

No. 741,667.

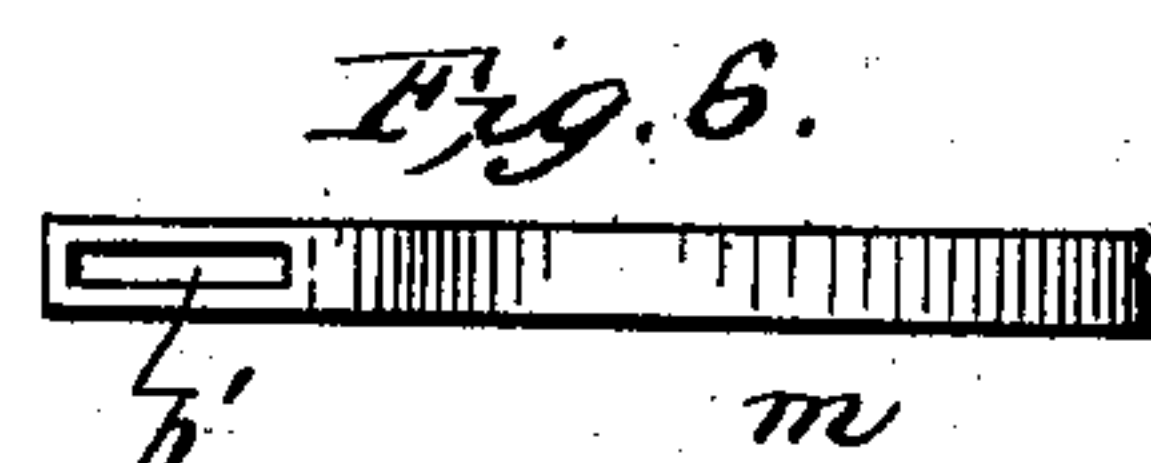
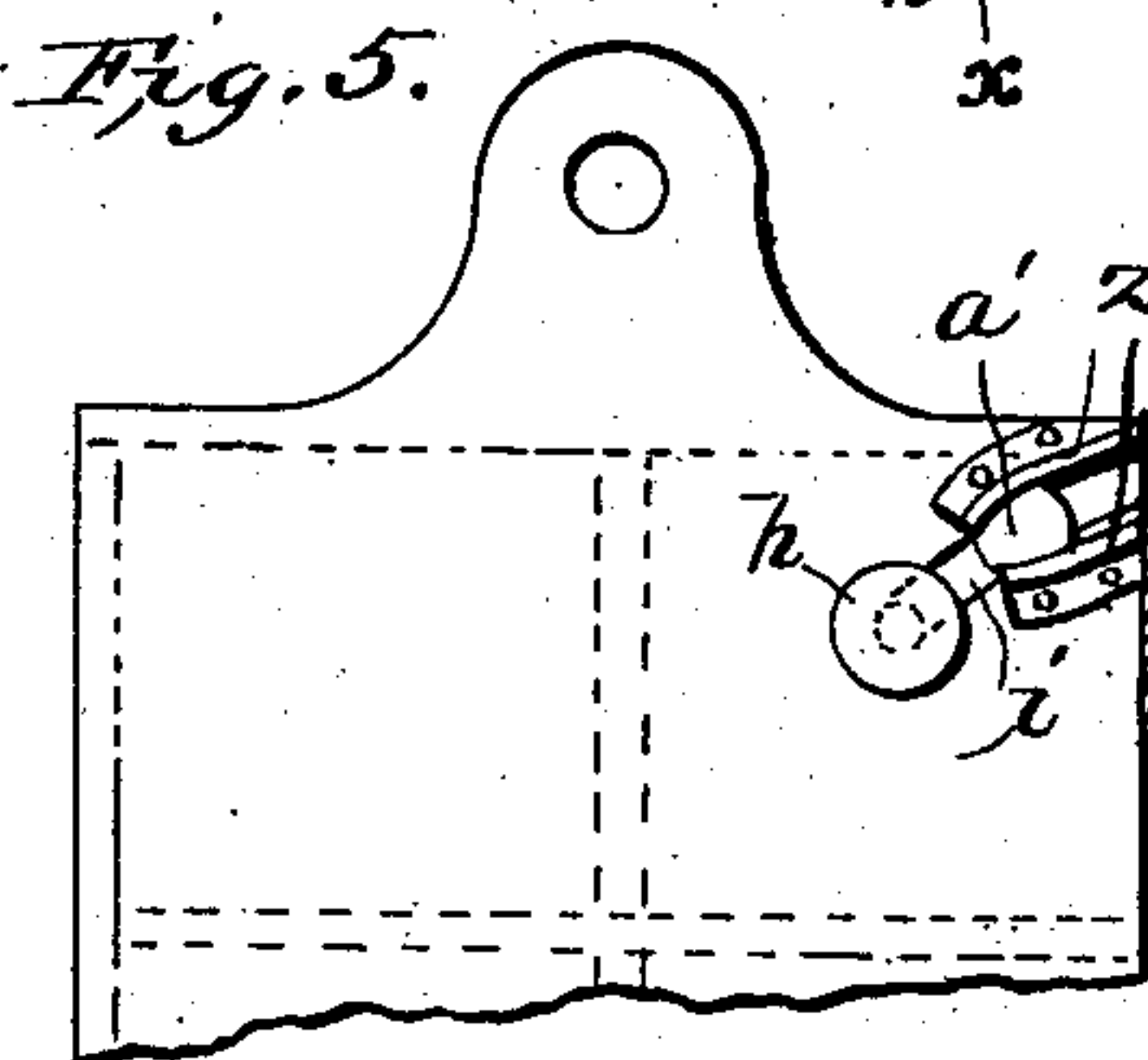
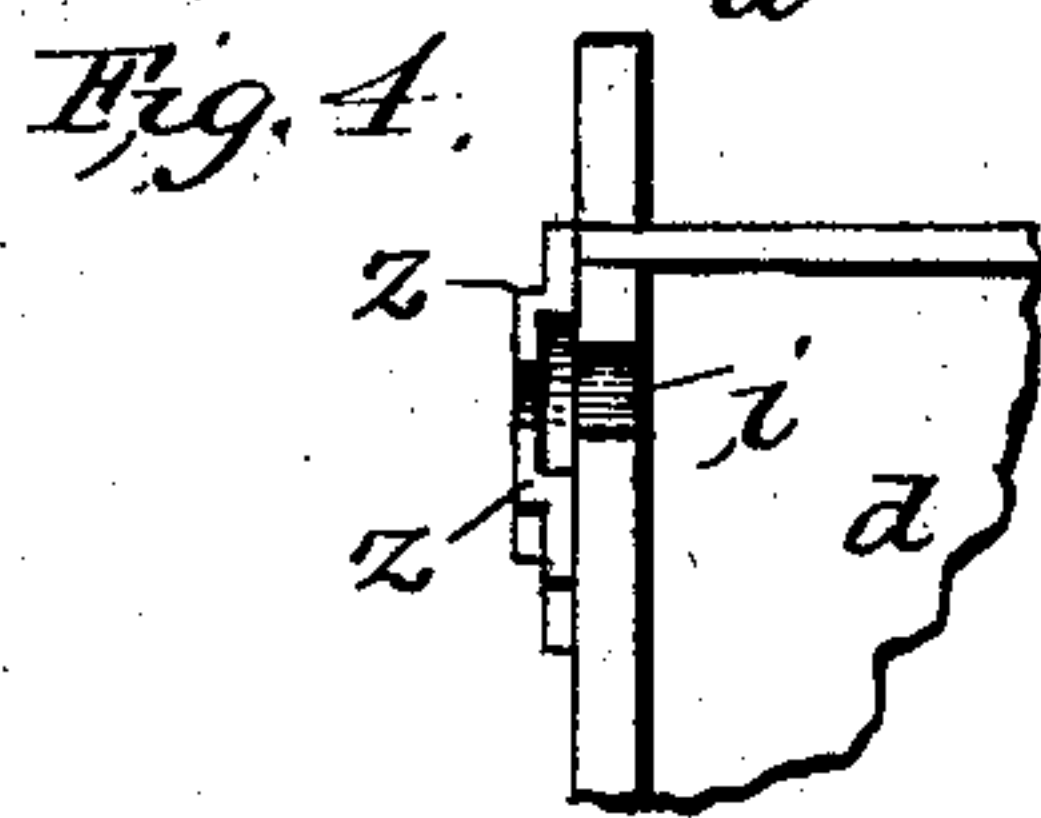
