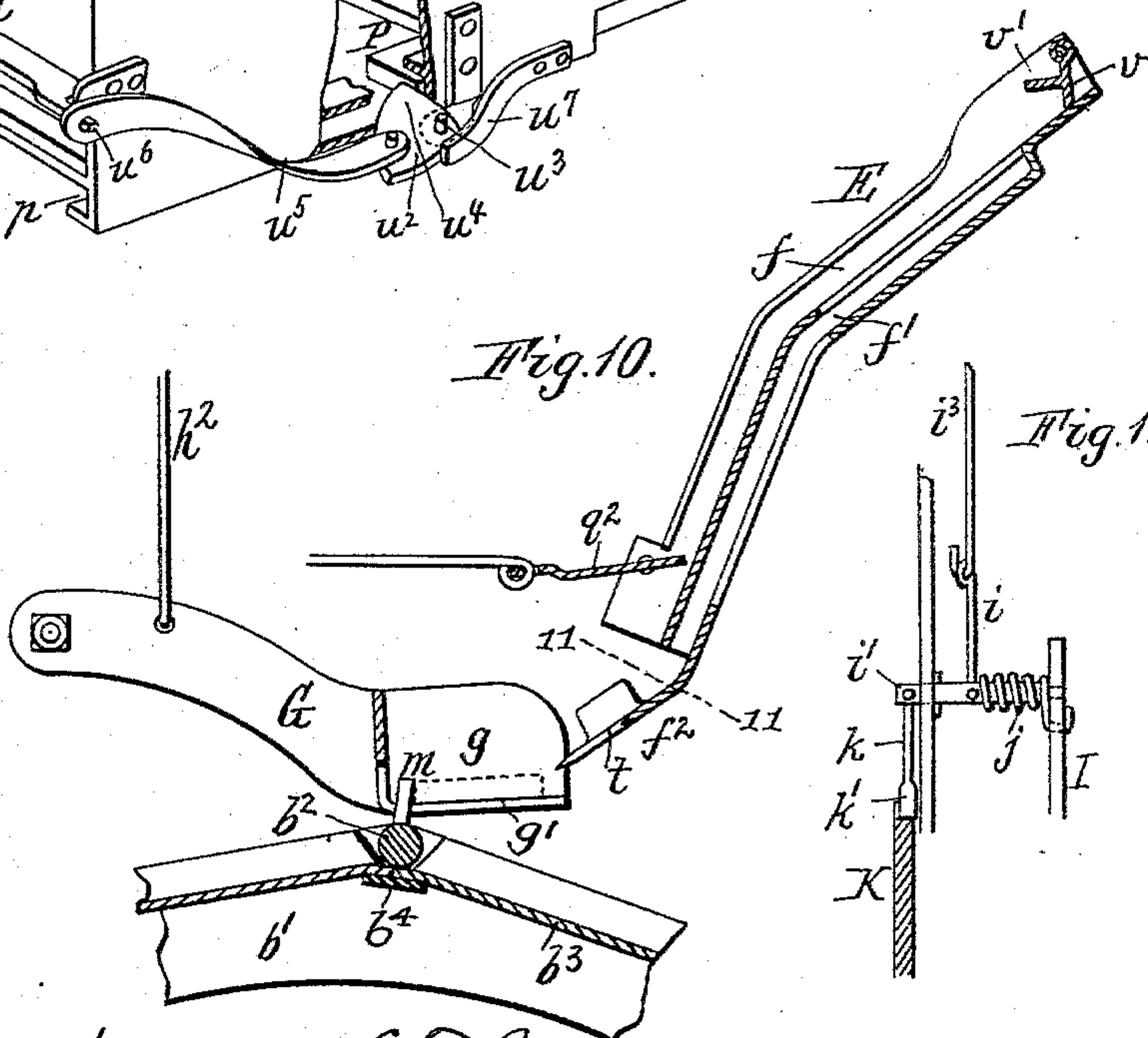
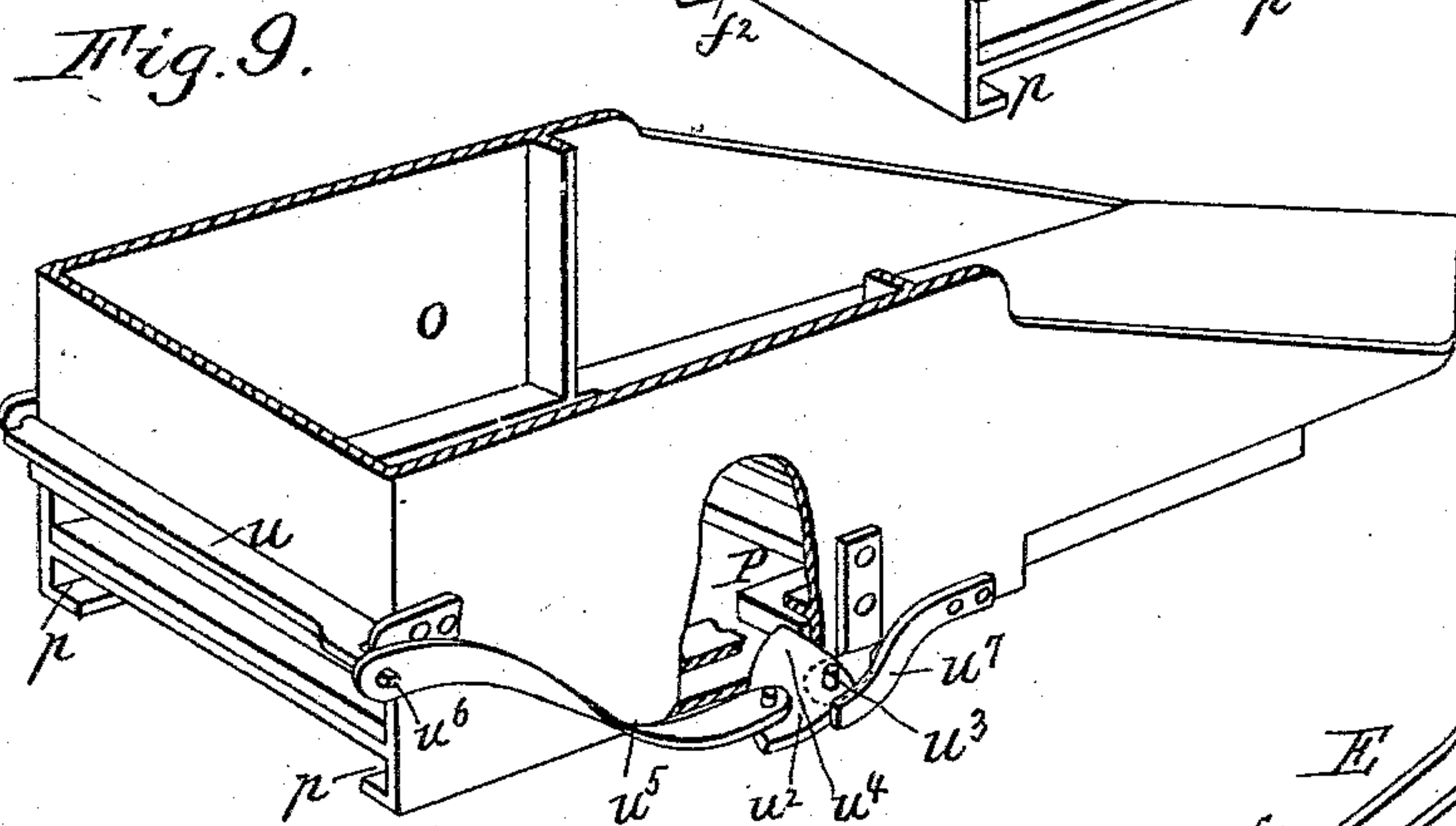
