I. F. HARRIS.

VENDING APPARATUS.

APPLICATION FILED NOV. 27, 1909.

969,619.

Patented Sept. 6, 1910.

4 SHEETS—SHEET 1.

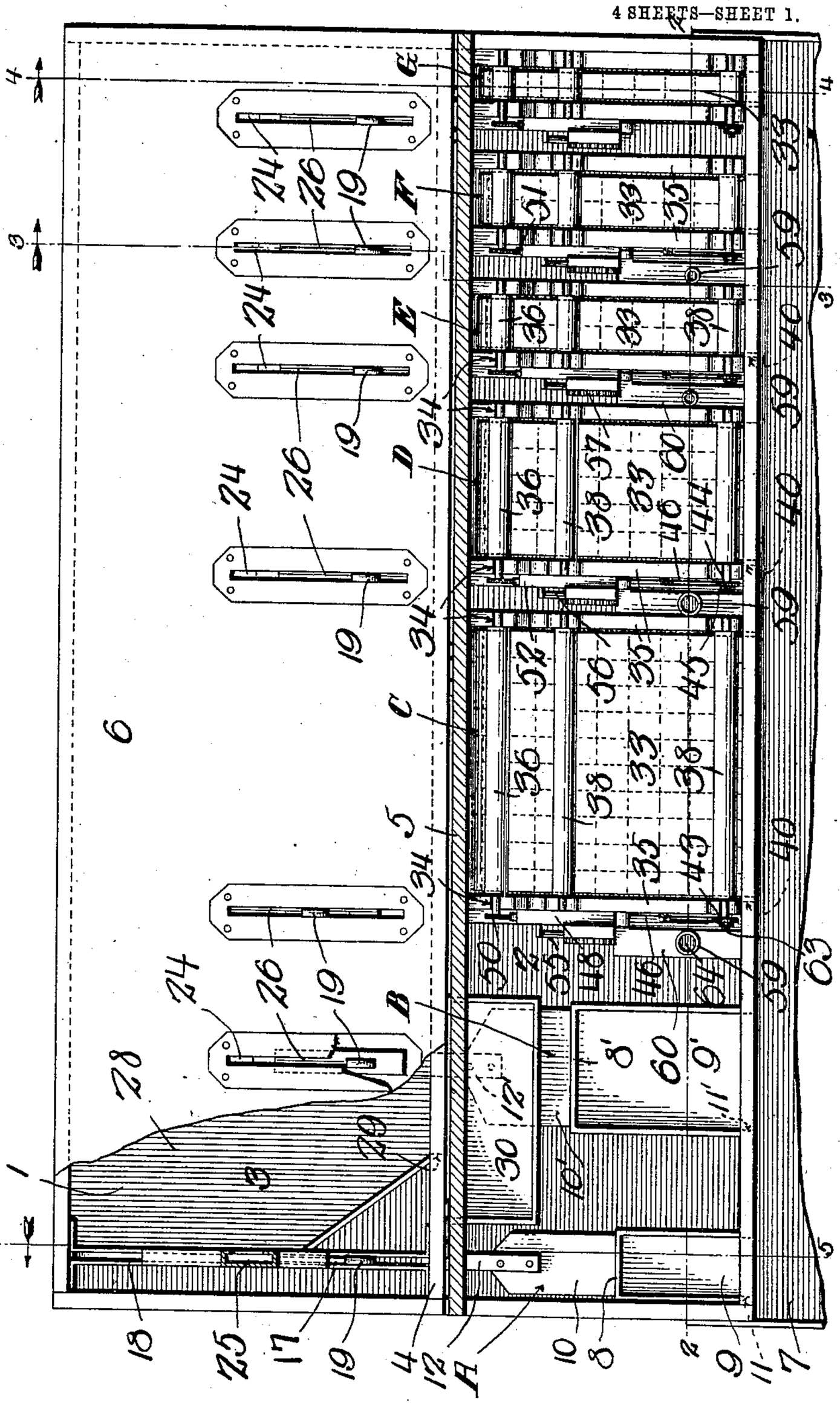


Fig. 1.

Witnesses

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4 SHEETS—SHEET 2.