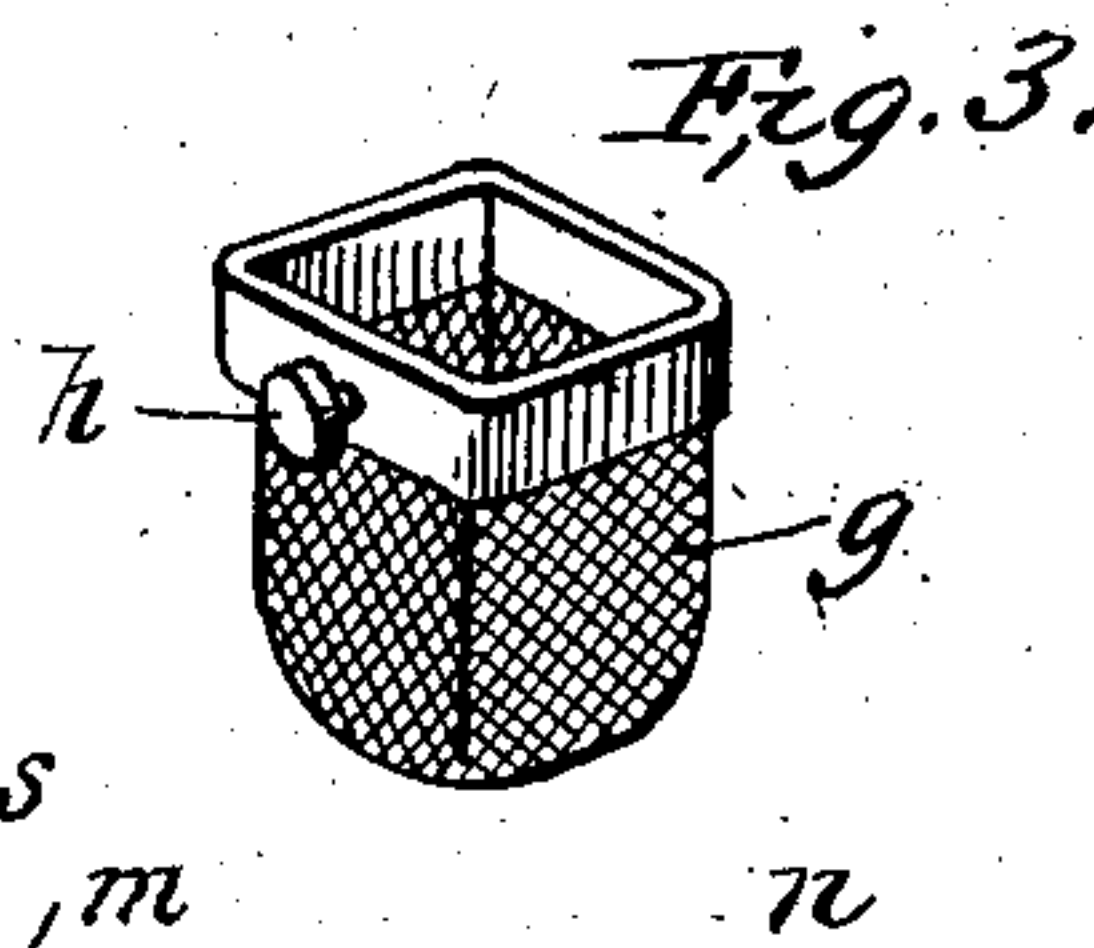
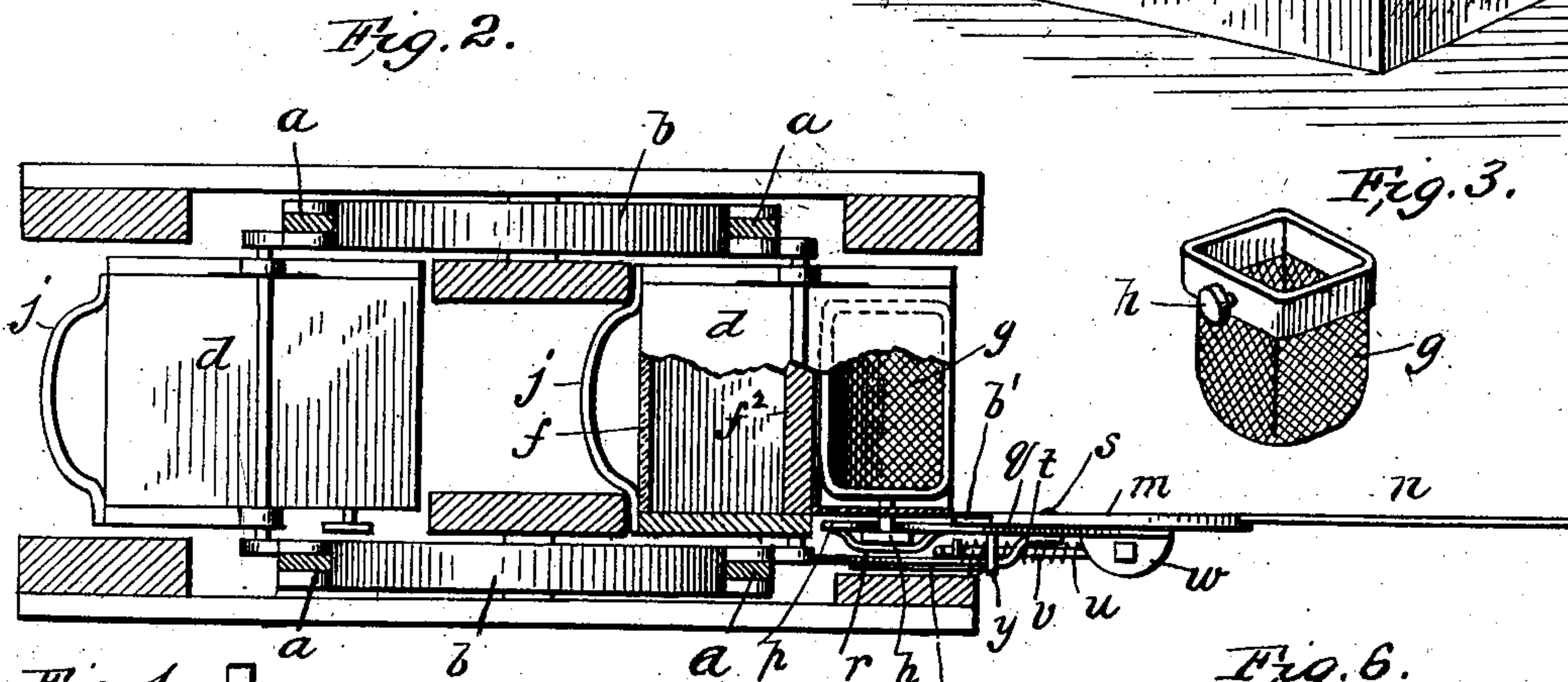
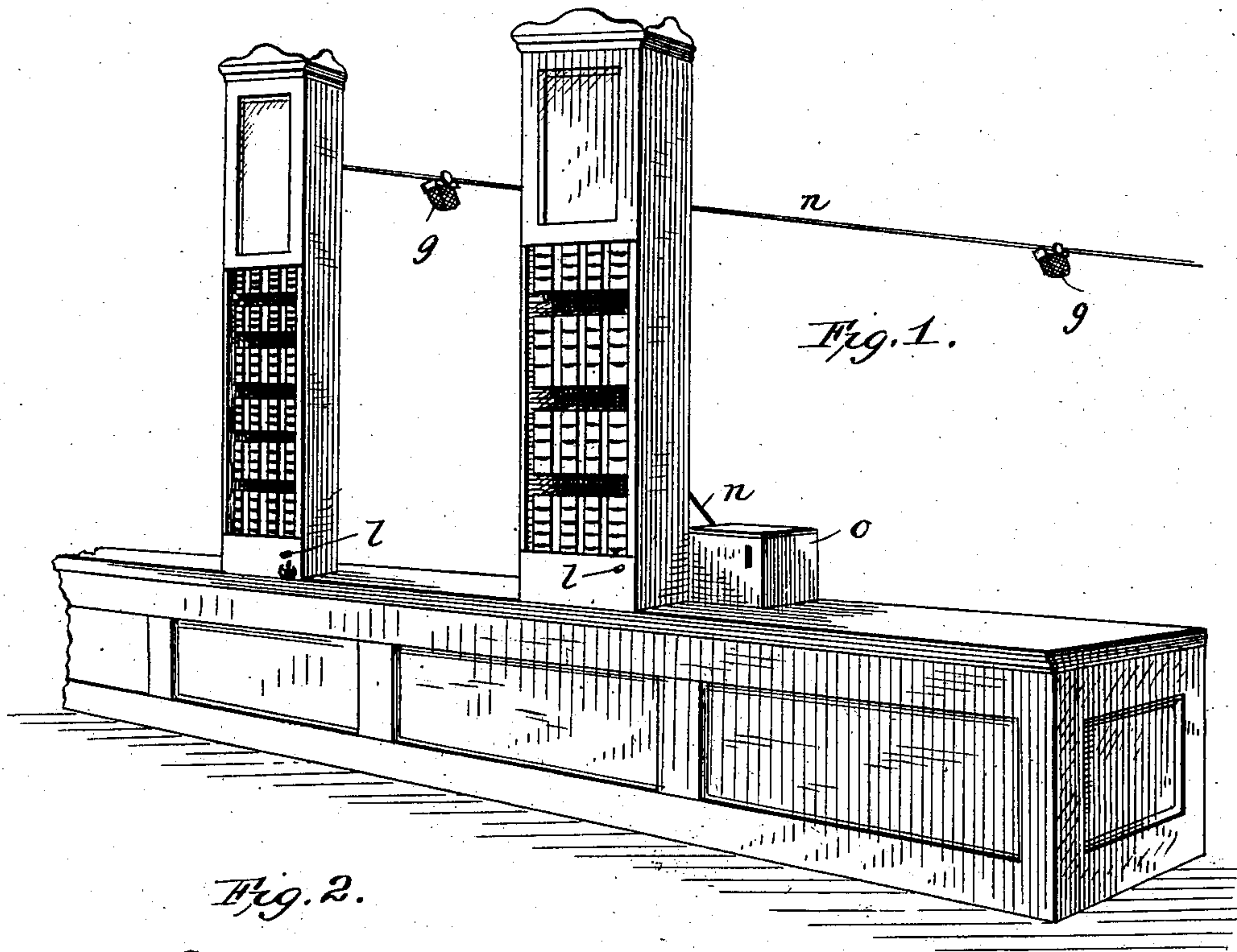
PATENTED OCT. 20, 1903.