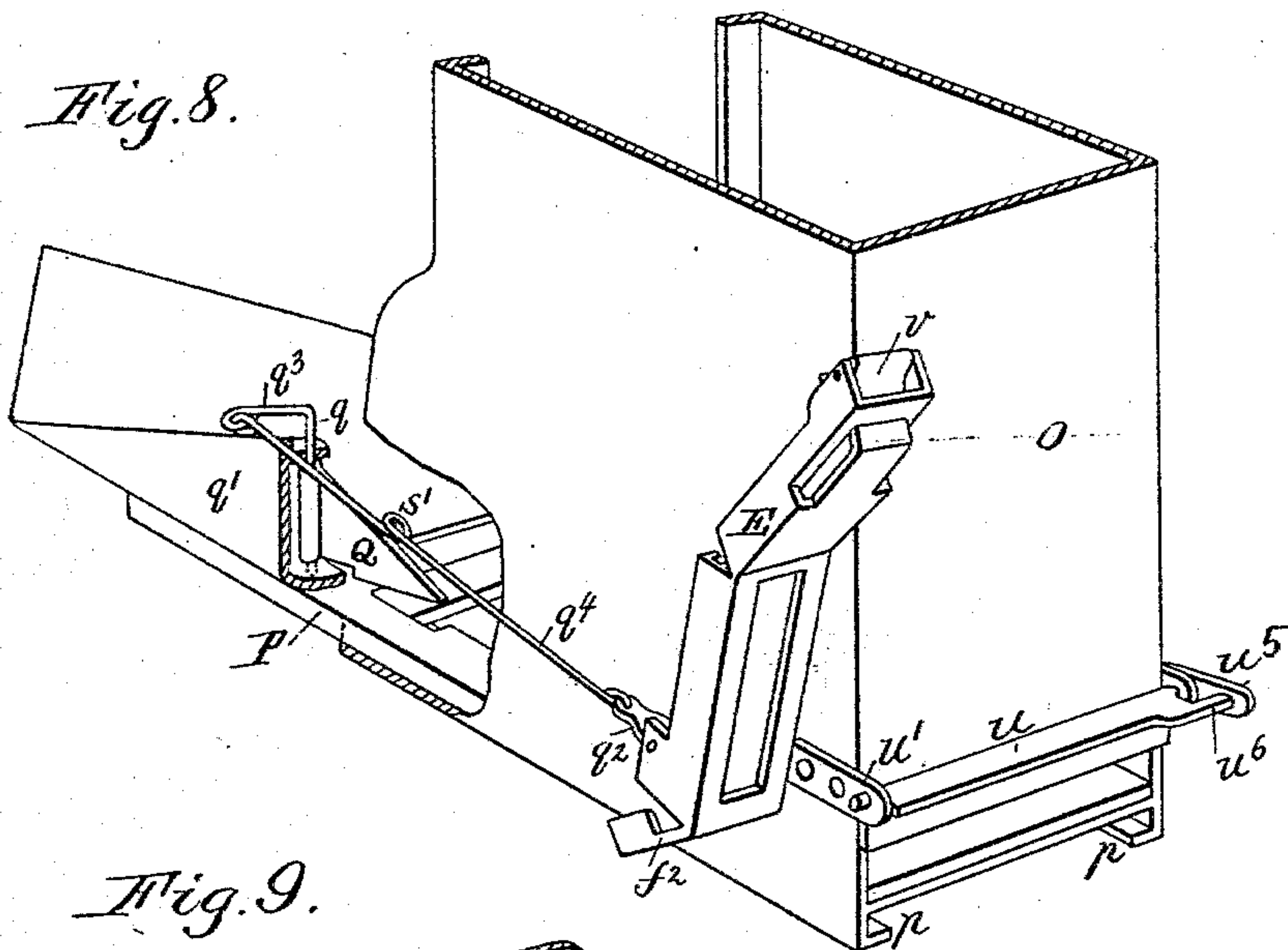
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5 Sheets—Sheet 5.

