

919,390.

E. X. SOMERS.
VENDING MACHINE.
APPLICATION FILED JULY 6, 1908.

Patented Apr. 27, 1909.
4 SHEETS—SHEET 1.

Fig. 1.

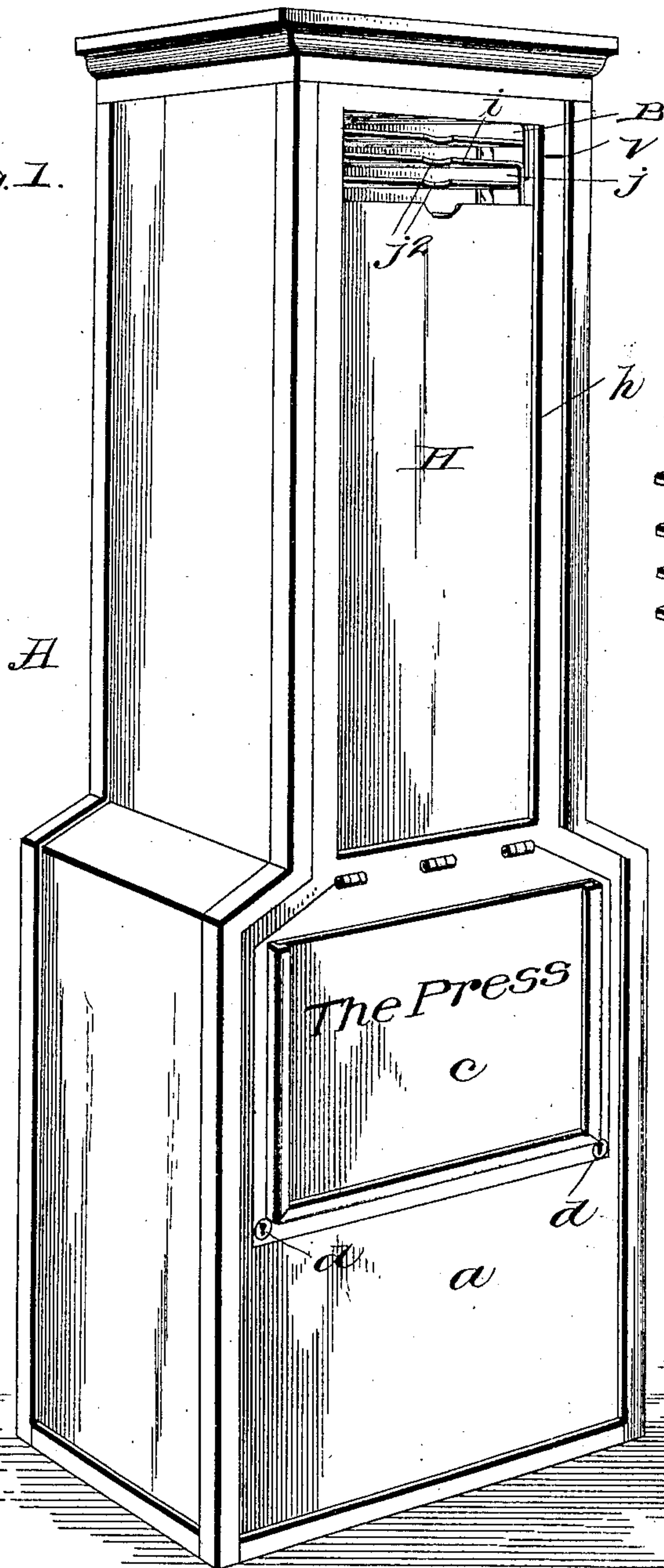


Fig. 16.