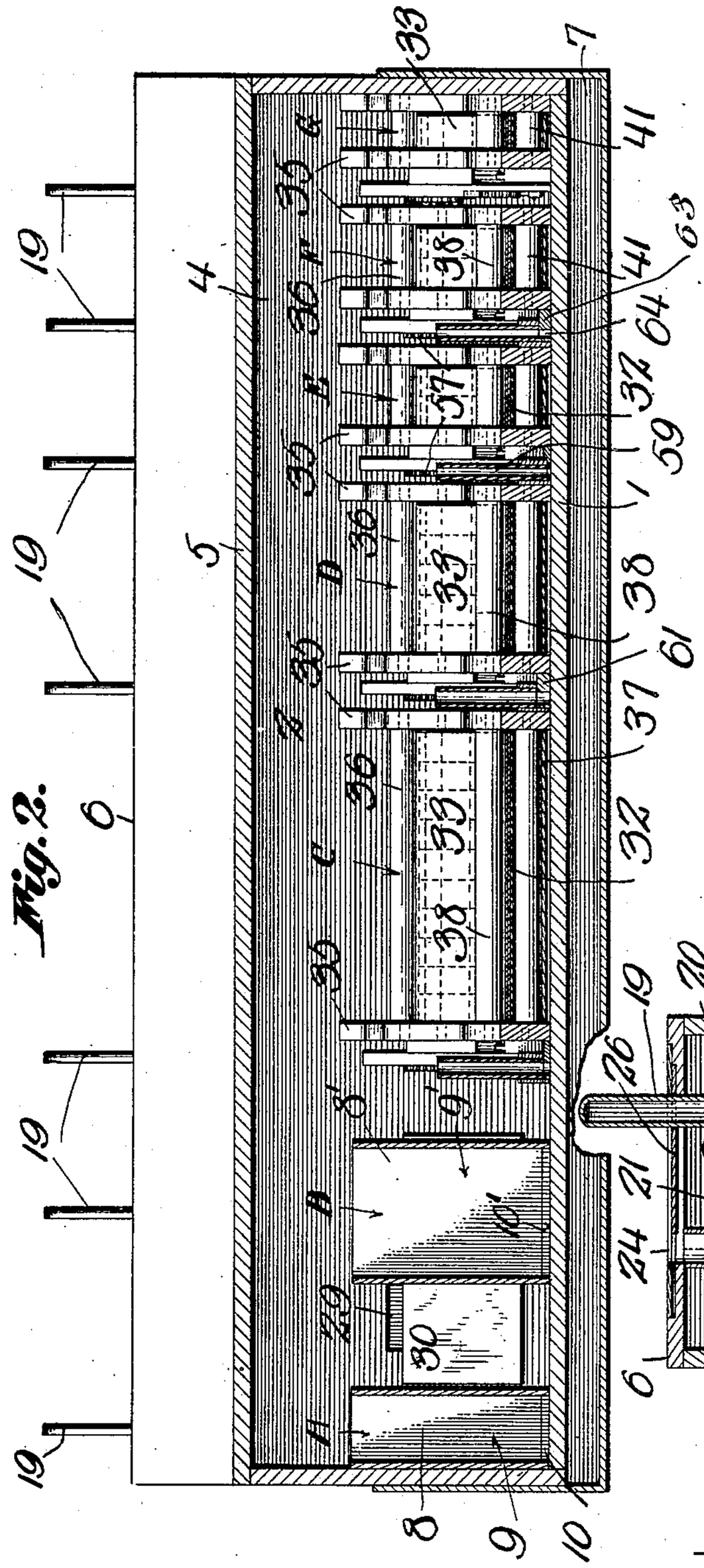

Fig. 2.

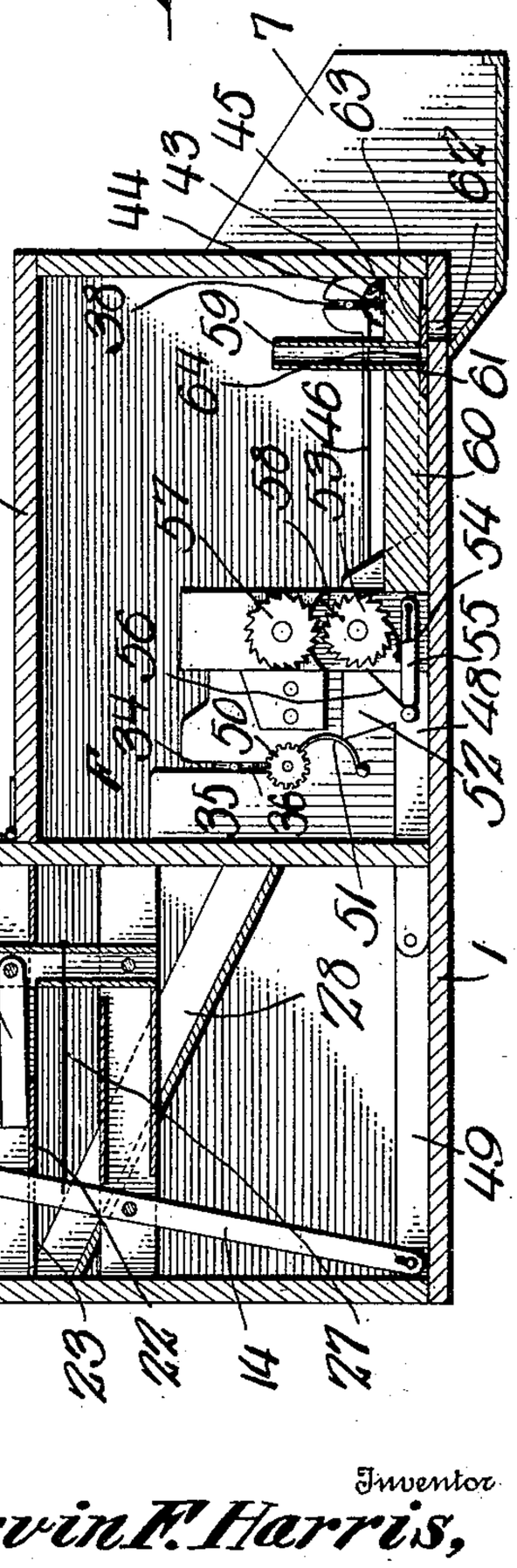

Fig. 3.