E. T. BROWN & W. W. OLCOTT.
VENDING MACHINE.

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UNITED STATES PATENT OFFICE.

EGBERT T. BROWN AND WILLIAM W. OLCOTT, OF BUFFALO, NEW YORK.

VENDING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 515,741, dated March 6, 1894.

Application filed February 23, 1893. Serial No. 463,346. (No model.)

To all whom it may concern:

Be it known that we, EGBERT T. BROWN and WILLIAM W. OLCOTT, citizens of the United States, residing at Buffalo, in the county of Erie and State of New York, have invented new and useful Improvements in Automatic Vending-Machines, of which the following is a specification.

This invention relates more especially to automatic vending machines which comprise a magazine or receptacle containing the articles to be sold, a feed device for successively discharging the articles, a clock mechanism or other motor for operating the feed device, a coin chute, and a trip device arranged in the path of the coin for releasing the clock mechanism or motor.

Our invention has for its objects to produce a vending machine of this character whereby a number of different articles may be placed on sale; to provide a reliable trip mechanism for arresting and releasing the motive power, and an efficient feed device for successively delivering the articles; to provide means for preventing fraudulent manipulation of the machine; to provide means for preventing abstraction of the articles through the delivery aperture of the machine, and finally to combine with the vending devices a rotary display cylinder containing pockets for the coins.

In the accompanying drawings consisting of five sheets: Figure 1. is a longitudinal sectional elevation of our improved vending machine. Fig. 2. is a vertical cross section thereof in line 2—2, Fig. 1. Fig. 3. is a fragmentary longitudinal section of one of the package magazines, showing the position of the parts preparatory to ejecting the package. Fig. 4 is a vertical cross section of the machine in line 4—4, Fig. 1. Fig. 5 is a fragmentary longitudinal section partly in elevation of the rotary display cylinder. Fig. 6 is a vertical cross section of the machine in line 6—6, Fig. 1. Fig. 7 is a detached perspective view of one of the package delivery slides. Fig. 8 is a fragmentary perspective view of one of the package magazines showing the devices for operating the lip or projection of the delivery slides. Fig. 9 is a similar view, showing the means for preventing abstraction of the packages. Fig. 10 is

a fragmentary cross-section, on an enlarged scale, of the display cylinder, the coin chute and the trip device for releasing the motive power of the machine. Fig. 11 is a cross-section of the lower portion of the coin chute, in line 11—11— Fig. 10. Fig. 12 is a front view of the retaining finger of the motor and its spring.

Like letters of reference refer to like parts in the several figures.

The inclosing case of the machine is substantially rectangular in form and consists of an enlarged lower portion A, and a contracted upper portion A'. The enlarged part A is provided in its upper front side with a curved window A² extending from end to end of the case, through which the display cylinder is exposed.

B represents the display cylinder which is arranged in the lower portion of the case and is secured to a horizontal shaft *b* journaled in bearings formed in standards B' rising from the bottom of the case, as clearly shown in Fig. 1. This display cylinder is composed of heads *b'* secured to the cylinder shaft and longitudinal rods or bars *b²* connecting the heads, and plates or panels *b³* of tin or other suitable material supported between the rods *b²*. The plates are preferably attached to the rods by clasps consisting of longitudinal strips of tin *b⁴* secured to the inner sides of the rods, the edges of the plates being inserted between said strips and the rods, as clearly shown in Figs. 3, 4 and 5. The plates or panels *b³* may contain advertisements or other matter which are exposed through the window of the front wall of the case upon arriving opposite the same.