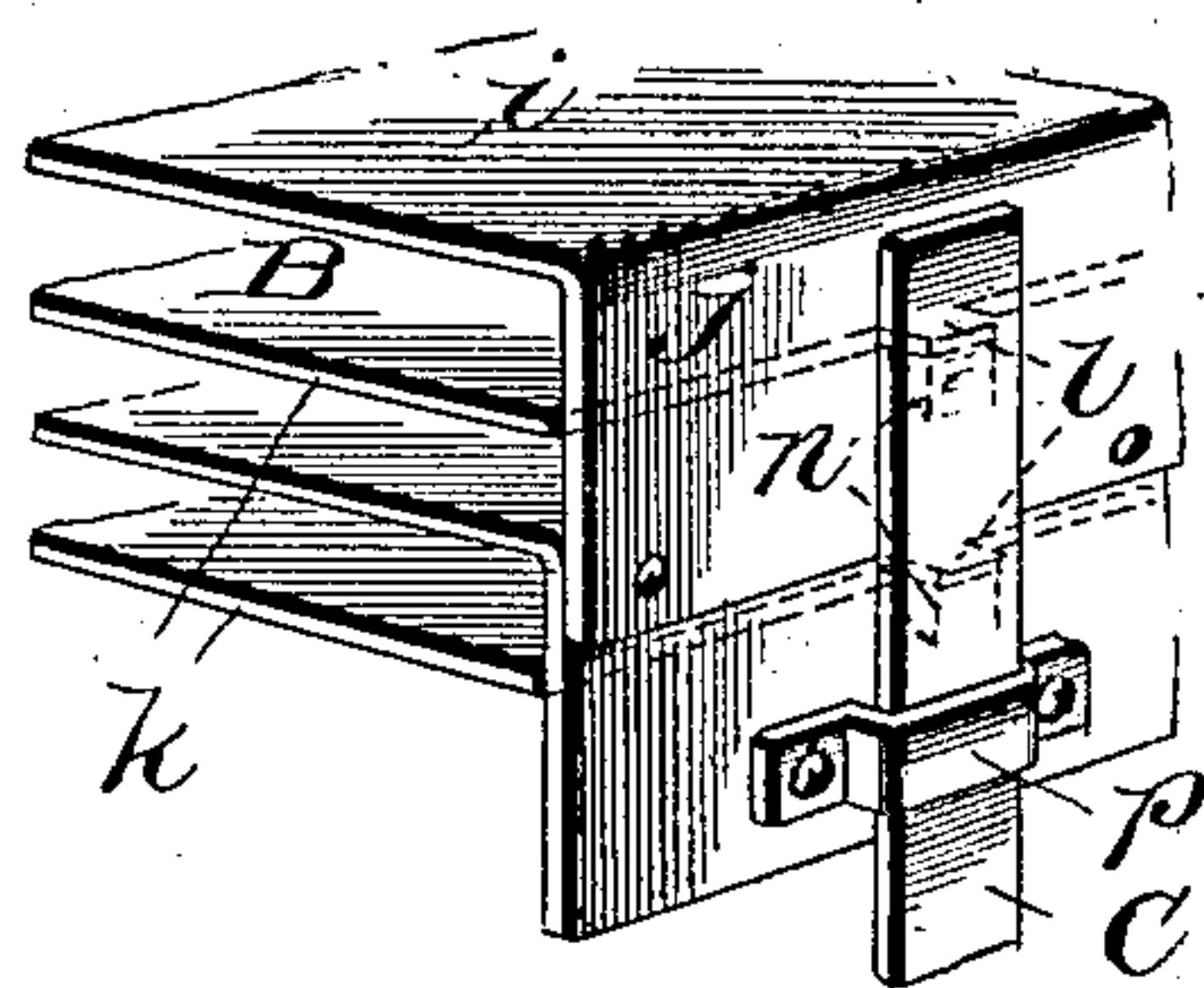
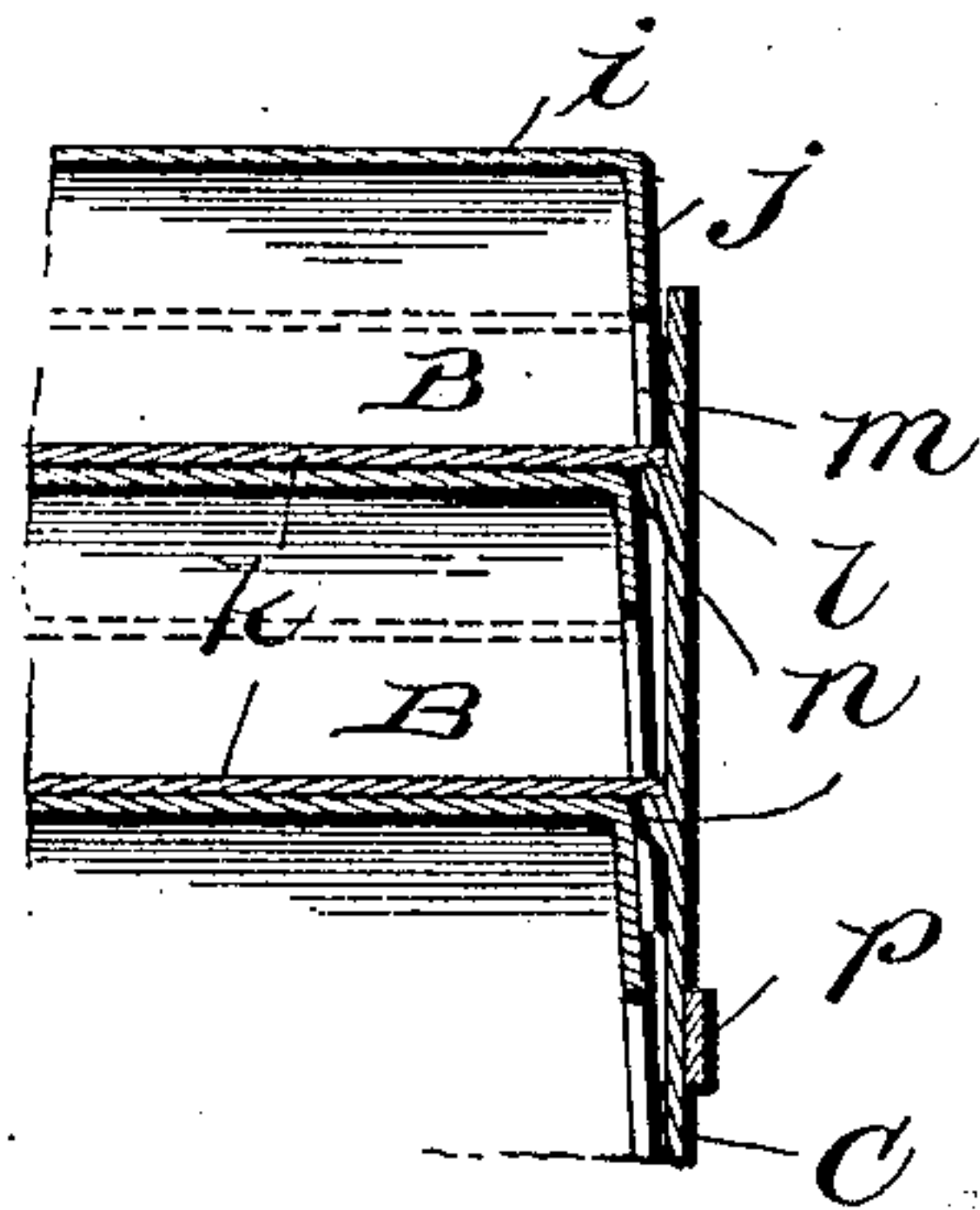