J. B. HURD.
VENDING MACHINE.

APPLICATION FILED APR. 3, 1903.

NO MODEL.

3 SHEETS—SHEET 1.



WITNESSES

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3 SHEETS—SHEET 2.

Fig. 7.

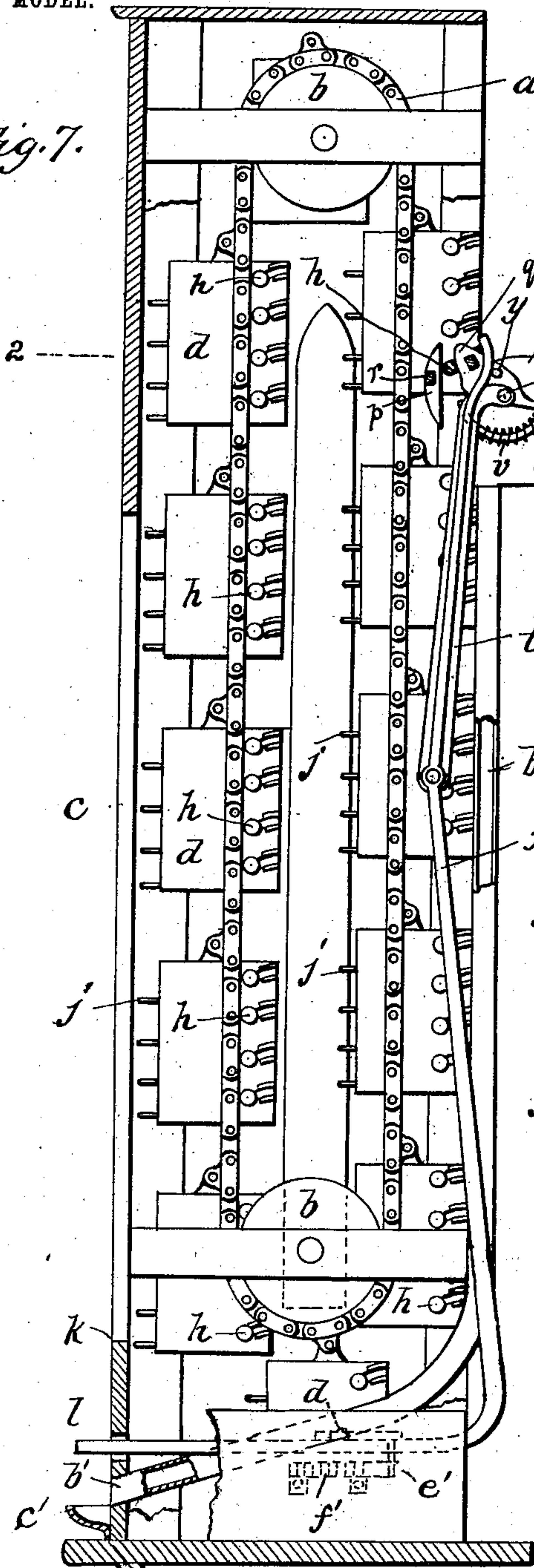


Fig. 8.