Witnesses

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4 SHEETS—SHEET 3.

*Fig. 4.*

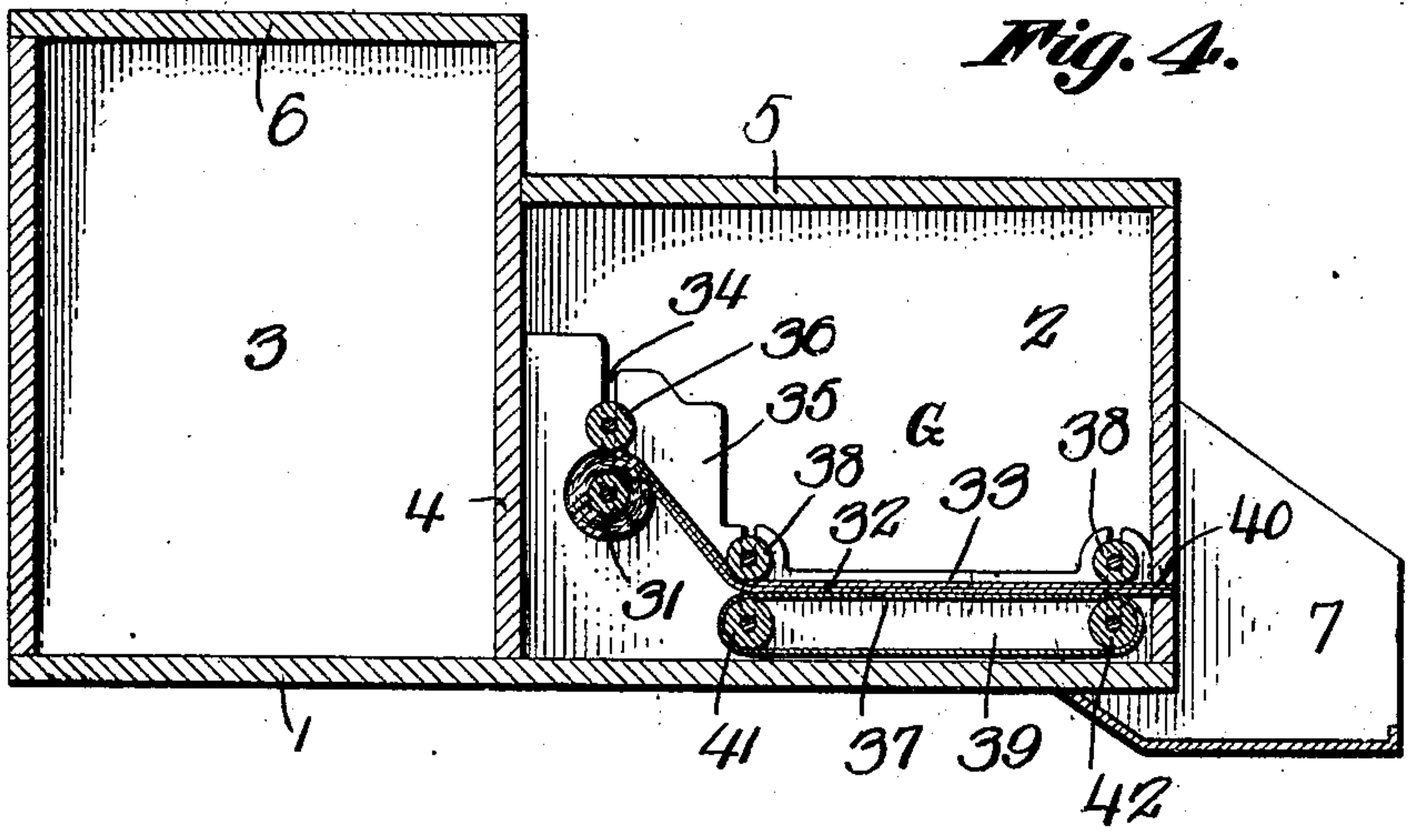
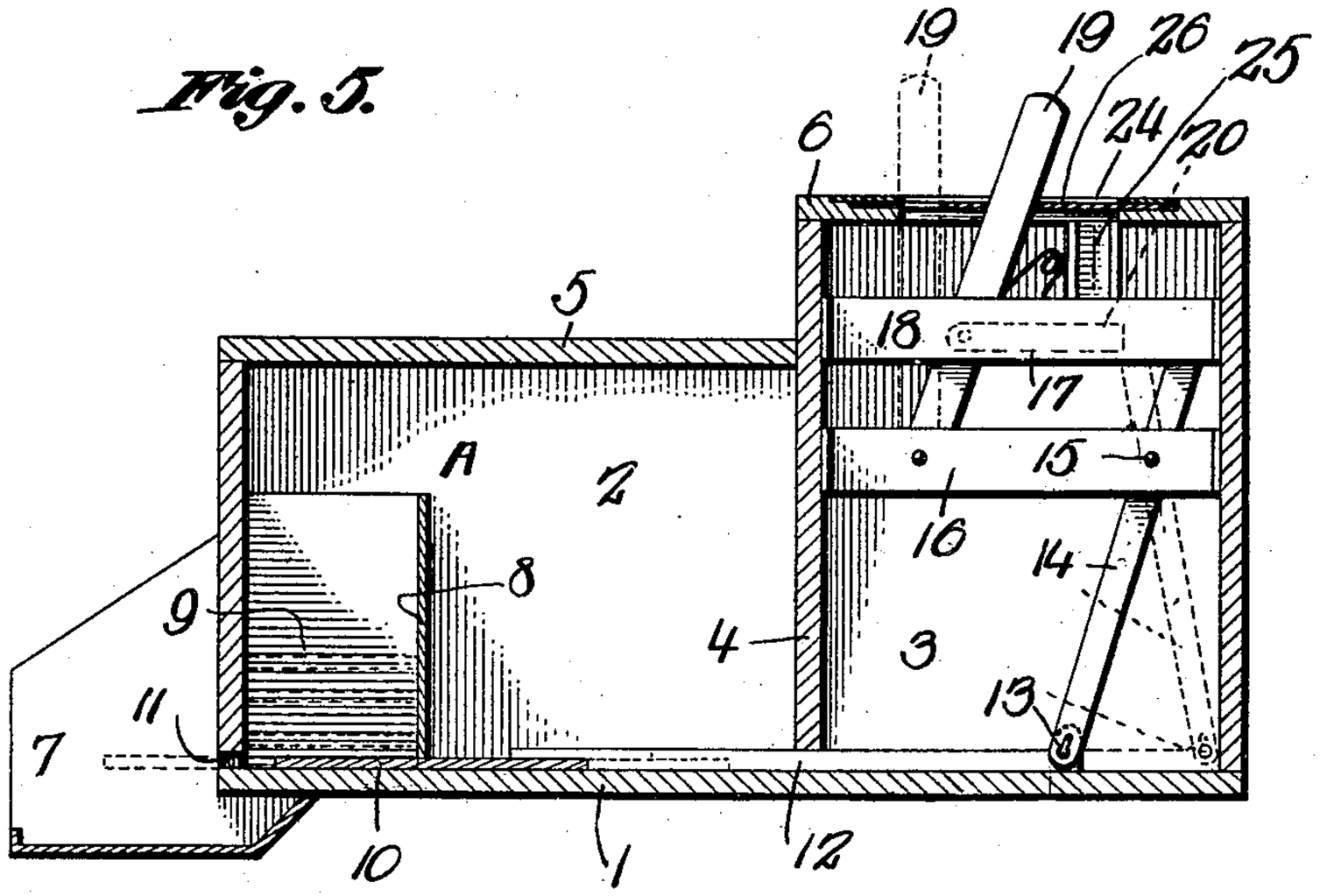