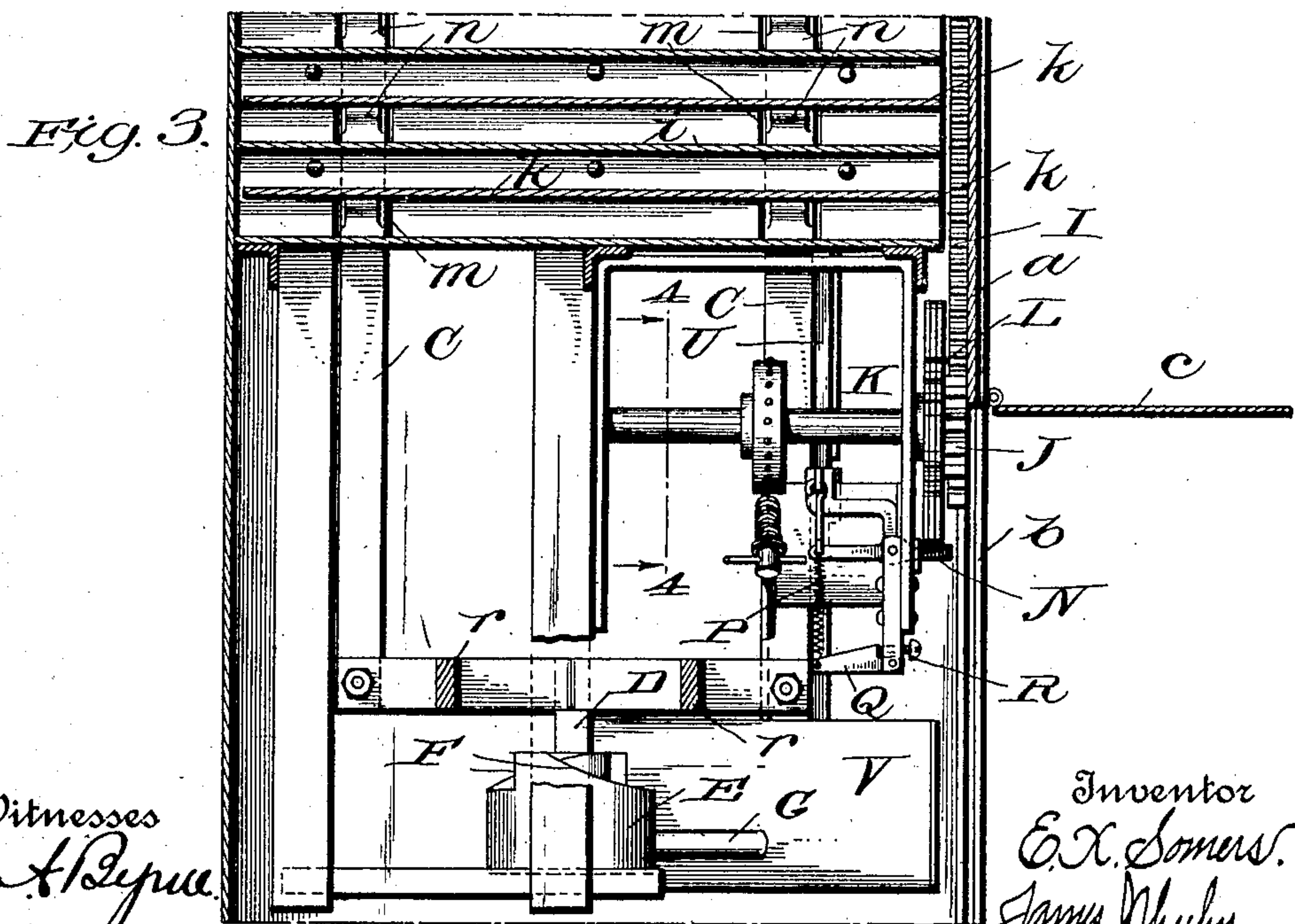
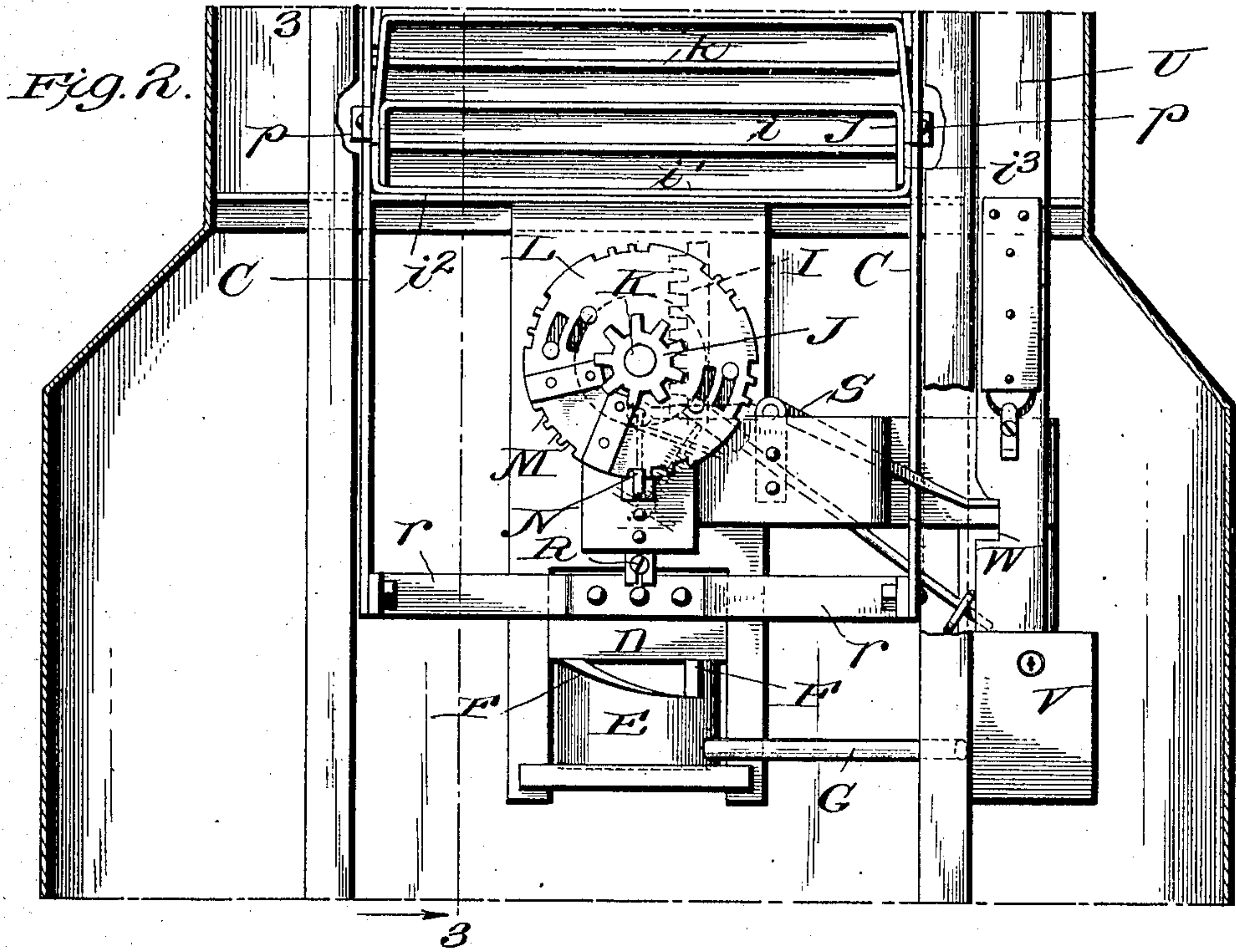