The display cylinder is rotated by any suitable motive power. In the construction shown in the drawings an ordinary clock work is employed for this purpose.

C, Fig. 6, is the main gear wheel of the clock work which is mounted upon the winding spindle *c*, to which latter is fastened the inner end of the usual clock spring.

c' is the ratchet wheel for holding the spindle from retrograde movement in winding the spring, and *c²* is the driving gear of the display cylinder, mounted upon the adjacent end of the cylinder shaft and geared with the main gear wheel C.

d is a movable stop arm or finger whereby the movement of the cylinder is restrained. This finger is secured to a horizontal shaft d' to which is secured a pinion d^2 which is geared with the driving gear C of the display cylinder by an intermediate train of gear wheels, as shown in Fig. 6, so that by arresting the stop finger the display cylinder is held against turning, while upon releasing the finger the clock work is permitted to turn the cylinder. The intermediate train of gear wheels is employed for the purpose of reducing the speed and resistance of the stop finger. Any other convenient and suitable motive power may be used in lieu of the clock mechanism herein shown and described. The stop finger is released by the deposit of a coin by means of the following mechanism:

e represents a number of slots formed in the front wall of the case in which the coin is deposited and E represents inclined coin chutes arranged within the case and coinciding at their upper ends with the coin slots respectively. In the drawings three coin slots and chutes are shown, but a greater or less number may be employed, according to the number of different kinds of articles to be supplied by the machine. Each coin chute is provided with an upper way or slide f designed to receive the coins of the proper denomination to purchase one of the articles, and a lower way f' designed to receive smaller coins or coins of deficient value. The upper way consists of inclined ledges or flanges arranged so closely together as to support a nickel five-cent piece or other comparatively large coin, but still so far apart as to allow a cent or other small coin to drop between them and fall upon the lower way, which latter is also formed of ledges arranged in sufficiently close proximity to support such a coin. The lower way terminates in a rearward extension f^2 which projects beyond the lower extremity of the upper way.

G represents a movable trip arm or lever arranged at the mouth of the chute, in the path of the coins, sliding down the chute. This trip lever is pivotally supported at its rear end so as to swing vertically and preferably carries at its front end a receptacle g for receiving the coins as they come from the chute. This receptacle is open at its front side to allow the coin to slide off when inclined sufficiently by the descent of the lever.

h is a transverse rock shaft journaled in the upper part of the inclosing case and having a rearwardly extending arm h' with which the trip lever G is connected by a rod h^2 .

h^3 is an overhanging counter-balancing arm projecting from the opposite side of the rock shaft and provided with an adjustable weight h^4 . This weight counter-balances the trip lever and holds the same in its elevated position, as clearly shown in Figs. 2 and 10. The counter-balancing arm is provided with an external screw thread, as shown and its weight with a screw threaded opening which engages

with the thread of the arm so that by turning the weight in one or the other direction it is moved toward and from the rock shaft and the resistance of the shaft varied correspondingly.

i is a movable retaining arm or catch arranged in the path of the stop finger d , for arresting the movement of the latter and indirectly the movement of the display cylinder. This arm is pivoted at its lower end upon a horizontal rod or arbor i' secured to a standard I and its upper free end is connected with a forwardly extending arm i^2 of the rock shaft h , by a rod i^3 whereby, when the trip lever G is depressed by a coin, the rock shaft is turned in the proper direction to lift the retaining arm i clear of the stop finger, thus releasing the clock work or other motive power and causing the display cylinder to be turned.

j is a spring which tends constantly to depress the retaining arm into the path of the stop finger, so as to arrest the movement of the latter. This spring is coiled around the arbor i' and is secured at one end to the standard I and at its other end to the inner end of the retaining arm i .

k is a releasing finger secured to the arbor i' and provided at its outer end with a tooth k' , adapted to engage with a notched cam disk K secured to the shaft of the display cylinder. This disk is provided around its periphery with as many notches k^2 as there are display panels or faces upon the cylinder, the cylinder having ten such faces in the construction shown in the drawings, although a different number may be employed if desired. These notches are equally spaced around the edge of the disk and each notch is arranged substantially in radial line with the middle of the opposing face of the display cylinder. The rear edge of each of these notches is beveled or inclined, so that when the cylinder is rotated the tooth is lifted to the peripheral edge of the disk and caused to bear upon said edge. This elevation of the releasing arm causes the retaining arm to be lifted out of engagement with the stop finger, thereby releasing the latter and allowing the clock work to rotate the display cylinder. The cylinder continues to turn until the next notch of the cam disk arrives under the tooth of the releasing finger, when the tooth is pressed into said notch by the spring j . The retaining arm which takes part in this downward movement of the releasing finger is thus moved into the path of the stop finger, arresting the clock work and the display cylinder, until its clock work is again released by the deposit of a coin. The concentric peripheral faces of the cam disk between the notches are made so long that the cylinder is turned a distance equal to the width of one of its faces or panels.