*Fig. 5.*

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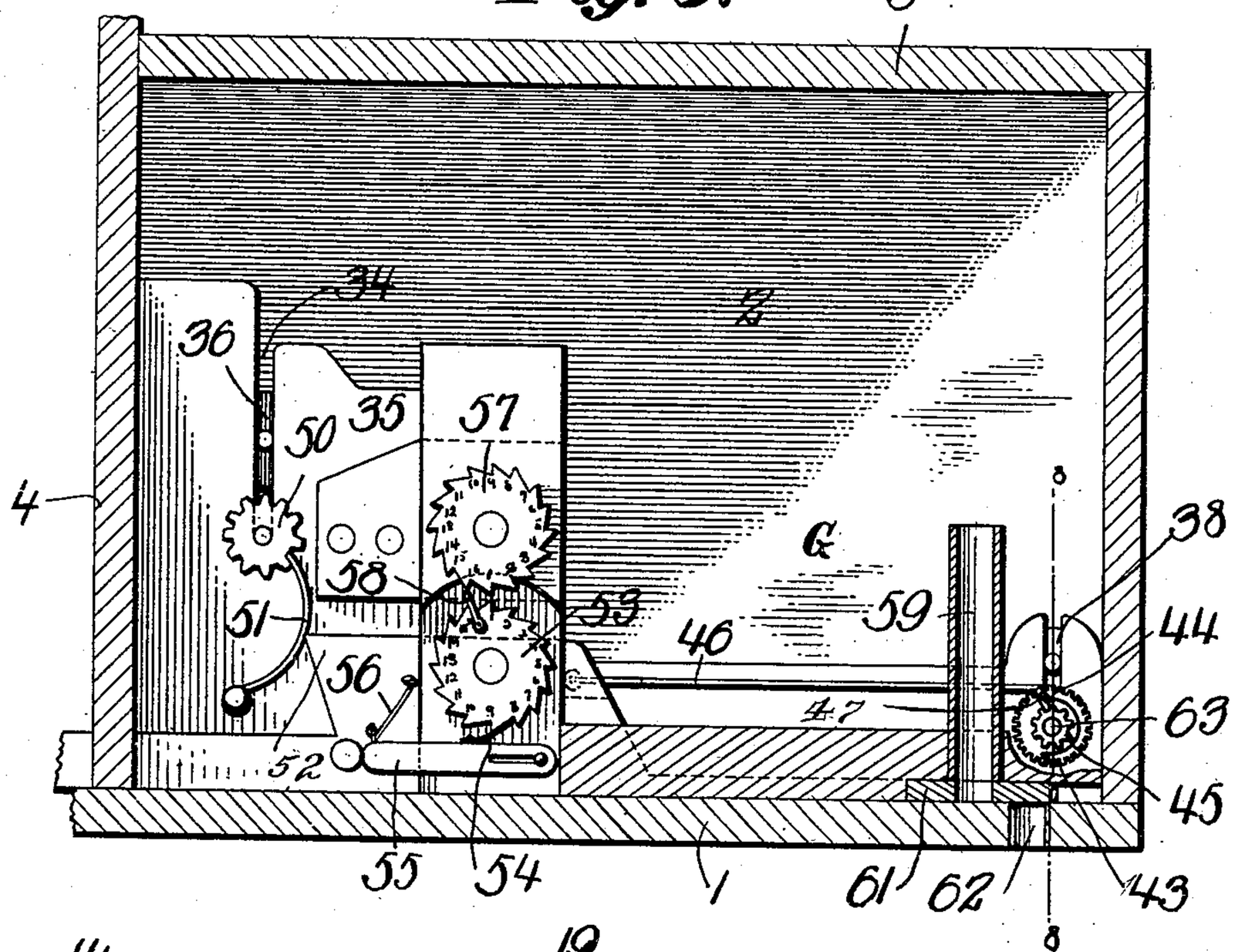
4 SHEETS—SHEET 4.