Fig. 17.



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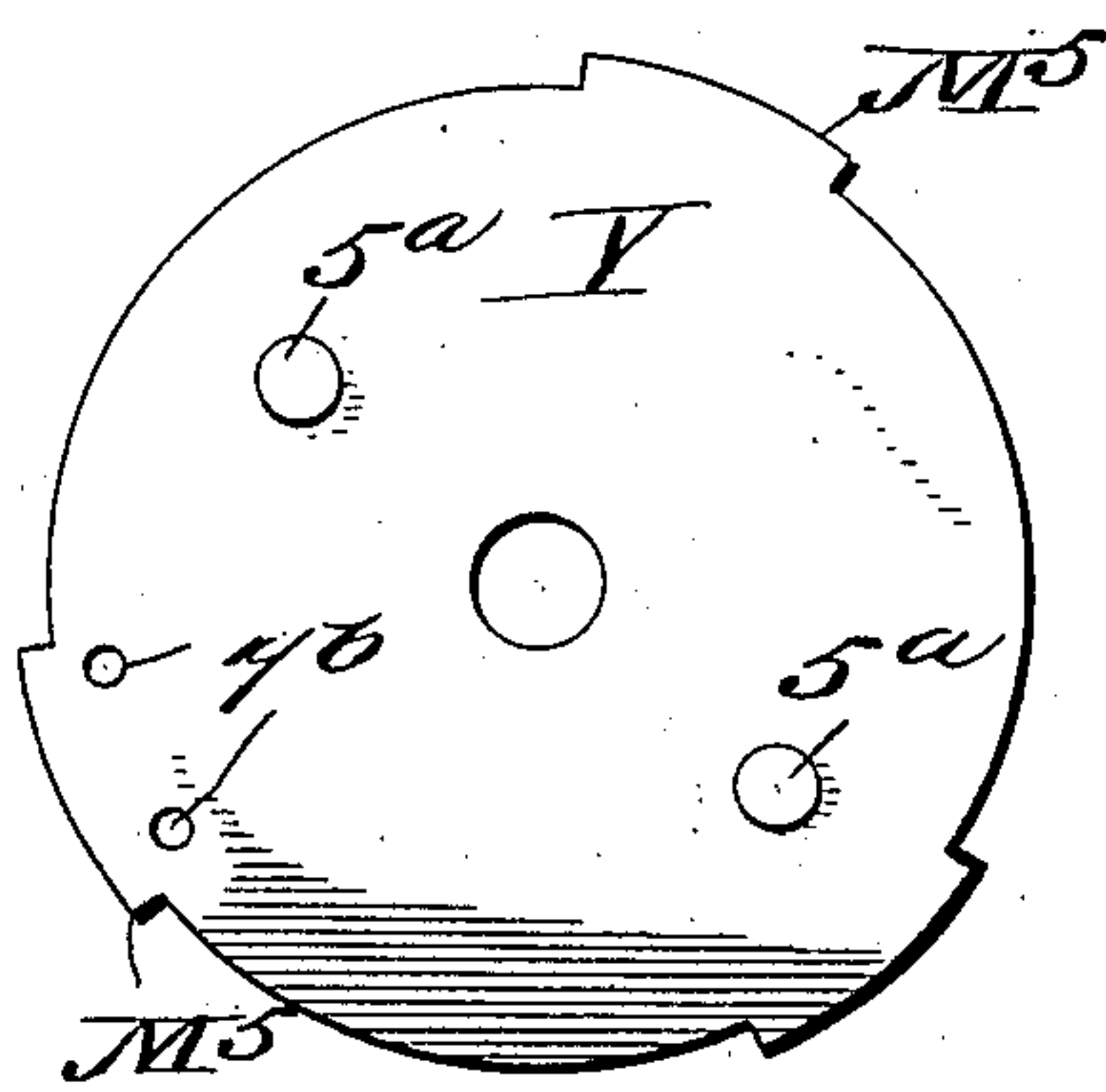
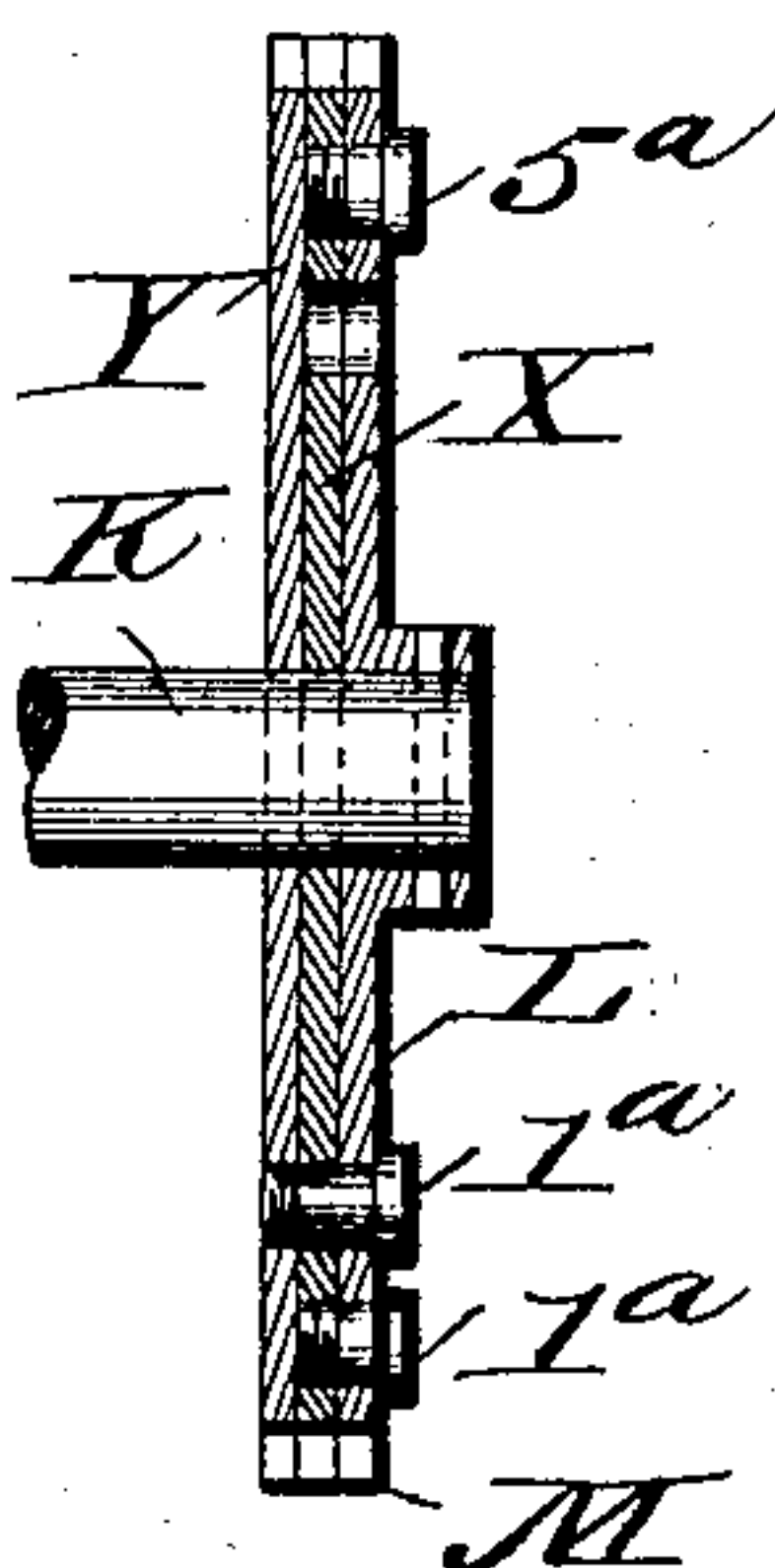
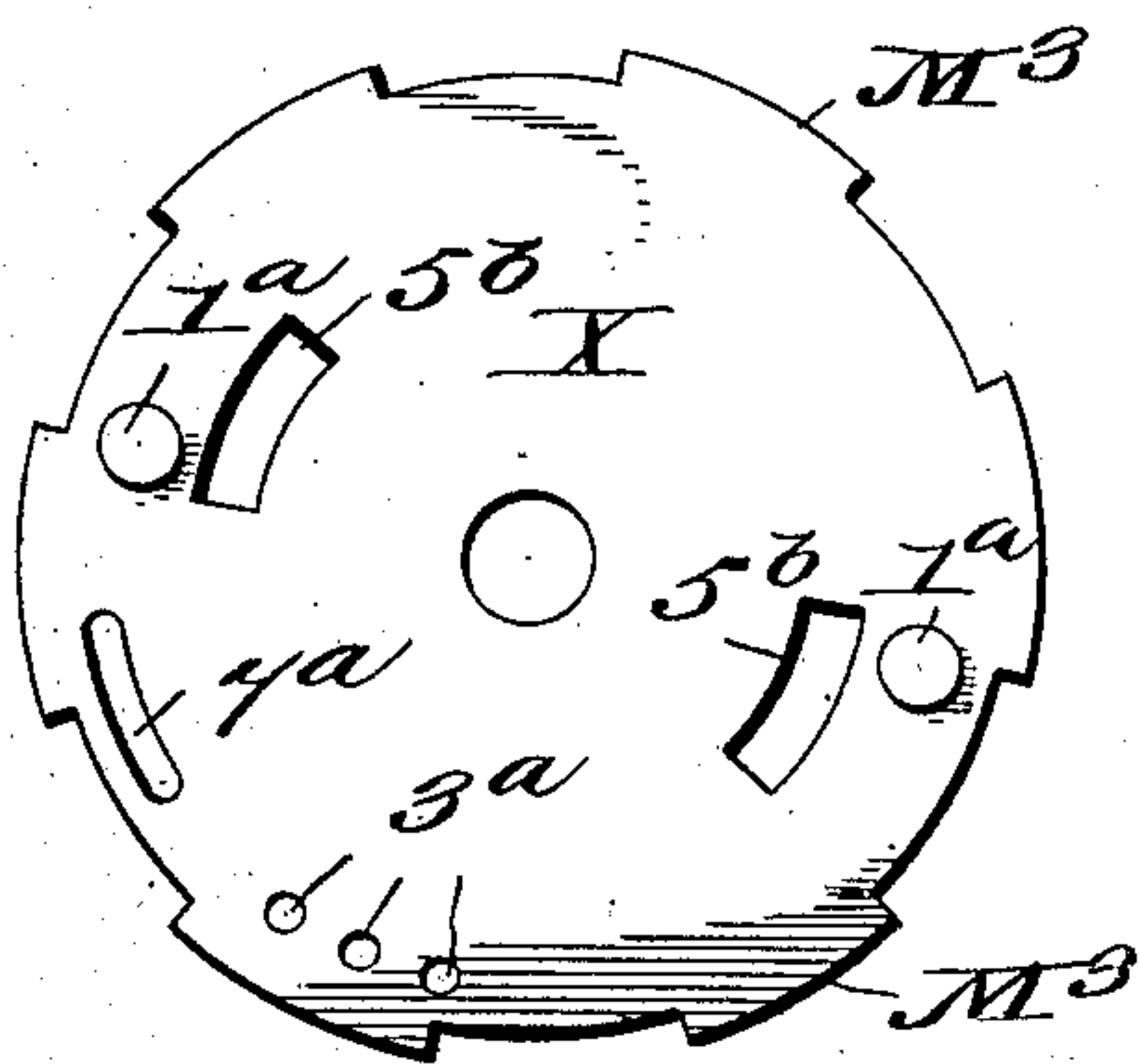
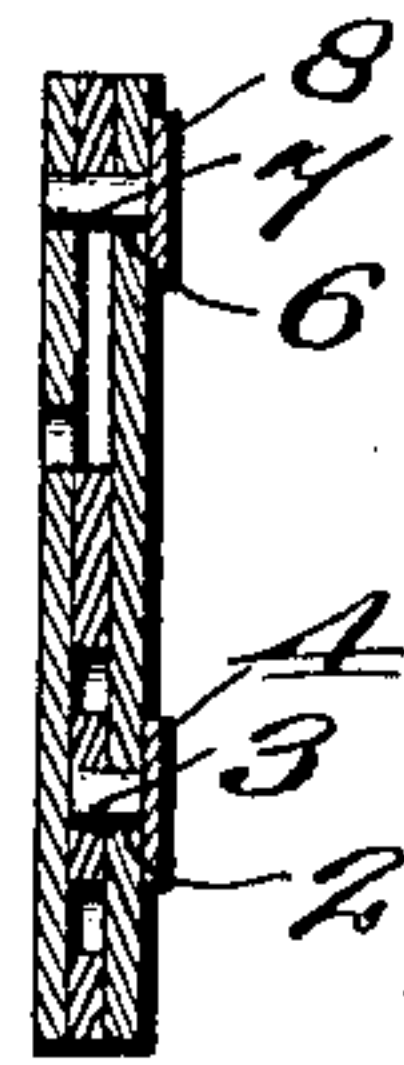
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4 SHEETS—SHEET 3.