m are radial pins or projections arranged on the periphery of the display cylinder, for pushing the coins off the receptacles of the

trip levers G. Each longitudinal rod b^2 of the cylinder carries as many of these pins as there are trip levers and the receptacle of each trip lever is provided in its bottom with a longitudinal slot g' through which the pins project as they pass by the receptacles, and whereby the coins deposited upon the receptacles are pushed from the latter, upon the adjacent panel of the display cylinder. The depressed panels in connection with the raised longitudinal rods b^2 of the cylinder, form shallow coin pockets whereby the coins are carried to the lower portion of the inclosing case and dropped into the drawers N. The horizontal partition N' which separates the drawer compartment from the adjacent portion of the case is provided with apertures n for the passage of the coins.

o, o', o^2 , represent upright magazines or receptacles in which boxes of candy, matches or other articles are arranged one upon the other. These receptacles are arranged side by side in the upper front portion of the case above the display cylinder, and are supported from the standards or in any other convenient manner. These magazines are of the proper cross section to receive the boxes or other articles to be supplied by the machine. Each magazine is open at its lower end and provided with longitudinal ways or ledges p in which is guided a horizontal delivery slide P, whereby the lowermost box or package is moved forwardly and discharged through a horizontal slot or aperture p' formed in the front wall of the magazine at the base of the latter. This slide is provided in its upper side with a projection or transverse rib p^2 adapted to engage against the rear end of the lowermost package and push the same forwardly when the slide is moved in the same direction, and on its under side with a similar projection p^3 adapted to stand in the path of the longitudinal rods b^2 of the rotary display cylinder so as to be struck by one of said rods and cause the slide to be shifted forwardly until the rod, by its forward movement, descends sufficiently to clear the projection of the slide. These projections are preferably movable and formed on a transverse plate pivoted in a recess p^4 , of the slide by pivots formed at opposite ends of the plate and turning in bearings formed in the lateral edges of said recess, as shown in Fig. 7. The portions of this plate on opposite sides of its pivots form the upper and lower projections of the slide and are offset, as shown in said figure. The slide is provided in its upper side immediately in front of the pivots of the pivoted plate with recesses or rabbets p^5 adapted to receive the upper portion of the plate so that upon swinging the plate into the plane of the slide, its upper portion enters said rabbets and forms a flush surface with the upper side of the slide. The slide is provided on its under side immediately in rear of the pivots of the plate with similar rabbets or recesses which receive the lower portion of

the plate when the same is swung into the plane of the plate, thereby rendering the lower portion of the plate flush with the under side of the slide. When the pivoted plate stands at right angles to the slide its upper portion bears against the adjacent edge of the large recess of the slide and thereby limits the rearward swing of the plate beyond this right angle position. The slide is thus compelled to advance with the rotary display cylinder when one of the longitudinal rods of the cylinder bears against the lower projection of the slide. The lower projection of the slide is made heavier than the upper projection so that when the pivoted plate forming the projection is released, it assumes a vertical position by gravity.

Referring to Fig. 8, Q is a laterally swinging stop for holding the pivoted projection plate of the slide flush with the latter, so that the slide is not affected by the movements of the display cylinder. This stop is carried by an upright rock shaft q journaled in a rearward extension q' of the magazine.

q^2 is a trip lever or gate projecting into the upper passage of the coin chute and adapted to operate the stop Q. This trip lever is provided with horizontal pivots journaled in the side walls of the coin chute and its rear arm is connected with an arm q^3 of the upright rock shaft q by a rod q^4 . When these parts are in their normal position as shown in Figs. 2, 4, 8, and 10, the trip lever or gate q^2 projects into the upper way of the coin chute, and the pivoted plate of the slide is in a plane with the latter and the stop extends over the projection plate, so as to hold it in this position. Upon depositing a coin of the proper size to fit the upper way of the chute, the coin in its passage through the chute, strikes the trip gate or front arm of the lever q^2 and swings the same downward, so as to allow the coin to pass by it. By this movement of the lever its rear arm is swung upward, which causes the rock shaft q to be turned in the proper direction to swing the stop Q clear of the pivoted projection plate, thereby releasing the latter and allowing it to assume a position at right angles to the slide. By the subsequent rotation of the display cylinder, the longitudinal rod of the latter immediately in rear of the lower projection of the slide comes in contact with said projection and moves forward the slide and the lowermost box in the magazine. After the slide has been thus shifted forwardly and the rod of the cylinder has cleared the lower projection of the slide the latter is automatically retracted preparatory to delivering another box by a weight r and cord r' , which latter runs over a guide wheel r^2 journaled upon the extension of the magazine and is connected with the slide by means of a wire or link r^3 . As soon as the lowermost box of the pile is pushed through the slot of the magazine, the pile descends and rests upon the longitudinal ledges p . When the slide is retracted

the pivoted plate is caused to swing into the plane of the slide by the weight of the superposed pile of boxes, thus allowing the slide to recede without restraint. The lowermost box of the pile preferably rests with its front portion upon a horizontal rib or support r^4 , as shown in Fig. 4, so as to cause the box to slope rearwardly and present an inclined surface to the upper portion of the pivoted plate, whereby the same is caused to turn reliably, without binding, when the slide is drawn backward.