Fig. 6.



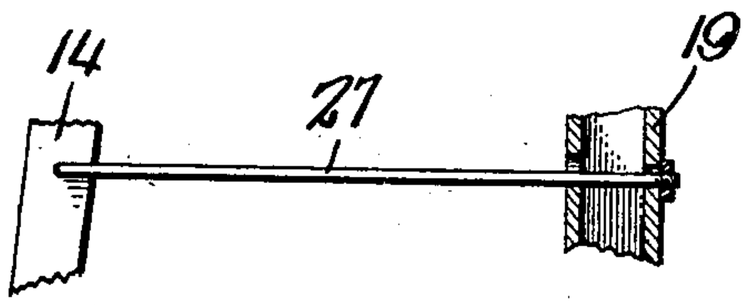




Fig. 7.

Fig. 8.

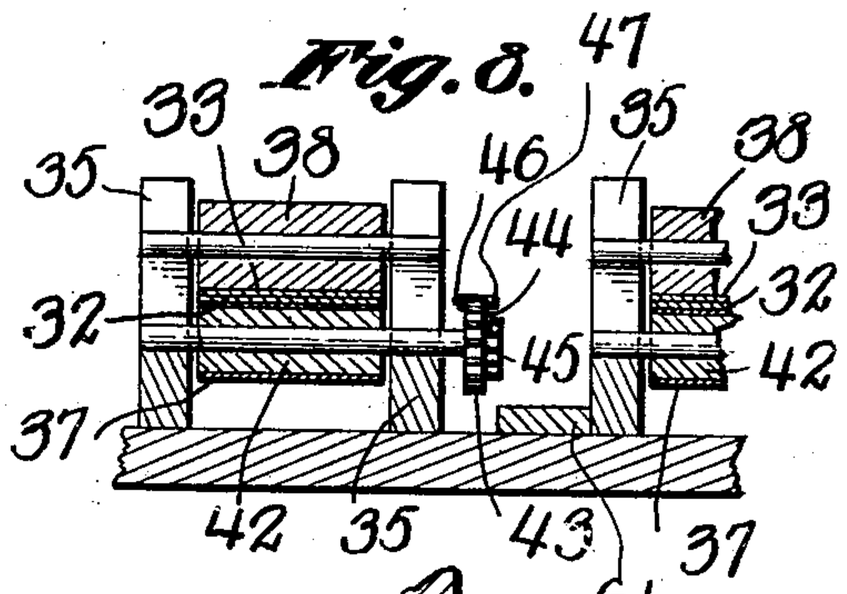
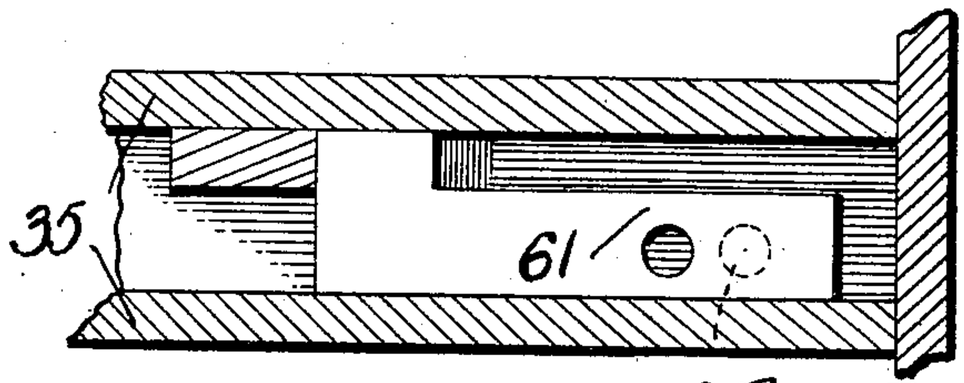



Fig. 9.




Witnesses

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# UNITED STATES PATENT OFFICE.

IRVIN F. HARRIS, OF FORRESTON, TEXAS.