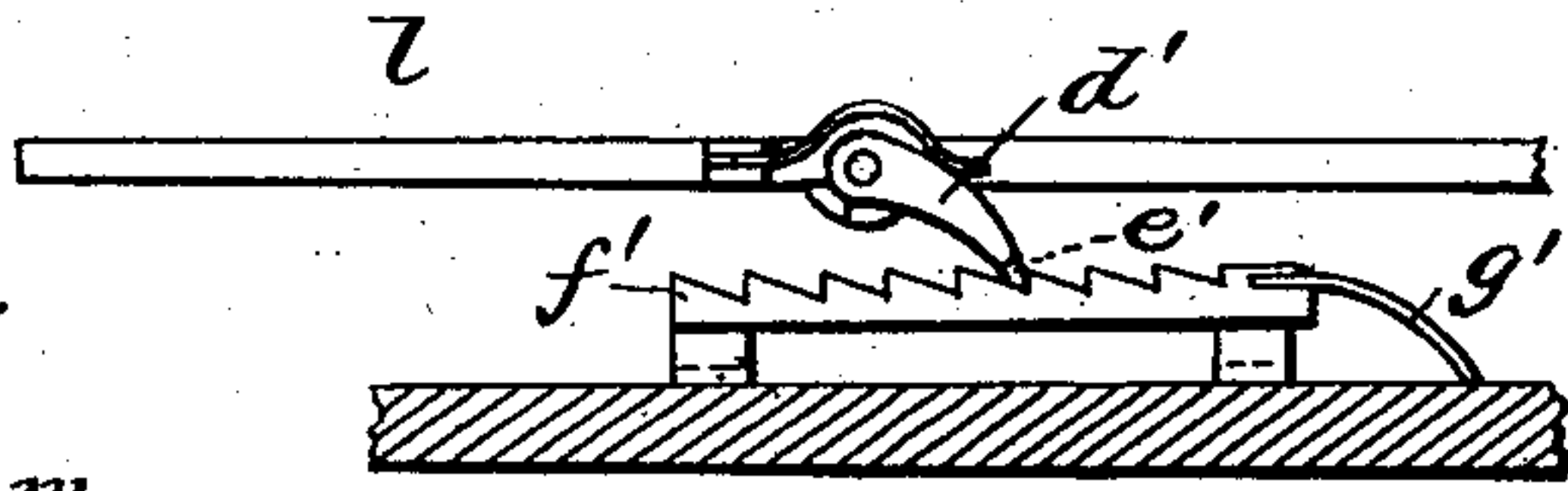


Fig. 9.

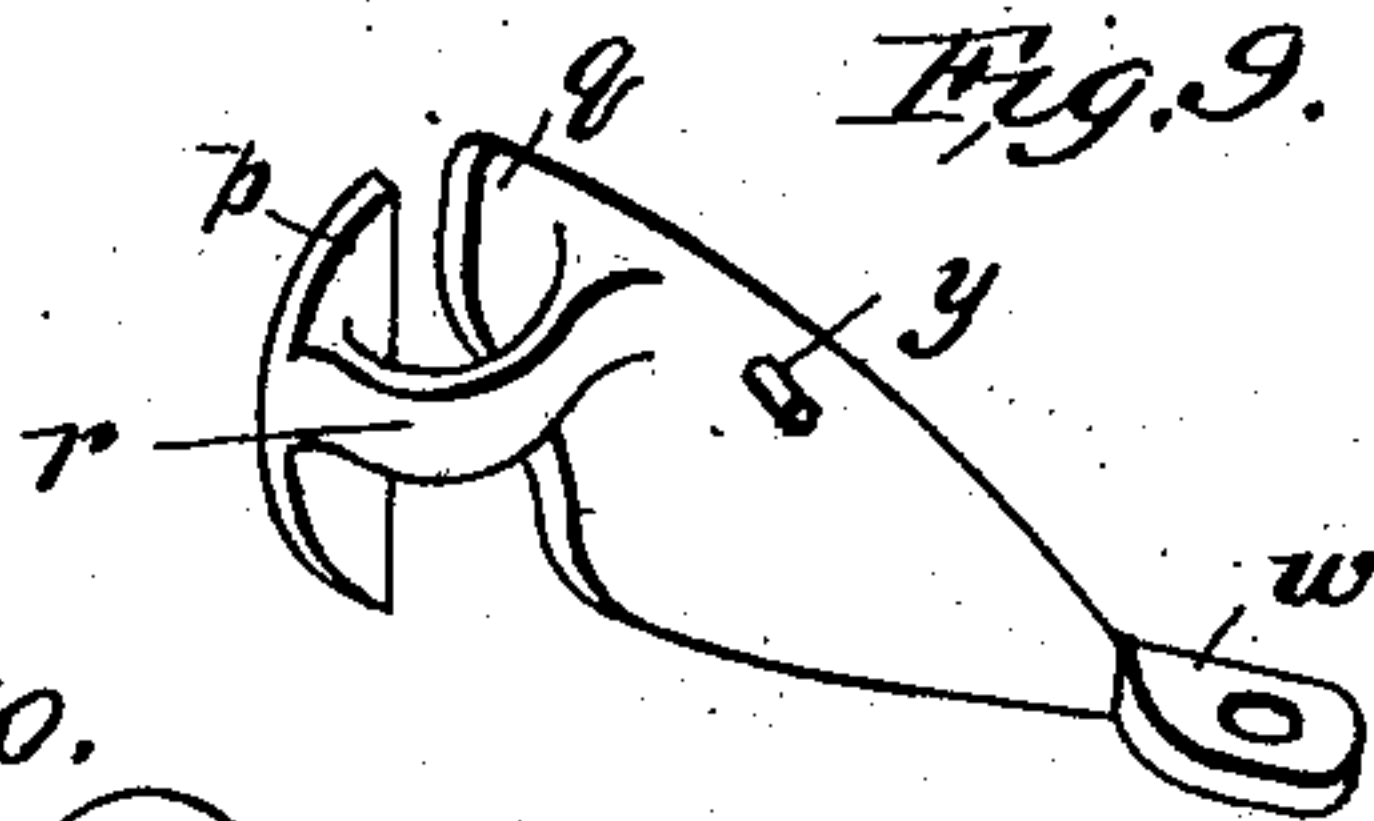
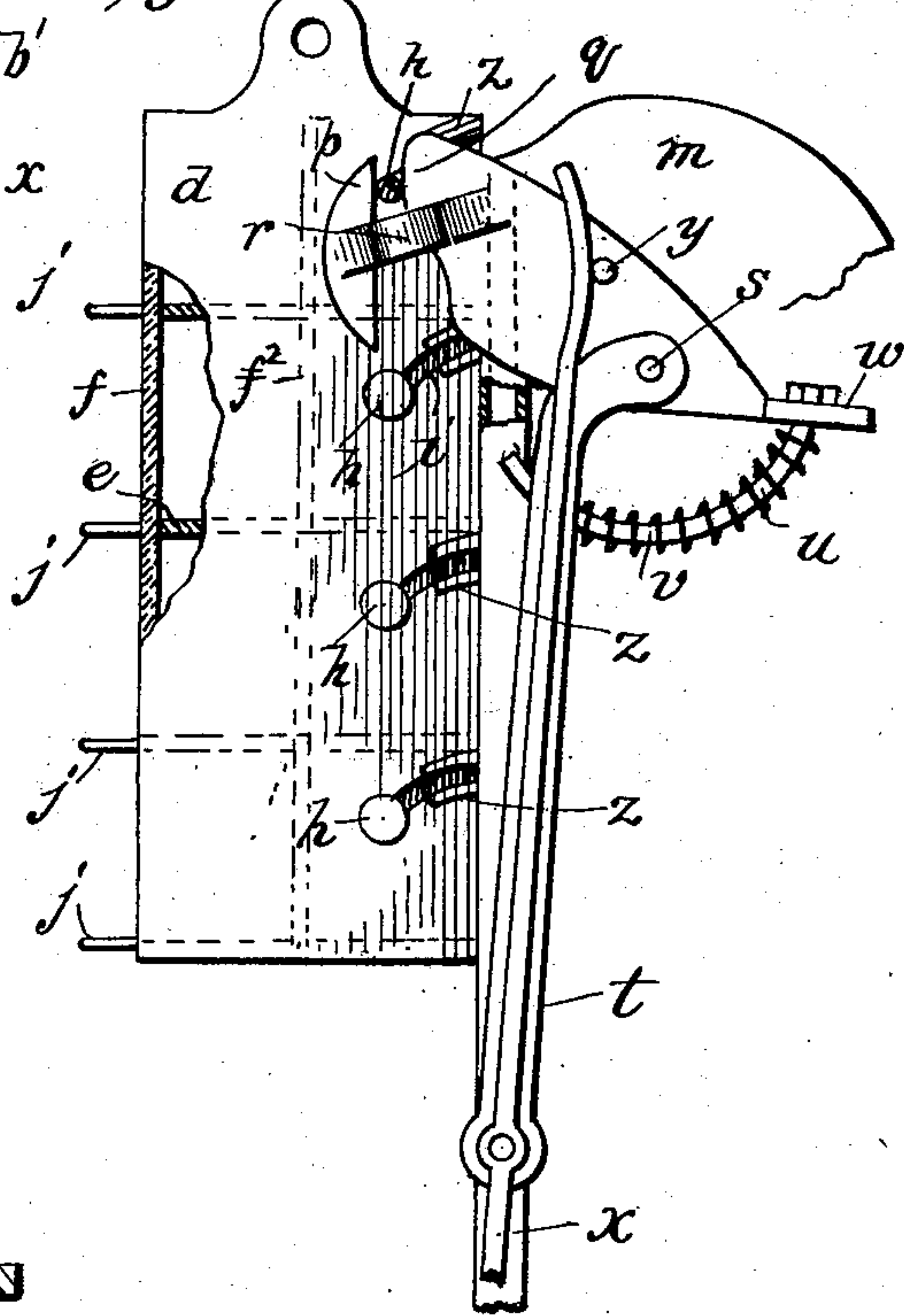