s is a return device for again closing the gate after the coin has passed by it and for swinging the stop Q over the pivoted plate of the slide so as to hold it flush with the slide, until the deposit of another coin. This return device consists of an upright lever pivoted to the side of the magazine and having its upper arm arranged in an eye s' formed on the connecting rod q^4 , while its lower arm extends downward into the path of the longitudinal rods b^2 of the display cylinder, as shown in Fig. 2. This lever is so arranged as to be operated at some time after the coin has been deposited and before the slide is retracted. One of the rods b^2 first shifts the slide forward and the same rod then strikes the return lever and swings its lower arm forwardly, thereby swinging its upper arm with the rod backward. This causes the rock shaft q , to be turned in the proper direction to swing the stop Q into the position shown in Fig. 8, ready to overlap the pivoted plate of the slide, as soon as the same passes under it, and this movement also causes the gate or trip lever q^2 to be again closed or swung into the upper passage of the coin chute, preparatory to being tripped by the next coin.

In order to prevent fraudulent manipulation of the machine by the practice of tying a coin to a cord, allowing the captive coin to descend in the coin chute far enough to operate the machine and then withdrawing the coin by means of the cord, the extension f^2 of the lower passage of the chute is provided with a V-shaped notch or recess t extending forwardly from the lower edge of the extension. If it be attempted to defraud the machine by the use of a captive coin, the cord, as soon as the coin trips the releasing devices of the motive power, enters the apex of the V-shaped notch of the chute extension, and the coin being on the under side of the extension, acts as a stop which renders it impossible to withdraw the cord without cutting or tearing the cord and losing the coin. The coin when once deposited cannot therefore be recovered, and thus operates the machine but a single time.

u is a door or guard applied to the discharge slot of the magazine for preventing surreptitious withdrawal of the boxes. This door consists of a transverse plate arranged over a part or the whole of the slot and pivoted at its upper portion between ears u' se-

cured to opposite sides of the magazine, so as to be capable of swinging outward and upward to clear the delivery slot as shown in Fig. 8.

u^2 is a locking device for retaining the door of the magazine slot in its closed position except when a coin is deposited. This locking device consists of a horizontal quadrant mounted at its outer corner upon an upright pivot u^3 , and projecting with its inner portion or nose u^4 through a horizontal slot in the side wall of the magazine and into the path or adjacent way of the slide, when the latter is retracted, as shown in Fig. 9. The magazine door is connected with this quadrant by a rod or bar u^5 pivoted at its rear end to the quadrant or the front side of its pivot and at its other end to a flange or arm u^6 extending forwardly from the upper edge of the magazine door.

u^7 is a spring for holding the quadrant in the position in which it stands in the path of the slide. This spring is flat and secured at its rear end to the magazine and bears with its free forward end against the outer edge of the quadrant. When the magazine door is closed the pivot of the quadrant and the pivot at the rear pivot of the connecting rod u^5 are in line, or, in other words, the quadrant is on the dead center, so that it effectually resists a force tending to open the door by swinging it outward and upward. Upon being pushed forward, the front end of the slide strikes the adjacent portion of the quadrant and moves it out of the way thereby swinging it outward on its pivot sufficiently to move the rear pivot of the connecting rod out of the dead center. The magazine door is now released and upon being struck by the front end of the advancing box, swings outward and upward, until its flange strikes the front wall of the magazine, thereby clearing the slot and allowing the box to pass through the latter. By this outward movement of the quadrant the spring u^7 is strained and as soon as the slide is retracted sufficiently to clear the quadrant, the spring reacts and forces the quadrant inward to its former position. This movement causes the connecting rod to move backward and swing the door down into its closed position. The door is thus automatically closed immediately after a box is discharged by the machine.

v , Figs. 2 and 10, is a yielding guard arranged in the receiving end of the coin chute, for preventing a small coin which would ordinarily drop into the lower way of the chute, from being thrown into the chute so forcibly as to overcome the force of gravity and cause the coin to pass down the upper way of the chute and actuate the package delivery devices of the machine. This guard consists of a depending plate closing the upper end of the chute and pivoted at its upper edge upon a transverse rod secured to the side walls of the chute. This guard plate is preferably weighted, to increase its resistance, by pro-

viding it on its rear side with an overhanging rib v' . Upon inserting a coin in the chute, the guard yields to the weight or pressure of the coin and allows the latter to pass it, when the guard again returns to its former position.