## VENDING APPARATUS.

969,619. Specification of Letters Patent. Patented Sept. 6, 1910.

Application filed November 27, 1909. Serial No. 530,162.

*To all whom it may concern:*

Be it known that I, IRVIN F. HARRIS, a citizen of the United States, residing at Forreston, in the county of Ellis and State of Texas, have invented new and useful Improvements in Vending Apparatus, of which the following is a specification.

This invention relates to an apparatus for vending postage stamps, postal cards, postage stamp books and the like.

One object of the invention is to provide a simple, reliable and efficient construction of machine for vending these several articles, and in which the vending devices are in whole or part, of the same general character, whereby the machine may be produced and installed at a comparatively low cost.

Still another object of the invention is to provide a stamp vending device whereby a strip of stamps may be fed forward to project one or more stamps for detachment, and whereby the strip will be held from excess movement so as to prevent removal of more than the proper number of stamps for a prescribed coin.

With these and other objects in view, the invention consists of the features of construction, combination and arrangement of parts hereinafter fully described and claimed, reference being had to the accompany drawings, in which:—

Figure 1 is a top plan view of the apparatus with the front wall of the vending compartment removed and parts shown in section. Fig. 2 is a vertical transverse section on line 2—2 of Fig. 1. Figs. 2, 4 and 5 are vertical front to rear sections on lines 3—3, 4—4 and 5—5 of Fig. 1. Figs. 6, 7, 8 and 9 are detail views of features of construction.

The apparatus embodies a casing 1 having a front compartment 2 for the vending devices and goods to be vended, and a rear compartment 3 for the coin-controlled means for operating the vending devices. The two compartments are separated by a vertical division wall or partition 4 and are closed at their tops by covers 5 and 6 respectively which may be secured in position in any suitable manner. A tray 7 is provided at the lower front portion of the compartment 2, for a purpose hereinafter described.

In the present instance, I have illustrated a machine for vending stamp books of the value of twenty-five cents, postal cards in packs of five at the rate of five cents per pack, and different quantities of stamps of the same or different denominations in sheet or strip form, but this method of dispensation may vary in practice as occasion may require.

The vending devices are arranged in regular order in the compartment 2 from one side to the other of the machine and, for convenience of description, are respectively denoted A, B, C, D, E, F and G. The vending devices A and B are generally similar in construction and are respectively designed for vending stamp books and packs of postal cards, while the vending devices C to G inclusive, which are similar in construction to each other, but vary in construction from the first named vending devices, are designed for vending stamps in sheet or strip form. Coin-controlled means are provided for independently governing and actuating each of the vending devices and are generally similar in construction except where modified to meet special conditions, as hereinafter described. The corresponding parts of the vending and coin-controlled actuating devices are hereinafter denoted by similar reference characters.

The vending device A comprises an open topped receptacle 8 of proper size to receive a stack of stamp books 9. This receptacle is elevated slightly above the bottom of the compartment 2 to provide an intervening space for the reception and movement of a reciprocating slide or ejector 10, which is shown in projected position in Fig. 5. The aforesaid space and the ejector conform in dimensions with the individual stamp books, the bottom one of which rests in practice, when the slide is in its normal retracted position, upon the bottom of the compartment. A discharge slot or outlet 11 is formed in the front wall of the compartment in line with the space, so that upon its forward or operative movement the slide will engage and push the lowermost book through said outlet into the receiving tray 7, from which it may be removed by the purchaser.

The slide 10 is connected with a bar 12 which extends rearwardly through the wall 4 into the compartment 3 and is slidably and pivotally connected at its rear end, as at 13, to the lower end of a lever 14, which is pivotally mounted for swinging movement, as at 15 upon a bar or strip 16 mount-

ed in said compartment. Above said bar or strip 16 is a second strip 17 upon which is pivotally mounted, as at 18, an operating lever 19 which carries a pivoted arm 20 normally out of engagement with the upper end of the lever 14 but adapted to be engaged therewith by an interposed coin on the operative movement of the lever 19 to transmit operative motion to the lever 14, whereby forward motion will be transmitted to the bar 12. The arm 20 rests loosely upon the strip 17, which has a tubular guide portion 21 of rectangular form in cross section, said guide portion having a bottom coin retaining wall 22 and a coin discharge slot 23 into which the upper end of the lever 14 projects. In the top wall or cover of the compartment 3 is formed a coin inlet slot 24 which communicates with the guide portion 21 through a coin guide tube 25. The slot 24 is normally open and adapted to be closed by a sliding cut off or cover plate 26 through which the upper end of the operating lever 19 projects exteriorly, so that when said lever is in retracted position, a coin may be inserted into the slot, but when said lever is moved to operate the transmission lever 14 the plate 26 will move therewith and close the slot against the introduction of a coin until the operating lever is again retracted.

The normal position of the parts will be understood by reference to Fig. 3, from which it will be seen that the lever 14 and arm 20 are normally spaced apart so that a coin entering the guide portion 21 through the tube 25 will form a connection between them, so that upon the operative or rearward movement of the lever 19 the lever 14 will be actuated to impart a forward sliding movement to the bar 12. A link 27 is pivotally connected with the upper end of the lever 14 and loosely embraces the lower end of the lever 19, so as to permit the lever 19 to be moved rearwardly without affecting the lever 14 unless a proper coin is inserted, while at the same time forming a connection by which on the retraction of the lever 19 a corresponding motion will be imparted to the lever 14. On the operative movement of the parts the coin forms a connecting medium until the lever 14 has moved rearwardly to a vertical position, when the coin will drop down through the slot 23 into an underlying inclined chute 28.