Fig. 10.



WITNESSES

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INVENTOR

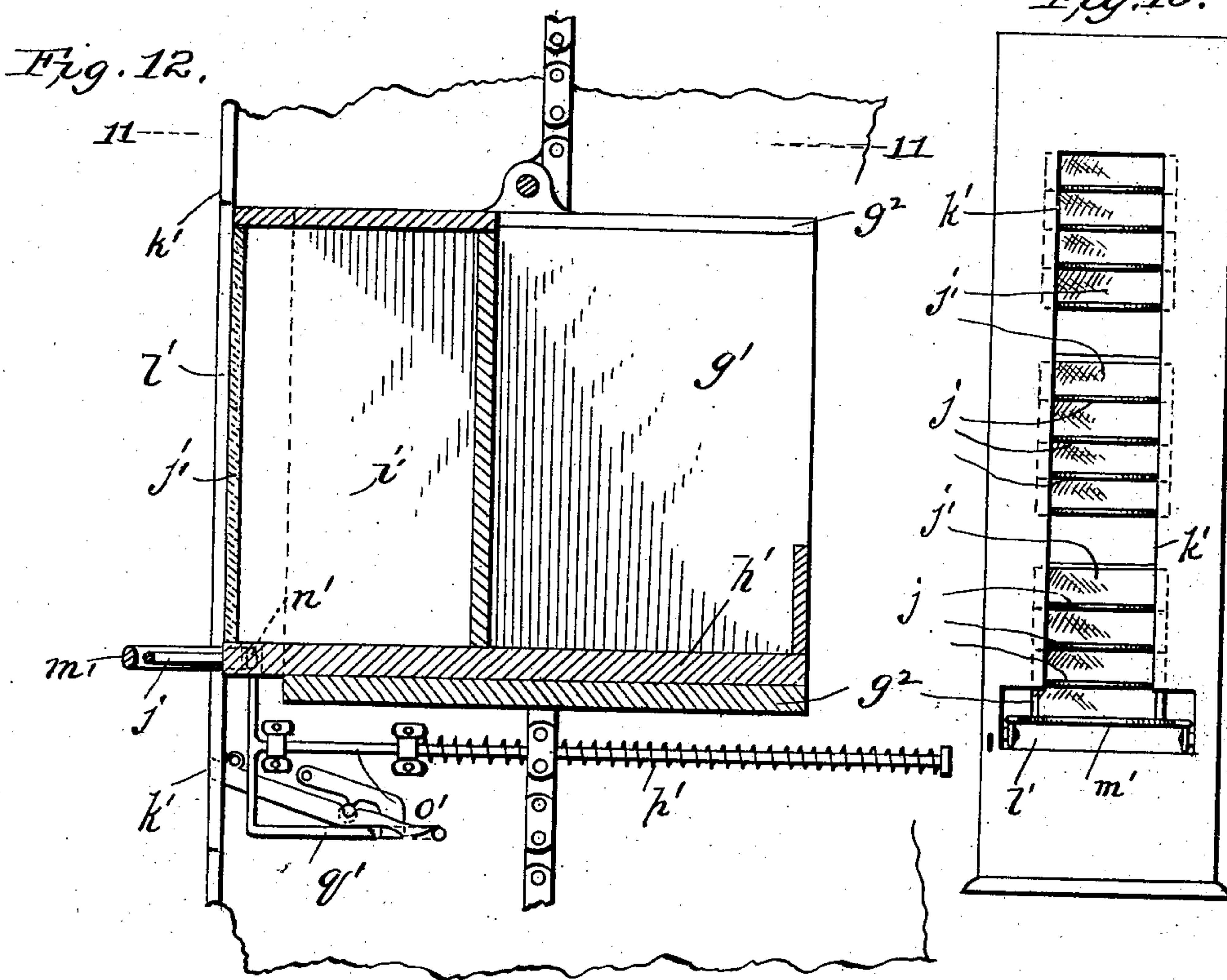
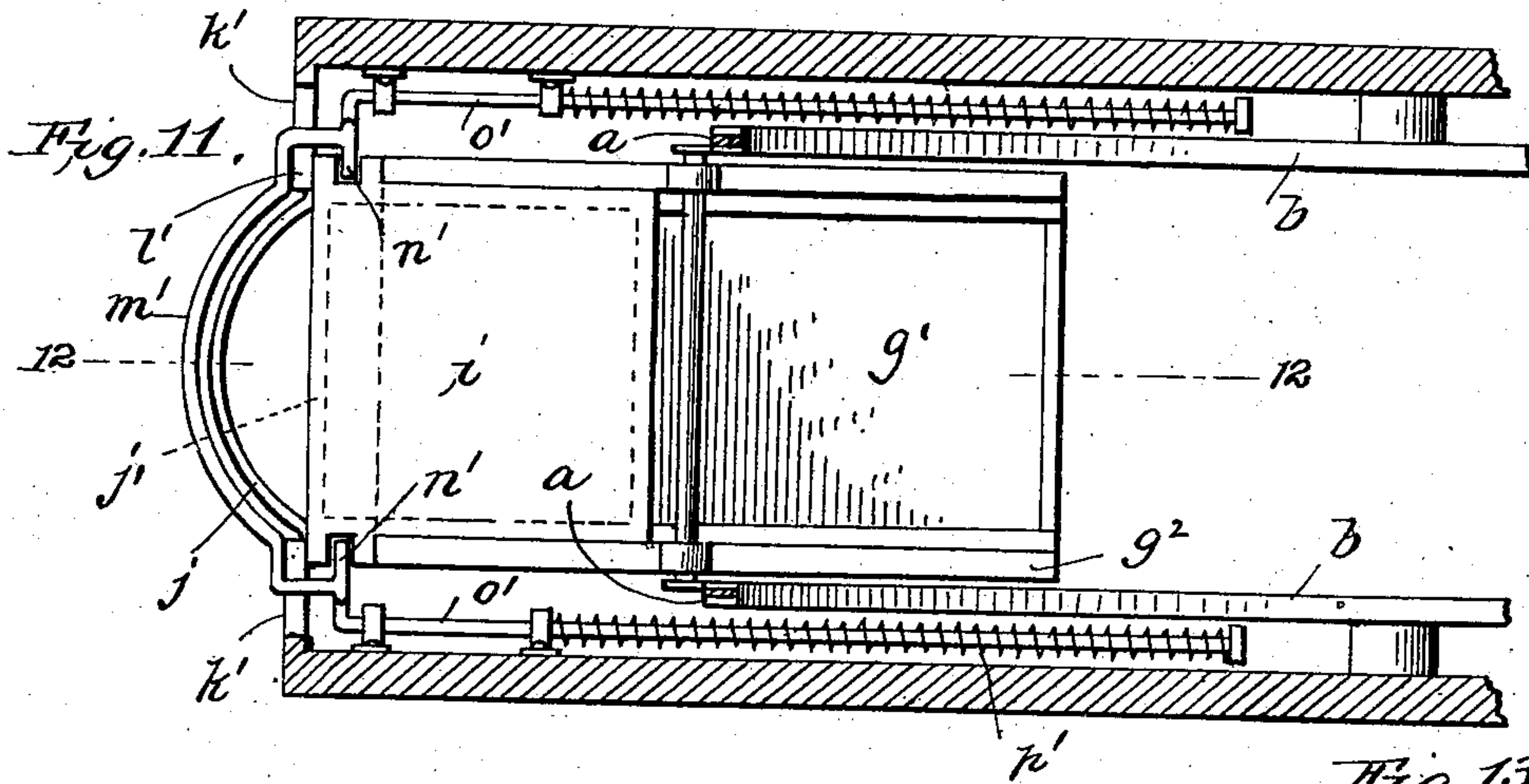
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APPLICATION FILED APR. 3, 1903.