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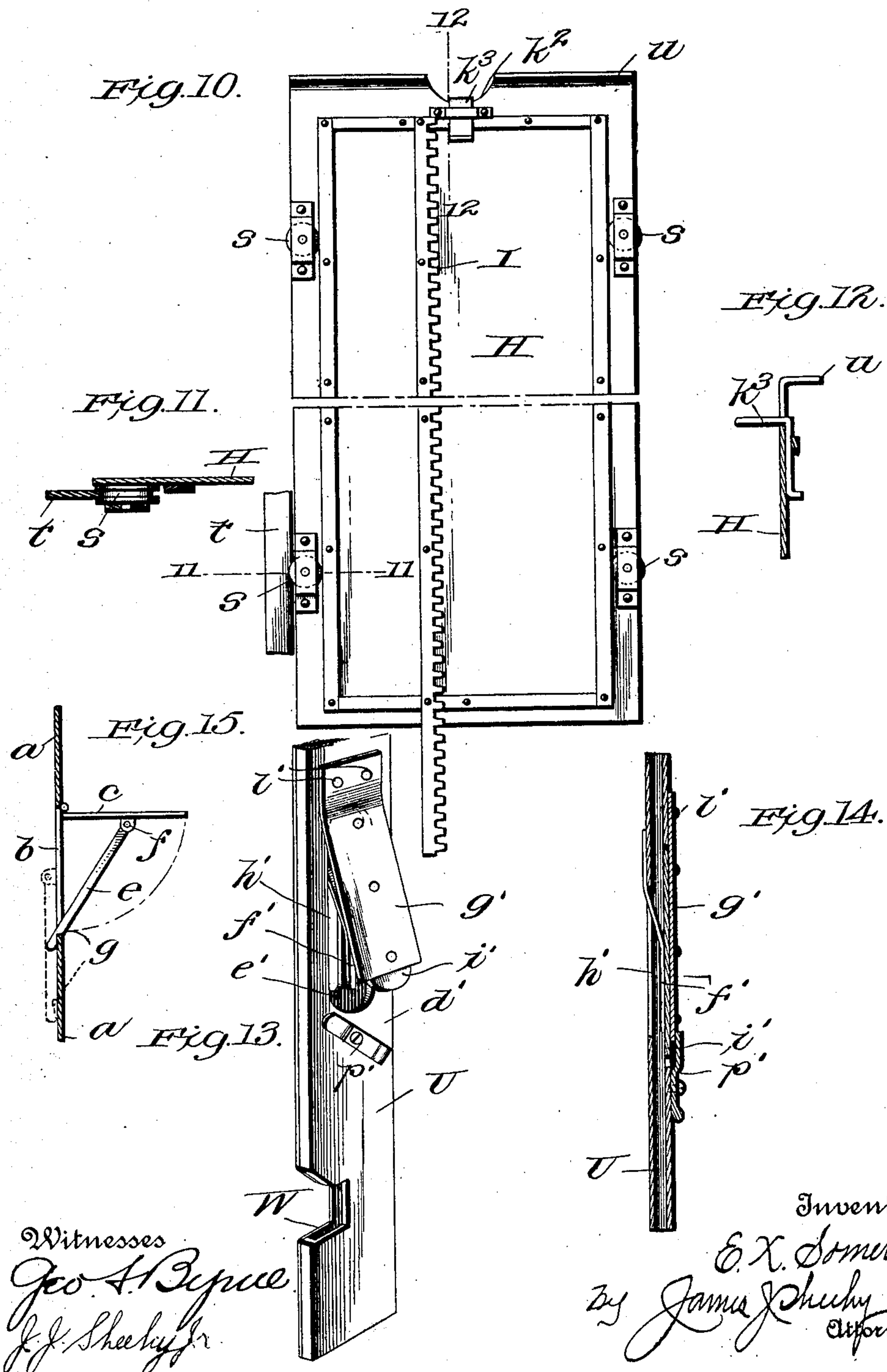
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4 SHEETS—SHEET 4.



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UNITED STATES PATENT OFFICE.

EVERETT X. SOMERS, OF ST. JOHNSBURY, VERMONT.

VENDING-MACHINE.

No. 919,390.

Specification of Letters Patent.

Patented April 27, 1909.

Application filed July 6, 1908. Serial No. 442,119.

To all whom it may concern:

Be it known that I, EVERETT X. SOMERS, citizen of the United States, residing at St. Johnsbury, in the county of Caledonia and State of Vermont, have invented new and useful Improvements in Vending-Machines, of which the following is a specification.

My present invention relates to apparatus for vending articles of various kinds.

One of the objects of the invention is the provision in such an apparatus, of means whereby the compartments for holding the articles to be vended may be increased or diminished in size, and means through which the length of step by step movements of a check or coin-controlled guard may be made commensurate with the size of said compartments, at the will of a person in authority.