The operation of our improved vending machine is as follows: Upon depositing in one of the slots a coin of the proper width to slide down the upper way of the coin chute, the coin striking the gate or lever q^2 in said passage trips the same and causes it to swing the stop clear of the projection plate of the delivery slide preparatory to allowing said plate to swing by gravity into its vertical position. After tripping said gate, the coin drops upon the pan of the trip lever G and depresses the latter thereby disengaging the retaining arm from the stop finger of the clock work, releasing the latter and causing it to rotate the display cylinder. The longitudinal rod of the cylinder immediately in rear of the lower projection p^3 of the delivery slide now engages against the rear side of said projection and pushes the slide forwardly and the upper projection p^2 of the latter, engaging against the rear end of the lowermost box or package in the magazine, discharging the box through the delivery slot p' of the magazine. By the time that the box is thus discharged, the releasing finger k which has been previously elevated is pressed into the next notch of the cam disk K, and thereby arrests the movement of the clock work and the display cylinder. The display cylinder is thus turned the distance of one of its pockets or panels, and the coin which has been deposited upon the cylinder from the pan g is displayed through the glass front of the machine at the same time that a box of candy or other package is discharged therefrom. The above mentioned longitudinal rod of the cylinder, after shifting the slide forward and before coming to a stand still, trips the return lever and thereby restores the trip gate of the chute to its former position and returns the stop Q to its former position preparatory to the retraction of the delivery slide. As soon as the said longitudinal bar of the cylinder clears the lower projection of the slide, the latter is released and the weight r , draws it back to its normal position ready to discharge the next box or package. By the backward movement of the slide, the pivoted projection plate is swung into the plane of the slide by contact with the bottom of the lowermost box of the pile as hereinbefore described and is held in this position by engaging under the stop Q. These various movements, namely the forward movement of the delivery slide, the replacement of the trip lever of the coin chute, the return of the stop Q to its former position, the retraction of the slide and the stopping of the clock work and the display cylinder, are all effected during the forward movement of the cylinder. Upon inserting a coin in the slot of the machine which is so narrow as to drop through the upper way of the chute and into its lower

way, the coin does not operate the trip lever of the chute, but falls directly upon the pan of the trip lever G, thus only releasing the clock work and setting the display cylinder in motion, and leaving the package delivery mechanism undisturbed. Thus when a coin of smaller denomination than the price of the boxes or packages of goods, is deposited in the machine the latter supplies no goods, but simply turns the cylinder, and when the cylinder has turned the distance of one of its pockets it is arrested as hereinbefore described. As the coins deposited in the machine, are held in the pockets of the display cylinder and exposed through the window of the case, unscrupulous persons are deterred from placing spurious coins into the machine, from fear of detection.

In the drawings, three magazines for different or like articles are shown, each provided with an independent delivery mechanism, but if desired a greater or less number may be used. The display cylinder is subdivided into as many peripheral rows of coin-carrying pockets, as there are coin chutes, a series of such pockets being arranged under each coin chute. The cylinder is thus subdivided by raised circumferential ribs or partitions w , which may be formed by bending the ends of the panels b^3 outward as shown at w' , in Fig. 1, or consist of separate bars or ribs secured between the longitudinal rods of the display cylinder.

A separate coin receiving drawer, is preferably arranged in the bottom of the case under each series of carrying pockets of the cylinder, so that the receipts of each section of the machine may be kept separate, which is desirable in case the sections are rented to different dealers or merchants. If preferred, however, a single drawer may be used, extending from end to end of the display cylinder.

In the drawings are shown rectangular magazines and shallow rectangular boxes for the goods to be supplied by the machine, but the shape of the packages may of course be varied to suit the character of the goods for the sale of which the machine is to be used, and the magazines for containing the packages are made of the proper cross section to receive the packages.

We claim as our invention—

1. In a vending machine, the combination with the case of the machine having a delivery slot, a magazine and a delivery slide for pushing the goods through said slot, of a motor for operating said slide having a stop-device, a coin chute, a vertically movable trip lever arranged opposite the mouth of the coin chute, a horizontal rock shaft having a pair of rock arms, a rod connecting said trip lever with one of said rock arms, a retaining arm adapted to engage with the stop device of the motor, and a rod connecting said retaining arm with the other arm of said rock shaft, substantially as set forth.

2. In a vending machine, the combination with the case of the machine having a delivery slot, a magazine and a delivery slide for pushing the goods through said slot, of a motor for operating said slide having a stop-device, a coin chute, a vertically movable trip lever arranged opposite the mouth of the coin chute, a horizontal rock shaft having a pair of rock arms, a rod connecting said trip lever with one of said rock arms, a retaining arm adapted to engage with the stop device of the motor, a rod connecting said retaining arm with the other arm of said rock shaft, and an overhanging arm secured to said rock shaft and carrying an adjustable weight, substantially as set forth.

3. The combination with the case and the coin chute, of a magazine, a delivery slide for pushing the articles out of said magazine, a trip lever arranged opposite the mouth of the coin chute, a motor having a stop device, a rotary cylinder journaled in the case and operating said delivery slide, a notched disk secured to the cylinder, a retaining arm engaging with said stop device and operated from said trip lever, and a releasing arm connected with said retaining arm and engaging with the notched disk, substantially as set forth.

4. The combination with the case and the coin chute, of a magazine, a delivery slide for pushing the articles out of said magazine, a trip lever arranged opposite the mouth of the coin chute, a motor having a stop device, a rotary cylinder journaled in the case and operating said delivery slide, a notched disk secured to the cylinder, a retaining arm engaging with said stop device and operated from said trip lever, a releasing arm connected with said retaining arm and engaging with the notched disk, and a spring for holding said retaining arm in engagement with said stop device, substantially as set forth.