NO MODEL.

3 SHEETS—SHEET 3.



WITNESSES

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UNITED STATES PATENT OFFICE.

JUDSON B. HURD, OF BROOKLAND, DISTRICT OF COLUMBIA.

VENDING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 741,667, dated October 20, 1903.

Application filed April 3, 1903. Serial No. 150,973. (No model.)

To all whom it may concern:

Be it known that I, JUDSON B. HURD, a citizen of the United States of America, and a resident of Brookland, District of Columbia, have invented certain new and useful Improvements in Vending-Machines, of which the following is a full, clear, and exact description, reference being had therein to the accompanying drawings, in which—

Figure 1 is a perspective view of a store-counter upon which are mounted two of my vending-machines, the one to the left being adapted for use where a cashier's check is issued and the article purchased is sent to the cashier's desk to be redeemed by the check, and the one to the right showing an apparatus which will deliver the purchased article to a coin-controlled deposit-box, from which the purchaser can remove the article by the deposit of the proper coin; Fig. 2, a transverse section through the line 2 2 of Fig. 7; Fig. 3, a detail perspective of one of the delivery-baskets for containing the articles to be sold; Figs. 4, 5, and 6, detail views hereinafter described; Fig. 7, a vertical section of the apparatus shown at the left-hand end of Fig. 1; Fig. 8, a detail plan view of a device hereinafter described; Fig. 9, a detail perspective of the ejecting device or cam; Fig. 10, a detail side elevation, partly in section, showing more particularly the devices for ejecting the receptacle from the traveling carriers; Fig. 11, a horizontal section of the apparatus, showing a modification; and Fig. 12, a vertical section showing the same modification. Fig. 13 is a front view of a casing adapted for the modification shown in Figs. 11 and 12.

The object of this invention is to provide a simple apparatus by which small articles of merchandise may be sold suitably wrapped and ready for delivery without the intervention of a salesman, the purchaser himself performing the operations incident to the selection and delivery of the articles, as more fully hereinafter set forth.

In a suitable vertical casing is mounted a pair of endless conveyers *a*, which are supported on pairs of wheels *b*, said casing having an open front *c*. Hung between the conveyor-chains is a series of magazine merchandise-carriers *d*, each of which is suitably di-

vided by horizontal shelves *e* into a number of compartments. The front wall *f* of each of these carriers is made transparent, and the rear of each carrier is open its entire length, so that a suitable basket or carrier *g* may be readily placed in each rear compartment, each basket or carrier being provided with a lateral pin *h*, which passes into a curved slot *i* in one of the side walls of the carrier when the basket is inserted in the compartment, said pin *h* being provided with a head at its end. The compartments in each carrier are subdivided by a vertical partition *f*², the front one of these subcompartments being for the reception of a sample of the article which is to be placed in the basket in the rear part of the compartment. When the carrier is loaded, the pins *h* of all the baskets or carriers are in the same vertical plane.

It will be observed that with a construction such as described the chains or conveyers may be moved continuously in one direction. Coincident with each of the compartments in each carrier is a handle *j*, by which the customer may draw down the carrier at will, the open front permitting him to gain access to the handles, but not to the rear or open side of the carriers. To make a purchase, the customer takes hold of the handle *j* which is coincident with the compartment containing the article he desires to purchase and pulls or pushes down the carrier until that handle comes just opposite the lower edge *k* of the front opening. At that instant suitable devices cause a pull-rod *l* to be forced outward through an opening in the front of the casing. The customer then takes hold of that rod and pulls it farther outward, and thereby by means hereinafter described forces a basket or carrier having a similar article from one of the rear carriers onto a suitable inclined support *m*, from which leads an inclined wire *n* to the cashier's desk or to a suitable coin-operated device. As the basket emerges from its compartment only its pin *h* engages the inclined support *m* and the wire, and the basket hangs upon the support and the wire freely by reason of the head on the pin, which acts as a sort of hook.

It will be observed that with this apparatus the articles will have to be arranged in the

carriers in such manner that whenever one of the handles *j* registers with the lower edge of the opening *c* or with any other mark that may be determined upon, the one of the compartments in the upward-going carriers in the rear of the apparatus containing a similar article must be opposite the ejecting devices in order that the purchaser may get an article identical with the one he has chosen in front of the case.

As stated, the wire *n* may run to a conveniently-located cashier's desk, in which case a check-delivering device will be arranged so that the customer can take the check and redeem the article at the desk to pay for it; but if it be desired to use a coin-operated device in connection with this apparatus the wire *n* will lead to such a device as shown at *o* in Fig. 1, this coin-operated device consisting of a suitable receptacle whose lid will be released by the deposit of a coin of the required denomination.

Any suitable arrangement of ejecting devices may be employed. The arrangement I have shown consists of a pair of cams *p* and *q*, connected by an arch *r* to permit the passage of the heads of pins *h*, the shanks of the pins passing between the adjacent faces of cams *p* and *q* as the carriers ascend. The throat or passage between cams *p* and *q* is directly in line of the pins *h* as they ascend at the rear of the machine, and part *q* is pivoted at *s* to stationary part *m* and to the upper end of a rod *t*. Between said rod *t* and the outer end of part *q* is a coil-spring *u*, which surrounds a curved rod *v*, which is fastened to a lug *w* on the outer end of part *q* and works through an opening in rod *t*.

Pivoted on the lower end of the rod or link *t* is a long rod *x*, which is a continuation of the rod *l*, the rod being bent at substantially right angles near its lower end, so that the part *l* will extend forward and project through the front of the casing. The rod *x* extends upward above pivot *s* and is curved and adapted to bear against the lateral pin *y*, carried by part *q*.