Another object of the invention is the provision in an apparatus of the kind stated, of a gravitating guard, and means for retarding the descent of the guard and through regulation of which the guard may be made to descend fast or slow at the pleasure of the party in charge of the apparatus; the said means having the capacity of accommodating itself to changes in temperature, and its efficiency not being liable to be impaired by extreme cold.

Another object is the provision in an apparatus such as set forth, of simple, durable and reliable check or coin-controlled mechanism.

Another object is the provision in an apparatus such as set forth, of means adapted in one arrangement to enable a small check or checks or coins to control the mechanism, and in another arrangement to enable a larger check or coin only, to control the mechanism.

Still another object is the provision of check or coin-controlled mechanism capable of being expeditiously and easily adjusted by an authorized person so as to change the apparatus from a machine adapted to be controlled by one check or coin to a machine adapted to be controlled by a plurality of checks, and vice versa.

The present and best practical embodiment of my invention of which I am cognizant is designed for vending newspapers, magazines and analogous articles, and its novelty, utility and practical advantages will be fully understood from the following description and claims when the same are

read in connection with the drawings, accompanying and forming part of this specification, in which:

Figure 1 is a perspective view of the vending apparatus constituting the best practical embodiment of my invention of which I am cognizant. Fig. 2 is an enlarged detail cross-section taken in a plane immediately back of the front wall of the casing, looking toward the back of the apparatus and illustrating certain of the working parts thereof. Fig. 3 is a detail section taken in the plane indicated by the line 3—3 of Fig. 2, looking in the direction of the arrow. Fig. 4 is a detail section taken in the plane indicated by the line 4—4 of Fig. 3, looking in the direction of the arrows. Fig. 5 is an enlarged front elevation illustrative of the plurality of disks hereinafter referred to. Fig. 6 is a transverse section taken on the line 6—6 of Fig. 5. Fig. 7 is a detail transverse section taken on the curved line 7—7 of Fig. 5. Fig. 8 is an elevation of the intermediate disk. Fig. 9 is an elevation of the back disk. Fig. 10 is a back view of the guard of the apparatus. Figs. 11 and 12 are sections on the lines 11—11 and 12—12, respectively, of Fig. 10. Figs. 13 and 14 are detail views of the check chute and its appurtenances, and Fig. 15 is a reduced detail of the door and its appurtenances. Figs. 16 and 17 are enlarged detail views illustrating the superposed compartments and one of the bars for coöperation therewith.

Similar letters and numerals designate corresponding parts in all of the views of the drawings, referring to which:

A is the casing of the apparatus. The said casing may be of any shape consonant with the purpose of my invention, and is provided in the front wall *a* of its lower portion with an opening *b*, above which is hinged a door *c*, having locks *d*, and also having props *e*, hinged to the door at *f* and notched at *g*. When the notches of the said props *e* are engaged with the wall *a* below the opening *b*, the door *c* will be maintained in a horizontal position and hence adapted to support a pile of newspapers precedent to the placing of the same in the compartments, presently described, and when the door *c* is closed, the said props *e* are adapted to hang back of the door and within the casing. It should also be noted at this point that when the door *c* is

unlocked and opened, access may be gained through the opening *b* to certain parts that are adapted to be adjusted as hereinafter described.

5 In the front wall of the upper portion of the casing A is formed an opening *h*, and in said upper portion a number of newspaper-receiving compartments B are arranged, one above the other; the said compartments being preferably formed by spaced horizontal
10 walls *i* each of which is fixed in the upper portion of the casing A and is provided with depending side flanges *j*, arranged at the outer side of and riveted to the similar side flanges of the next wall below. A lowermost
15 horizontal wall *i'* is arranged on a partition wall *i''*, fixed in the casing, and has upturned flanges *i'''* riveted to the depending flanges *j* of the wall *i* above. Intermediate the fixed
20 horizontal compartment walls are vertically-adjustable, horizontal walls *k* which are adapted in their raised position to divide the compartments B each into two small compartments. The said walls *k* are provided
25 with lateral projections *l* which extend through vertical slots *m* in the side flanges *j* of the fixed horizontal walls *i* and rest upon lateral lugs *n* on four, vertically-movable upright bars C which are guided in fixed loops
30 *p* arranged at the outer sides of the vertical series of compartments B. The lower ends of the said upright bars C are fixedly connected through horizontal bars *r* with a central shoe D, and the said shoe is arranged
35 above and in contact with a rotary body E supported by fixed frame-work and having two (more or less) cams F, opposed to the shoe D, and also having a radially-disposed handle G.

40 By virtue of the construction set forth in the foregoing it will be manifest that when the rotary, cam-bearing body E is turned in one direction, the shoe D, the rods C and the vertically-adjustable, horizontal walls *k* will
45 be raised until the lateral projections *l* on the latter bring up against the upper ends of the slots *m* in the side flanges *j* of the fixed walls *i*, and that at such time the walls *k* will be positioned about midway between the fixed
50 walls *i*. The vertically-adjusted parts mentioned will be maintained in their raised positions by the rotary body E, and hence the walls *k* will serve in combination with the fixed horizontal walls to form compartments
55 of a size to receive week-day issues of newspapers. Sunday issues of modern newspapers are ordinarily of much greater bulk than the week day issues, and therefore, precedent to charging the apparatus with Sunday issues, a person in authority turns the rotary
60 body E in the direction opposite to that first mentioned, whereupon the shoe D, the bars C and the walls *k* will gravitate until the latter rest on the fixed horizontal walls below them, when said walls *k* will serve in combi-

nation with the fixed horizontal walls *i* above them to form the comparatively large compartments.

The front ends of the fixed and the vertically adjustable horizontal walls are preferably notched, as indicated by *j'*, to enable successive purchasers to conveniently take papers from the compartments B.

The front ends of the vertical series of compartments B are open, and after the said compartments are charged through the opening *h* in the casing with newspapers, a vertically-movable guard H is raised until it rests in front of all of the compartments B. The
75 said guard H is preferably in the form of a stiff sheet-metal plate which is provided at its side edges with circumferentially-grooved wheels *s*, arranged back of the front wall of the casing and engaged with fixed upright bars *t*, whereby, the guard is guided in its vertical
80 movements and such movements are attended by but little friction and at the same time the guard is held against horizontal displacement in any direction. The upper end of the guard H is notched at *h'* and
85 provided with a finger piece *h''* which preferably is capable of limited vertical movement with respect to the guard. The upper end of guard H is also provided with a rearwardly directed flange *u* which is designed subsequent to each step by step downward movement of the guard to assume a position in the
90 same horizontal plane as and close to the forward edge of the bottom wall of the last uncovered compartments B, and in that way
95 prevent an unscrupulous person from introducing an extracting device into the next lower compartment with a view of surreptitiously removing the newspaper therein contained.

Connected with the back of and fixed with respect to the guard H, is a vertical rack bar I which extends from a point slightly below the upper end of the guard to a point below the lower end thereof. The said rack bar I
105 is for the engagement of a pinion J which is fixed on a fore and aft disposed shaft K, journaled in the frame-work fixed within the casing A. In addition to said pinion J, the shaft K has fixed upon it a disk L, having in its periphery notches M, arranged in six
110 equi-distant groups of three notches each. These notches M are for the engagement of a vertically-swinging detent N which stands at a right angle to the disk L, is fulcrumed at an intermediate point of its length in the
120 fixed frame-work, and is normally held in and returned to a position in one of the notches M by a tractile spring P interposed between its back arm and an arm Q pivoted to the
125 frame and adapted to be adjusted vertically and adjustably fixed by a screw R with a view of regulating the tension of the spring P.