In practice, a single coin receiving chute may be provided for all of the vending devices and lead to a slot 29 in the wall 4, through which slot the coins will discharge by gravity into a suitable receptacle 30 secured upon said wall within the compartment 2. The vending device B is similar in all respects in construction to the vending device A above described, except that the receptacle 8′ is made larger to receive the postal cards which are arranged therein in packs of five suitably bound together and designed to be sold at the rate of five cents per pack, while the reciprocating ejector slide 10′ of said vending device B is of proper size to eject the packs. It will be understood, of course, that the coin slots and mechanisms of these respective vending devices are designed to receive and to be controlled by the respective insertion of a twenty-five cent piece and a five cent piece.

Each of the vending devices C, D, F and G comprises a rear winding roll 31 on which a sheet or strip of stamps 32 is wound with a protective sheet or strip 33 of oiled paper or the like covering the gummed faces of the stamps. The said roll 31 is provided with spindles journaled in open bearing slots 34 in bearing brackets 35, and also journaled in said slots is an upper pressure roll 36 which serves to hold the strip of stamps in compact form. From the roll 31 the free end of the sheet or strip extends forwardly between the upper stretch of a horizontal feed belt 37 and front and rear superposed guide rolls 38 journaled in arms 39 extending from said brackets, the extremity of the strip being arranged for discharge through a slot 40 in the front wall of the compartment 2. The belt 37 passes around front and rear rolls 41 and 42, and on one end of the roll 42 is loosely mounted a gear wheel 43 carrying a spring actuated pawl or dog 44 adapted to engage a ratchet wheel 45 fixed to said roll. A feed bar or rod 46 extends longitudinally in parallel relation to the feed belt and is provided at its forward end with a finger 47 to engage the teeth of the wheel 43. The rear end of the rod is pivotally connected with a sliding bar 48 which is connected by a link 49 with the lower end of the transmission lever 14 of the associated coin-controlled actuating mechanism. When the bar 48 is moved forwardly the finger 47 of the rod 46 engages and imparts sufficient motion through the gear wheel and clutch mechanism to the feed belt to project the free end of the strip of stamps a prescribed distance outward through the slot 40. Upon the return movement of the parts the gear wheel 43 turns backwardly, but the dog slides over the teeth of the ratchet wheel and prevents retrograde movement of the feed belt. It will thus be understood that the stamp or stamps projected by the forward movement of the feed devices may be severed from the sheet or strip in a convenient manner by the purchaser, the usual separating perforations being provided between the stamps of the sheet or strip to facilitate this operation.

It is contemplated in the present instance to have the stamps of the sheet controlled by the vending device C arranged in transverse rows of ten stamps each, those of the sheet

controlled by the vending device B arranged in transverse rows of five stamps each, those of the sheet or strip controlled by the vending device E in transverse rows of two stamps each, those of the strip controlled by the vending device F also arranged in transverse rows of two stamps each, while the strip controlled by the vending device G will be composed of a longitudinal series of single stamps projected one at a time by the operation thereof. The stamps of the sheets controlled by the vending devices C, D and E may be of the denomination of two cents, while those of the strips controlled by the vending devices F and G may be of the denomination of one cent. For convenience, the coin-controlled devices of the vending devices C and D are designed to be operated upon the deposit of a twenty-five cent piece, those of the vending devices E and F upon the deposit of a five-cent piece, while that of the vending device G is designed to be operated upon the deposit of a penny or one cent piece. In carrying out this method of operation, I also provide means by which the proper amount of change between the value of the inserted coin and the value of the ejected stamps will be discharged with the stamps when the vending devices B, C, D, E and F are operated.

It will thus be apparent from the foregoing description that when the coin controlled mechanism of the vending device C, for instance, is operated the feed belt will move the sheet of stamps forward to project one transverse row of stamps through the slot 40 until the line of perforations between said row and the succeeding row are in line with the front wall of the casing, whereupon the operator may readily and conveniently detach the foremost transverse row of stamps. In order to prevent the strip or sheet from being pulled forward for the surreptitious extraction of more than one row, a locking device is provided which is operative immediately upon the retraction of the bar 48 to lock the roll 31 against movement. This locking device comprises a gear 50 fixed on one end of said roll 31 and adapted to be engaged by the free end of a concavo-convex leaf spring 51, fixed at its opposite end to the adjacent bracket 35. The convex surface of this spring is engaged by a projection 52 on the bar 48 when the parts are retracted to hold the spring in locking engagement. On the forward movement of the bar 48, however, the spring is free to bend or yield under the movement of the gear 50, allowing the same to turn in a forward direction for the feed of the stamp sheet. The spring 51 thus serves the function of a spring locking dog, which is rigidly held against movement by the projection 52 when the bar is retracted to prevent any possibility of the free end of the strip or sheet from being grasped and drawn forward through the slot 40.