It will be observed that as each of the pins *h* passes through the throat between parts *p* and *q* each pin will strike against the inner inclined edge of part *q* and swing the upper end of said part outward and through the medium of spring *u* swing the depending end of rod *t* inward, thereby causing the rod *l* to project a short distance from the front of the casing. The lower end of rod or link *t* swings inward until it is stopped by the adjacent part of one of the chains *a* or by a suitable stop on the casing. Then when the customer pulls out rod *l* farther the upper end of rod *x* is caused to bear against pin *y* and swing the part *q* outward far enough to eject the pin *h* of the basket from the curved slot onto the stationary part *m*, from whence the basket passes to the way or track *n*. When part *q* is thus swung outward to discharge the basket or other article holder, spring *u* is of

course compressed, the lower end of link *t* having come to a stop. When rod *l* is released by the customer, spring *u* normally restores parts *p* and *q* and rod *x* to their normal position and dependent link *t* normally swings outward by gravity to its normal position. If it be desired to deliver a check to the purchaser, suitable check-holding flanges *z* may be arranged at opposite sides of each slot *i*, so that a check *a'* (shown in Fig. 5) may be supported in line with said slot and be ejected therefrom by said pin *h* when it passes out of the slot. A suitable chute *b'* may be arranged to convey the check to a receptacle *c'* just below rod *l*.

In order that the machine may be locked in case a customer fails to pull rod *l* out far enough to deliver the basket, I provide said rod *l* with a pivoted spring-actuated pawl *d'*, as shown most particularly in Figs. 7 and 8, which is provided with a depending pin *e'*, which normally engages the vertical teeth of a rack *f'*, fastened to the side of the casing. With this arrangement the rod will not be restored to its normal position until the pin *e'* has passed off the front end of the rack. When it thus passes off the front end of the rack, its spring snaps it in behind the rack and allows it to pass to the rear between the rack and the adjacent casing, when the rod is restored. As it passes to the rear said pin *e'* snaps under a spring *g'* at the rear end of the rack, said spring being curved, so as to form a cam, which when the rod is again pulled forward for another purchase will cause pin *e'* to ride up again upon the rack.

In the modification shown in Figs. 11, 12, and 13 the carrier *g*² supports a drawer or slide *h'*, constructed with the closed receptacle *i'* in its front part for holding a sample of the article which is contained in the rear open compartment *g'*, said front compartment being provided with a transparent front *j'*, so that the sample article may be inspected by a purchaser standing in front of a machine. Each carrier is provided with a handle *j*, as in the other form described. In this form each carrier is provided with but one sample-compartment and a corresponding compartment in the rear for the article to be sold; but it is of course understood that any number of compartments may be carried in each of the carriers, as shown in Fig. 13. The front of the casing is open nearly its full length, so that the customer may take hold of the handles *j* and move the carrier down as he inspects the contents, and in order to prevent the drawers from being drawn outward the side edges *k'* extend over a short distance upon the faces of the drawers, thereby affording locking-flanges. At the lower end of the opening in the face of the casing said opening is enlarged at *l'* sufficiently to permit the drawer to be withdrawn at that point. Across the lower edge of this opening *l'* extends a bail or handle *m'*, which is connected at its ends to rods *o'*, which are slid-

ably mounted in suitable bearings on the inner sides of the casing and are normally drawn into the casing by coil-springs p' . At the end of this bail where it joins the rods o' inward-extending lugs n' are formed, which register with suitable notches in the lower side edges of the drawer. When the carrier is so adjusted that its handle j is within handle m' and in the same horizontal plane, the lugs n' rest in the notches in the drawer, so that when handle m' is drawn out the drawer also will be drawn out, and the rods o' are long enough to permit the drawer to be drawn out far enough to permit the customer to remove the article from the rear compartment g' , and when the handles are released springs p' will draw back the drawer, and the carrier is then in position to be moved down out of the way. Connected to handle m' and rods o' is a rod q' , which is adapted to be locked by any suitable coin-controlled devices, so that before the handles m' and j can be drawn out said rod q' must be released by the deposit of a coin of the proper denomination.

It will be observed that I provide means for storing a large number of articles wrapped and ready to be delivered and also means for exhibiting samples of these articles which are not wrapped, so that they may be inspected by the customer. I also provide means by which the customer may select any individual article in the magazine and in addition means whereby the customer himself shall deliver the selected article to a pay-station without the intervention of a clerk. I also provide means whereby one general-delivery or pay station or one coin-controlled device serves for the delivery of articles from a large number of article-holders, and, furthermore, means whereby the supply of articles in the machine may be replenished from the rear with the greatest ease and facility and while sales are going on.

In coin-controlled machines heretofore invented the elevator or magazine is moved only by the coin-controlled devices, so that the customers are obliged to take the articles in the order in which they are placed in the magazine, thereby requiring the use of as many magazines and as many coin-controlling devices as you have varieties of goods, whereas in my machine the movement of the elevator or magazine is under the control of the customer, so that he may select and release any article he chooses, whereby a great variety of articles may be stored in a single machine.

It will be observed also that an important feature in that form of machine in which the article selected is delivered to a cashier's desk or to a coin-controlled receptacle lies in the fact that the customer himself not only selects, but also actually delivers, the selected article to the way or track leading to the cashier's desk or coin-controlled receptacle, thereby avoiding the necessity of employing

a clerk for handling the selected article and placing it upon a way or track.

This machine is intended for general store purposes and for handling goods on a large scale. On account of the value of lateral space in a salesroom the machine is to be arranged to accommodate several dozen or, if desired, several hundred articles in one upright column, which may extend to the ceiling or even through other rooms above or below. In this column may be many varieties of articles and several of each variety. With this in view it will be readily seen that the machine must have in combination certain very essential features. There must be a point of exhibition to enable the customer to select by sight any individual article from any class. Otherwise the whole column must be occupied by one class of goods, and they must be substantially alike. There must be a means under the control of the customer for bringing the articles to the point of inspection and for discharging them in any order from the machine, and, besides this, there should be a convenient means for refilling the machine while sales are going on. Where the machine is found useful, it may comprise many columns and occupy several feet of the counter's length, and if it should need replenishing during business hours the front of the machine could not be disturbed without much inconvenience and loss. To fully answer my main purposes, therefore, the machine must combine at least these three essential features—features which are not found in combination in the prior art; a vertical column of article-holders adjustable vertically by the customer to bring the articles to a point of inspection and to present them in any order at a point of release, an exhibition-opening in front, and a replenishing-opening in the rear. It will be noted that it is not to release articles from the machine in a predetermined order, but to give the customer control of means for selecting any individual article and for discharging articles in any order.

The elevator may be stocked with neckties, hose, and gloves. The customer may move it until the ties come in view, and then move it until he finds a pattern to suit his taste. It will be easy to have the samples and the rear compartments so numbered and arranged that when a sample is at a fixed spot an article corresponding with it will be at the point of release.

It will also be observed that by the term "open front" and similar terms in the specification and claims I do not confine myself to having the front literally open, as the same may be covered with glass or other transparent medium, the function of this open front being to give the customer a view of the articles he is to make his selection from.

As will be seen, the releasing device, by means of which the selected article is discharged from the magazine, may be in front

or in rear of the apparatus, but in every case will be operable from the front, also that the article may be delivered to a carrier apparatus which will transport it to a distant point, as a cashier's desk or a coin-controlled receptacle, to be redeemed, in the first instance, by a check, or, in the second instance, by a coin of the proper denomination, also that the articles may be delivered directly to the purchaser upon his depositing a proper coin and operating the releasing devices.

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

1. In a vending-machine, the combination of a casing, a vertically-movable magazine therein adapted to hold and exhibit a series of articles, means under the control of the purchaser for adjusting said magazine vertically to bring any one of said articles to the point of release, whereby the purchaser may select any one of the exhibited articles, means for protecting said articles against access from the front, and means under the control of the purchaser for releasing the article at the point of release.

2. In a vending-machine, the combination of a casing having an open front to exhibit the articles, an upright carrier or magazine for the articles having compartments to hold a series of articles, said magazine being freely movable vertically past the open front of the casing, means whereby the purchaser may control the movement of the carrier from the front and thereby bring any one of said compartments to the point of discharge or release, means for preventing access to said articles from the front, and means operable by the customer for discharging or releasing the purchased article.