S is a vertically swinging lever fulcrumed at an intermediate point of its length in the

frame and standing at a right angle to the detent N. The inner arm of said lever S is connected through a link T with the back arm of the detent N, and consequently it will be manifest that on depression of the outer arm of lever S, the back arm of the detent N will be raised and the forward arm thereof will be lowered—*i. e.*, disengaged from the particular notch M in which it is seated, to release the disk L, and permit said disk L and the pinion J to rotate under the gravitation of the guard H, the rack bar I of which is intermeshed with the pinion J, as before stated.

A coin slot *v* is provided in the upper portion of the front wall of casing A, and within the casing is fixed a coin-chute U which communicates at its upper end with said slot and is arranged to discharge coins or checks into a receptacle V. At a point slightly above the receptacle V, the chute U is provided with a notch W into which extends the outer end of the lever S. Thus it will be manifest that when a coin or check, one cent for instance, is deposited in the slot *v* and falls down the chute U, it will slightly depress the outer end of lever S, and then will pass said lever and drop into the receptacle V. Incidental to said depression of the outer end of lever S, the detent N will be disengaged from the first notch M at the left of a group of notches in the disk L, whereupon the guard H will gravitate a slight distance, the disk L will be turned through a small part of a revolution,—the detent N will seat in the second notch M of the mentioned group, and the lever S will resume its normal position. When a second penny is deposited in the slot *v*, the operation described will be repeated and the detent N will seat in the third notch of the mentioned group, and when a third penny is deposited in the slot *v*, the disk L will be permitted to turn and the guard H to gravitate until the detent N seats in the first notch M of the next group toward the right. The last mentioned gravitation of the guard H will be sufficient to uncover one of the small-size compartments—*i. e.*, the compartments formed between the walls *k* and the walls *i* when said walls *k* are raised as before described, and hence it will be manifest that the arrangement described contemplates entirely uncovering one small compartment so as to permit ready removal of the paper therein when three pennies are deposited, one after another. In this connection attention is directed to the fact that during the two slight initial gravitations of the guard H, the flange *u* on said guard will prevent the removal of the paper from the compartment that is being uncovered, and that the paper cannot be removed until the said flange *u* assumes a position flush with or in the same horizontal plane as the bottom wall of the compartment. I would also have

it understood that the groups of notches in the disk L may respectively comprise one, two, three or more notches, without involving departure from the scope of my invention as defined in the claims appended.

In addition to the notches M, the disk L is provided with a slot 1 which describes a part of a circle, a transverse aperture 2, a transverse pin 3 disposed and movable in said aperture 2, a spring-strip 4 connected adjacent to one end to the pin 3 and fixedly connected at its opposite end to the face of the disk, a slot 5 arranged between the slot 1 and the center of the disk, a transverse aperture 6, a transverse pin 7 disposed and movable in the aperture 6, and a spring-strip 8 connected at one end to the pin 7 and fixed at its opposite end to the face of the disk.

Loosely surrounding the shaft K and arranged back of and against the disk L is a regulating disk X. This disk X is provided with a slot 7^a which describes a part of a circle and loosely receives the pin 7 which extends rearwardly beyond the disk X for a purpose presently set forth. Said disk X is also provided with a finger-piece 1^a disposed and movable in the slot 1 of disk L, with a group of three apertures 3^a, designed to receive the pin 3, and with six radial projections M³, complementary to the six groups of apertures M in disk L. When a person in authority retracts the pin 3 of disk L, against the action of the spring strip 4, so as to withdraw said pin 3 from the particular aperture 3^a of disk X in which said pin is seated, and then grasps the finger-piece 1^a and turns the disk X with respect to the disk L, it will be observed that said person is enabled because of the radial projections M³ on disk X to close, through the medium of said projections M³, either one or two notches M of each group in the disk L, and then adjustably fix the disk X with respect to the disk L by permitting the pin 3 to seat in the particular aperture 3^a that is presented to it. Thus the person in authority is enabled to adapt the apparatus to be operated to uncover a newspaper by three pennies deposited in succession or by two pennies deposited in succession or by a single penny deposited; also, such person is enabled to change the apparatus from a "two-penny" apparatus to either a "one penny" apparatus or a "three penny" apparatus, and from a "one penny" apparatus to either a "two-penny" apparatus or a "three penny" apparatus.

Loosely surrounding the shaft K and arranged back of and against the disk X is a regulating disk Y. This disk Y is provided with two transverse apertures 7^b designed in different positions of the disk to receive the pin 7 so as to adjustably fix the said disk with respect to the disk L; and it is also provided with three equidistant, radial projections M⁵, and with a finger-piece 5^a which extends

loosely through a circular slot 5^b in disk X and through the slot 5 in the disk L. Thus it will be seen that a person in authority by disengaging the pin 7 from the disk Y and turning the said disk Y through the medium of the finger-piece 5^a, is enabled because of the three radial projections M⁵ and through the medium of said projections to "cut out" or close all of the notches of the alternate groups in the disk L. This will be better understood when it is borne in mind that when the disk X is set to cover or close all but one notch M of each group in the disk L, and the disk Y is set to cover the alternate of the uncovered notches in disk L, there will be but three equidistant notches afforded in disk L for the engagement of the detent N. Thus following each disengagement of the detent N from a notch of the disk L the said disk will be enabled to turn through a considerable part of a revolution, and the guard H will be free to gravitate a considerable distance, sufficient in fact to fully uncover one of the compartments B when said compartments are made large, as before described, to receive the large, Sunday issue of a newspaper. In this connection I would have it understood that when the disk L is provided with but six equidistant notches M, the disk Y may be used as stated in combination with the disk L alone, and the disk X and the parts appurtenant thereto may be omitted; also, that by adjusting and adjustably fixing the disk Y with respect to the disk L, the guard H may be made to uncover either six or three compartments B incidental to each revolution of the disk L. The six compartments referred to will of course be the small compartments formed by raising the walls *k*, and the three compartments will be three large compartments formed by lowering the said walls *k*.

The week day editions of newspapers sell for a small price, say one cent, and the comparatively large Sunday editions sell for a larger price, say five cents. To meet this condition and adapt my novel apparatus to be controlled through either a small coin such as a cent or a larger coin such as a five cent piece or "nickel" in the discretion of the party in authority, I construct the lower portion of the chute U as shown in Figs. 2, 13 and 14—i. e., I provide said chute in one of its side walls *d'* with an opening *e'* wider than a cent but not so wide as a five-cent piece, and I also provide a spring *f'*, and a door *g'* hinged to the chute and arranged to control the opening *e'*. The spring *f'* is connected to the outer side of the other side wall of the chute and extends through a slot *h'* in said side wall and normally rests in the opening *e'* in the first mentioned side wall. The door *g'* is provided on its inner side with a projection *i'* of a shape and size to fully occupy the opening *e'* when the door is closed; and the

said door is preferably a spring plate, fastened at *l'* to chute U and adapted, when released, to open of itself. When the door is closed it may be fastened in such position through a turn-button *p'*, after the manner shown. With the door *g'* closed as shown it will be seen that my apparatus may be controlled through a small coin—i. e., a cent, since the cent will pass down the chute and between the spring *f'* and the protuberance *i'* on the door *g'*. When, however, the door *g'* is open, the apparatus can be only controlled by a larger coin than a cent, a five-cent piece for instance, this because if a cent is deposited in the chute U, it will be guided by the spring *f'* through the opening *e'* and laterally out of the chute U and hence will in no wise affect the mechanism that holds the disk L against rotation, and the guard H against downward movement. It will be noticed, however, that when the door *g'* is open and a nickel is dropped into the chute U, said nickel being wider than the opening *e'* will pass down the chute U and between the spring *f'* and the opposed side of the chute and will act against the lever S in the manner and for the purpose before described.