The registering device employed in connection with each vending device comprises a ratchet wheel 53 on one end of the roll 38, the face of which ratchet wheel may bear any suitable arrangement of numerals for units. This ratchet wheel is engaged by a spring pawl 54 carried by a reciprocating operating member 55 slidably and pivotally connected at one end with a fixed portion of the casing and yieldably connected at its opposite end to the bar 48 by a spring 56. When the bar 48 is moved forwardly for a feed action, the pawl 54 on such forward movement turns the ratchet wheel 53 rearwardly the distance of a single tooth and on its reverse movement by the action of the spring 56 the pawl slides over the next adjacent tooth and then engages behind the same ready for the succeeding operation. Journaled on a fixed portion of the casing above the wheel 53 is another ratchet wheel 57, the teeth of which are adapted to be engaged by a radial arm or projection 58 on the wheel 53 to turn said wheel 57 the distance of one tooth on each complete revolution of said wheel 53. The wheel 57 may bear upon its face suitable numerals denoting tens, so that the registering apparatus will indicate within reasonable limits the number of times the vending device is operated and consequently the number of stamps ejected thereby.

As on each operation of the vending device B a twenty-five cent piece must be deposited for a twenty cent purchase, it is evident that a nickel in change must be given. In order to effect this result, a coin holding tube 59 is provided adjacent the ratchet wheel 43 and is supported by a bar or block 60. This tube is designed to hold a certain number of nickels and communicates at its lower end with a space or passage 61 formed beneath the forward end of said block 60. In the bottom wall of the casing at a point in advance of said tube is a coin discharge outlet 62 communicating with the tray 7 and of sufficient size for the passage of a nickel. A discharge slide 63 is arranged for reciprocation in the space 61 and is provided with an opening 64 to register with the tube and the outlet 62. The said opening 64 is of a diameter and depth to receive a single nickel, so that when it is in receiving position, as shown in Fig. 3, a nickel from the stack in the tube will drop therein, whereby upon the forward movement of the discharge slide the coin will be carried to and discharged through the outlet 62. The slide 63 preferably forms an integral part of the bar 48 and extends laterally therefrom so that the change making device, which is in effect an auxiliary vending device will be actuated with the vending device proper.

Each of the other vending devices D, E and F is provided with a similar construction of auxiliary vending or change making device, differing only in the size of the coin holding tube and in the size and depth of the opening in the coin discharging slide and the coin outlet to suit the denomination and number of coins to be held and discharged. For instance, as the vending device D requires the insertion of a twenty-five cent piece and vends 5 two cent stamps valued at ten cents, it is evident that the change making device associated therewith should be adapted for the discharge of 3 nickels on each operation thereof. The vending device E, on the other hand requires the deposit of a five cent piece for which 2 two cent stamps and a penny in change are vended, while the discharge device F requires the deposit of a five cent piece for which 2 one cent stamps and 3 pennies in change are vended. No change making device is necessary for use in connection with the vending device G, as it simply vends a one cent stamp for each penny deposited.

It will be apparent from the foregoing description that the postal cards, stamp books and coins, which are bodily discharged, are received in the tray 7, from which they may be removed by the purchaser, while the stamps discharged by the other vending devices must be physically separated from their sheets or strips. It will accordingly be seen that the invention provides an apparatus whose principles of construction and operation may be employed for vending various articles of the character described in different forms, and it will be understood that the arrangement of the stamp vending devices may be varied and that they may be employed for vending different denominations of stamps or variable numbers of stamps of the same denomination, as circumstances or demands of the public may require. In practice the rear portion of the casing preferably extends, as shown, above the front portion thereof, so that the coin inlet slots may be arranged in the front wall of the upward extension of the rear compartment for greater convenience. While the preferred embodiment of the invention is as herein disclosed, it will be understood that modifications and the use of equivalents may be adopted within the scope of the appended claims without departing from or sacrificing any of the advantages of the invention.

I claim:—

1. A vending apparatus including a feeding means, pawl and ratchet mechanism for actuating the same, a reciprocating member for actuating said pawl and ratchet mechanism, a bar carrying said reciprocating member and provided with a projection, and a locking device for holding and releasing said feeding means, said device being controlled by said projection.

2. A vending apparatus embodying a feeding means including a shaft, a gear loose on the shaft, a ratchet wheel fixed to the shaft, a spring-actuated pawl carried by the gear and engaging said ratchet wheel, a reciprocating member having a projection to engage the teeth of the gear, a bar carrying said reciprocating member, means for reciprocating said bar, a locking device for holding and releasing said feeding means, and a projection upon the bar controlling said locking device.

3. A vending apparatus embodying a feeding means including a shaft, a gear loose on the shaft, a ratchet wheel fixed to the shaft, a spring-actuated pawl carried by the gear and engaging said ratchet wheel, a reciprocating member having a projection to engage the teeth of the gear, a bar carrying said reciprocating member, means for reciprocating said bar, a locking gear fixed to one of the movable elements of the feeding means, a spring dog to engage and hold said gear and the feeding means from movement, and a projection upon said bar controlling said dog to hold said locking gear from movement or permit motion thereof.

In testimony whereof I affix my signature in presence of two witnesses.

IRVIN F. HARRIS.

Witnesses:
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E. R. BARROW.