3. In a vending-machine, the combination of an upright case provided with an exhibition-opening in front and a point of discharge to which any of the articles may be delivered, and a vertically-adjustable magazine within the casing, this magazine being open in the rear whereby the compartments of the magazine may be refilled while the sales are going on, and means freely controllable from the front of the case whereby the customer may present any of said articles at the point of inspection and deliver them in any order at the point of discharge.

4. In a vending-machine, a movable magazine consisting of a series of carriers, each of which is constructed of a front compartment having a transparent front and a rear compartment accessible from the rear, for the purposes set forth.

5. A carrier for a magazine vending-machine consisting of a series of front, closed compartments having transparent front walls and a corresponding series of rear compartments accessible from the rear.

6. In a vending-machine, a carrier having a front compartment for exhibiting a sample,

and a rear compartment for containing the article to be delivered, and means controllable by the customer for releasing the article to be sold.

7. In combination with a casing, a vertically-adjustable magazine therein, an adjacent way or track leading from the magazine to a point of delivery, and means operable by the purchaser for delivering the articles from the magazine to said way or track.

8. In combination with a casing, a magazine therein and means for vertically adjusting the magazine to bring the article desired to the point of delivery, and means operable by the customer to forcibly eject said article from the magazine.

9. In a vending-machine, the combination of a casing having an open front, an endless upright conveyer therein carrying a series of carriers each of which is provided with a series of compartments to hold articles of merchandise, means whereby the carriers may be moved vertically by the customer in front of the machine, to bring the carriers one after another to the open front of the machine, and means whereby any one of the articles may be selected and released, said means being operable by the customer.

10. In a vending-machine, the combination of a vertical magazine of receptacles adapted each to hold an article of merchandise, a single releasing device operable from the front of the machine, and means whereby said single releasing device and any one of said receptacles may be brought into coöperative relation, whereby the customer shall have a choice of the articles and control of the order of their delivery from the magazine.

11. In a vending-machine, the combination of an upright case, adapted to present one side to the customer and another side to an attendant, a series of vertically-adjustable article receptacles or holders, means freely controllable and operable from the front of the case whereby the purchaser may control the vertical movement of said holders to present any one of said articles at a point of inspection and release them in any order at a point of discharge, means for preventing access to the articles from the front except by said releasing means and at the same time permitting free access to the empty article-receptacles at the side presented to the attendant, whereby the apparatus is adapted to dispense articles while it is being refilled by an attendant.

12. In a vending-machine the combination of an exhibition-case containing a series of holders for articles of merchandise, means freely controllable from the front of the case whereby the customer may release the said articles from the case in any order, and means for delivering a check corresponding to the article released.

13. In a vending-machine, the combination of a casing having an open front, an endless

upright conveyer therein carrying a series of holders for articles of merchandise, means whereby the conveyer may be moved by the customer in front of the machine to bring the article-holders one after another to the open front of the machine, and means whereby any one of said articles of merchandise may be selected and released, said means being operable by the customer.

14. In a vending-machine, the combination of a casing having an open front, an endless upright conveyer therein carrying a series of holders for articles of merchandise, means whereby the conveyer may be moved by the customer in front of the machine to bring the article-holders one after another to the open front of the machine for exhibition, means for preventing the removal of said articles of merchandise at the point of exhibition, and means whereby any one of said articles may be selected and released, said means being operable by the customer.

15. In a vending-machine, the combination of a case containing a series of receptacles for articles of merchandise, a check-holding device for each receptacle, a carrier or track connecting said case with a distant point, as a cashier's desk, means under the control of the customer for transferring said articles in any order to said carrier apparatus, and means for delivering to the customer a check corresponding to the article transferred.

16. In a vending-machine, a case containing a series of article-holders, a check-holder for each article-holder, and means under the control of the customer for selecting any one of said articles and releasing it and simultaneously therewith releasing the check corresponding thereto.

17. In a vending-machine, the combination of an adjustable magazine of article-holders, freely controlled by the customer, whereby a customer may select said articles in any order, means for releasing the article selected, and means for delivering a check corresponding to the article selected and released.

18. In a vending-machine, the combination of a vertically-adjustable dispensing-case adapted to hold a series of articles of merchandise, a carrier stationary with respect to said adjustable dispensing-case and adapted to carry said articles to a distant point and means controllable from the front of the case for transferring said articles in any order from said case to said carrier.

19. In a vending-machine, the combination of a vertically-adjustable exhibiting and storing magazine containing a series of independent article-receptacles, adapted to hold a series of unlike articles of merchandise, said means being freely controllable from the front so that the customer may select one of said articles and bring it to the point of release, means preventing access thereto from the front, means for releasing the selected article operable from the front, and a carrier con-

nected to the upper part of the magazine for receiving and transferring the released article from the magazine.

20. In a vending-machine adapted to connect distant points as an exhibition-case with a cashier's desk, the combination of a carrier apparatus between said points, means for storing articles of merchandise in said case, and means for transferring said articles in any order from said case to said carrier, the means controlling the movement of the articles while in the case and their transfer to the carrier being operable by the customer in front of the case, said carrier apparatus and the movement of the article on the same being out of his control, whereby the final delivery of the article to the customer is in the hands of the cashier.

21. In a vending-machine the combination of a vertically-movable carrier, a series of article-holders, a point of exhibition at the front of the machine where the articles or their representatives may be inspected, a releasing device means to prevent the articles being removed from the front of the machine except by the use of the releasing device, and means operable from the front of the machine for controlling said carrier in its vertical movement to bring any of said article-holders and said releasing device into coöperative relation, whereby the customer shall have a choice of the articles and control of the order of their release from the machine.

22. A vending-machine of the class described having in combination a vertically-movable carrier, a series of article-holders, a point of exhibition at the front of the machine where the articles may be brought to view, a releasing device, means to prevent the articles being removed from the front of the machine except by the use of the releasing device, means operable from the front of the machine for moving said carrier to bring any of said article-holders and said releasing devices into coöperative relation, and an opening in the rear for refilling the empty article-holders while sales are going on.

23. In a vending-machine, an upright endless carrier having a series of article-holders arranged in a column adapted to accommodate several articles in each class, a releasing device adapted to release the articles from the holders and release them from the machine, means operable from the front of the machine whereby the customer may select any individual article from any class in said column and cause it to be released, and means for locking the releasing device.

24. In a vending-machine, the combination of means for storing articles of merchandise, means operable by the customer for releasing said articles from said store in any order, and means whereby a check corresponding to the article released is delivered to the customer.

25. In a vending-machine, a series of com-

partments adapted to hold for exhibition samples of articles for sale, a corresponding series of holders for the articles ready to be delivered, means operable by the customer for
5 releasing any article from said article-holders, and means for delivering a check corresponding to the same.

26. In a vending-machine the combination of a carrier apparatus adapted to connect distant points as a cashier's desk with a case for
10 storing articles of merchandise, means for transferring the articles from said case to said carrier, the means controlling the movement of the articles while in the case and
15 their transfer to the carrier being operable by the customer, said carrier apparatus and the movement of the article on the same be-

ing out of his control, whereby the final delivery of the article to the customer is in the hands of the cashier. 20

27. In a vending-machine, the combination of means for storing articles of merchandise, means operable by the customer for releasing said articles from said store, and means
25 whereby a check corresponding to the article released is delivered to the customer.

In testimony whereof I hereunto affix my signature, in the presence of two witnesses, this 3d day of April, 1903.

JUDSON B. HURD.

Witnesses:

CHARLES D. DAVIS,
ALEXANDER S. STEUART.