It will be readily gathered from the foregoing that through the medium of the door *g'* my novel apparatus may be quickly and easily arranged to be controlled by either a small coin or a large coin as occasion demands.

It will be understood from the foregoing that when the chute U is adapted to enable small coins such as pennies to control the apparatus, the disk L and the elements coöperating therewith will be correspondingly adapted, and when the chute U is adapted to prevent control by pennies and assure control by "nickels", the disk L and coöperating elements will be accordingly adapted. It will also be understood that the compartments B will be made small when the apparatus is to be controlled by pennies, and large when the apparatus is to be controlled by "nickels."

In order to check or retard the gravitation of the guard H and enable the party in authority to regulate such gravitation so as to make the same fast or slow, I provide the means best shown in Fig. 4. The said means comprises a drum 10 fixed on the shaft K back of the disk Y and the lever S, a rod 11 having an enlargement 12 at its inner end, the upper side of which enlargement is in line with the center of movement of the drum 10, a cross-pin 13 or other stop arranged in the fixed frame-work above the outer and lower end of the rod 11 and adapted to limit the upward movement of said end when the end moves vertically to a slight extent between the pin 13 and the top of the coin or check receptacle, a resilient band 14, preferably of steel, connected at

one end to the inner end of the rod enlargement 12 and extending around the drum 10, sections 16 of leather or other suitable friction-creating means carried by said band 14 and opposed to the perimeter of the drum 10, a screw 17 extending loosely through the free end of the band 14 and bearing in the rod enlargement 12, and a coiled compensating spring 18 surrounding the said screw and interposed between the free end portion of the band 14 and the head or handle portion of the screw. By turning the screw 17 in one direction, the pressure of the band 14 against the drum 10 is increased and the gravitation of the guard H is rendered slow, while by turning the screw 17 in the opposite direction, the pressure of the band against the drum is lessened and the gravitation of guard H is rendered fast in proportion to the loosening of the band. It will also be observed that by reason of the arrangement of the rod 11 and band 14, relative to the drum 10, the drum will draw the band 14 against its perimeter when the drum rotates in one direction synchronously with the descent of the guard H, and yet when the drum is rotated in the opposite direction by raising of the guard H by hand, the drum will not be subject to the pressure of the band and the band will, therefore, not interfere with the raising of the guard H.

The coiled compensating spring 18 comprised in the mechanism just described, serves, as its name implies, to enable the mechanism to accommodate itself to changes in temperature and by so doing prevents extremely cold weather from impairing the efficiency of the mechanism in checking or retarding the fall of the guard H without stopping said guard entirely.

After the guard H has gravitated its full extent and uncovered all the compartments B, it is simply necessary for the person in authority to re-charge the compartments, and then raise the guard H to its fully closed position. This latter may be readily accomplished while the outer end of the lever S is held down to keep the detent N out of engagement with the notches in the disk L. The term "check" as employed herein and in the claims appended is, of course, intended to comprehend coins and all analogous devices.

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

1. In a check-controlled vending apparatus, a check chute having an opening in one side of a greater width than one check and of a less width than another check, and also having yielding means arranged to guide the smaller check through said opening, and a door for closing the opening when it is desired for the smaller check to pass through the entire length of the chute.

2. In a check-controlled vending apparatus, a check chute having an opening in one side of a greater width than one check and of a less width than another check, a spring connected to the other side of the chute and arranged to normally extend across the chute and rest in the said opening in the first named side of the chute, and a door for closing the said opening of the chute when it is desired for the smaller check to pass through the entire length of the chute.

3. In a check-controlled vending apparatus, a check chute having an opening in one side of a greater width than one check and of a less width than another check, a spring connected to the other side of the chute and arranged to normally extend across the chute and rest in the said opening in the first named side of the chute, a door connected with the chute and adapted when released to spring open and having a projection at its inner side adapted to snugly occupy the opening in the chute, and means for fastening the door in a closed position.

4. In a check-controlled vending apparatus, the combination of a plurality of compartments adjustable as to size, a movable guard for said compartments, a check chute having adjustable means whereby it may be arranged to conduct a small check throughout its length or to discharge said check at an intermediate point of its length and conduct a larger check only throughout its length, and means adapted to be operated by a check deposited in the chute and when operated to permit movement of the guard; said means being adjustable to permit a small movement of the guard when the compartments are reduced in size and a comparatively large movement of the guard when the compartments are increased in size.

5. In a check-controlled vending apparatus, the combination of a plurality of compartments adjustable as to size, a movable guard for said compartments, and check operated means for permitting movement of the guard; said means being adjustable to permit a small movement of the guard when the compartments are reduced in size and a comparatively large movement of the guard when the compartments are increased in size, and means adjustable to take either a small check or a large check only to the said check operated means.

6. A vending apparatus having compartments, means whereby the compartments may be increased or diminished in size, a check-controlled guard for the compartments and means through which the length of step by step movements of the check-controlled guard may be made commensurate with the size of said compartments.

7. In a check-controlled vending apparatus, the combination of check operated means capable of adjustment to permit

either a large movement or a small movement of the means it controls, the said means, and means adjustable to take either a small check or a large check only to the said check-operated means.

8. In a check-controlled operating mechanism, the combination of a rotary element having a plurality of separated groups of notches, a check-controlled detent adapted to normally rest in one of said notches, and a rotary element adjustable with respect to the first named rotary element and provided with means adapted on said adjustment to increase or diminish the number of the notches in each group of notches.

9. In a check-controlled operating mechanism, the combination of a rotary element having a plurality of separated groups of notches, a check-controlled detent adapted to normally rest in one of said notches, a rotary element adjustable with respect to the first named rotary element and provided with means adapted on said adjustment to increase or diminish the number of the notches in each group of notches, and means for adjustably fixing the second named element in its different positions with respect to the first named element.

10. In a check-controlled operating mechanism, the combination of a rotary element having equi-distant separated notches, a

check-controlled detent adapted to normally rest in one of said notches, and a rotary element adjustable with respect to the first named rotary element and provided with means whereby when it is turned through a part of a revolution, the alternate notches of the first named element will be cut out—i. e., closed to the detent.

11. In a check-controlled operating mechanism, the combination of a rotary element having a plurality of separated groups of notches, a check-controlled detent adapted to normally rest in one of said notches, a rotary element adjustable with respect to the first named rotary element and provided with means adapted on said adjustment to increase or diminish the number of the notches in each group available to the detent, and a third rotary element adjustable with respect to the first named rotary element and provided with means adapted on said adjustment to cut out the alternate notches in the first named element.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

EVERETT X. SOMERS.

Witnesses:

JOHN RICKABY,
ANNIE M. BROWN.