5. In a vending machine, the combination with the case, the coin chute and the trip device of the power mechanism arranged opposite the delivery end of the chute, of a coin carrying cylinder having its upper portion arranged underneath said trip device and provided on its outer side with raised longitudinal rods, and depressed plates or panels arranged between said rods, the latter, in connection with the depressed plates forming shallow pockets for the reception of the coins, substantially as set forth.

6. The combination with the case, and the coin chute, of a trip lever, for releasing the power mechanism of the machine, having a coin receptacle provided in its bottom with a slot, and the rotary cylinder arranged underneath said trip lever and having pins or projections which pass through the slot of its coin receptacle and remove the coin therefrom, substantially as set forth.

7. In a vending machine, the combination with the case, of a magazine for containing the articles to be supplied, a delivery slide applied to the lower portion of said magazine,

and provided on its underside with a projection for shifting it, and on its upper side with a projection adapted to engage against the lowermost article in the magazine, a rotary cylinder arranged underneath said slide and having peripheral rods or projections adapted to engage successively against the lower projection of the slide for shifting the latter, and a motor for turning said cylinder, substantially as set forth.

8. In a vending machine, the combination with the case, of a magazine for containing the articles to be supplied by the machine, a delivery slide applied to the lower portion of said magazine, a plate pivoted to the slide and adapted to swing at an angle thereto, so as to present projections on the upper and lower sides of the slide, a shoulder for limiting the swing of said plate and a traveling carrier adapted to engage against the lower projection of the slide for shifting the same, substantially as set forth.

9. In a vending machine, the combination with the case, of a magazine for containing the articles to be supplied by the machine, a delivery slide applied to the lower portion of said magazine, a plate pivoted to the slide and adapted to swing at an angle thereto, so as to present projections on the upper and lower sides of the slide, a rotary cylinder having rods or projections adapted to engage with the lower projection of the slide, and a motor for actuating the cylinder, operated by the deposit of a coin, substantially as set forth.

10. In a vending machine, the combination with the case and a magazine for the articles to be supplied by the machine, of a plate pivoted to the slide and capable of swinging into the plane of the slide or at an angle thereto, a movable stop for retaining said plate in the plane of the slide, and means for shifting said stop to release said pivoted plate, substantially as set forth.

11. In a vending machine, the combination with the case, the coin chute, and a magazine for the articles to be supplied by the machine, of a trip device projecting into the chute, a delivery slide applied to the lower portion of the magazine, and having a pivoted projection plate capable of swinging into the plane of the slide, and a laterally swinging stop adapted to hold said projection plate in the plane of the slide, and operated by the trip device in the chute, substantially as set forth.

12. In a vending machine, the combination with the case, the coin chute, and a magazine for the articles to be supplied by the machine, of a trip lever projecting into the chute, a delivery slide applied to the lower portion of the magazine and having a pivoted projection plate capable of swinging into the plane of the slide, a laterally swinging stop adapted to hold said plate in the plane of the slide, and mounted on a rock shaft, and a rod connecting said trip lever in the coin chute with an arm on said rock shaft, substantially as set forth.

13. In a vending machine, the combination with the case, the coin chute, and a magazine for the articles to be supplied by the machine, of a trip device projecting into the chute, a delivery slide applied to the lower portion of the magazine and having a pivoted projection plate capable of swinging into the plane of the slide, a movable stop for holding said projection plate in the plane of the slide and operated by said trip device, a return arm or lever for restoring the trip device to its normal position and a traveling carrier or cylinder operating against said return lever, substantially as set forth.

14. The combination with the case and a coin chute having a passage for receiving a legitimate coin and a separate passage for inferior coins, of a trip device receiving the coins from both of said passages, a motor, and a releasing device for the same operated from said trip device, a magazine, a delivery slide, having a movable projection, a display cylinder operated by said motor and adapted to engage against the projection, a stop device for holding said projection clear of the cylinder, and a trip device arranged in the legitimate coin passage of said chute and actuating said stop device, substantially as set forth.

15. In a vending machine, the combination with the case having a delivery slot and a magazine provided in its lower portion with a slot coinciding with the slot of the case, of a door for closing the delivery slot pivoted to the outer side of the case, capable of swinging outward and upward to clear said slot and

provided in front of its pivot with an arm, a delivery slide arranged in the magazine, a pivoted locking device projecting into the path of said slide, and a rod connected at its rear end with said locking device and at its front end with the arm of said door, substantially as set forth.

16. In a vending machine, the combination with a magazine provided in its lower portion with a discharge aperture, of a door applied to said aperture and capable of swinging upwardly to clear the aperture, a delivery slide applied to the magazine, a pivoted quadrant projecting normally into the path of said slide, and a connection extending from the quadrant to said swinging door, substantially as set forth.

17. In a vending machine, the combination with a magazine, provided in its lower portion with a discharge aperture, of an upwardly swinging door applied to said aperture, a delivery slide applied to the magazine, a pivoted quadrant projecting into the path of the delivery slide, a connecting rod attached at its front end to the swinging door and having its rear end attached to the quadrant in front of the pivot of the latter, and a spring for returning the quadrant to its normal position, substantially as set forth.

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Witnesses:

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