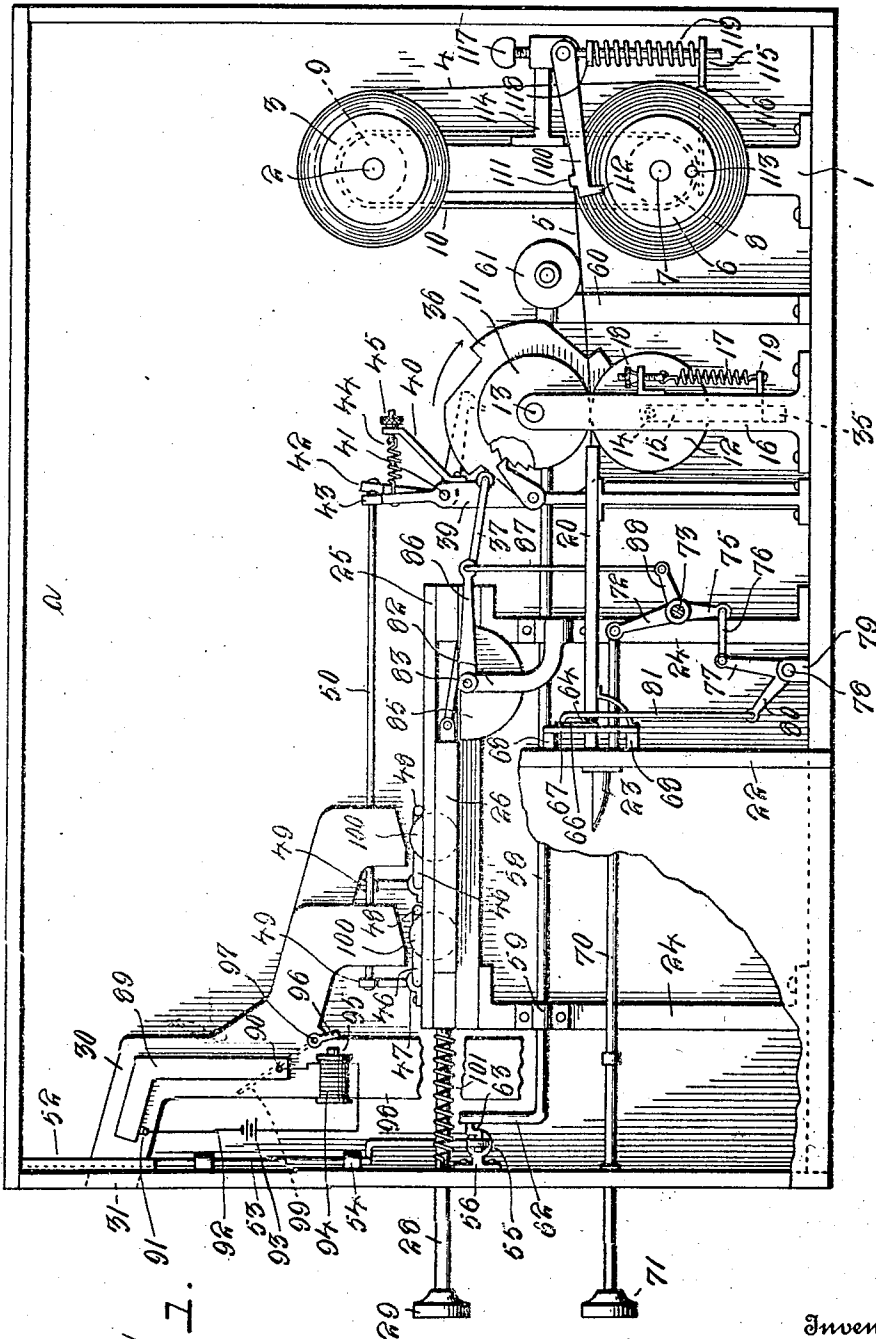


F. FANNING.
 VENDING MACHINE.
 APPLICATION FILED AUG. 15, 1911.

1,052,331.

Patented Feb. 4, 1913.

5 SHEETS—SHEET 1.



Witnesses

E. P. Ruppert.
 John H. Dwyer.

Fig. 1.

Inventor
 Fred Fanning

By Victor J. Evans

Attorney

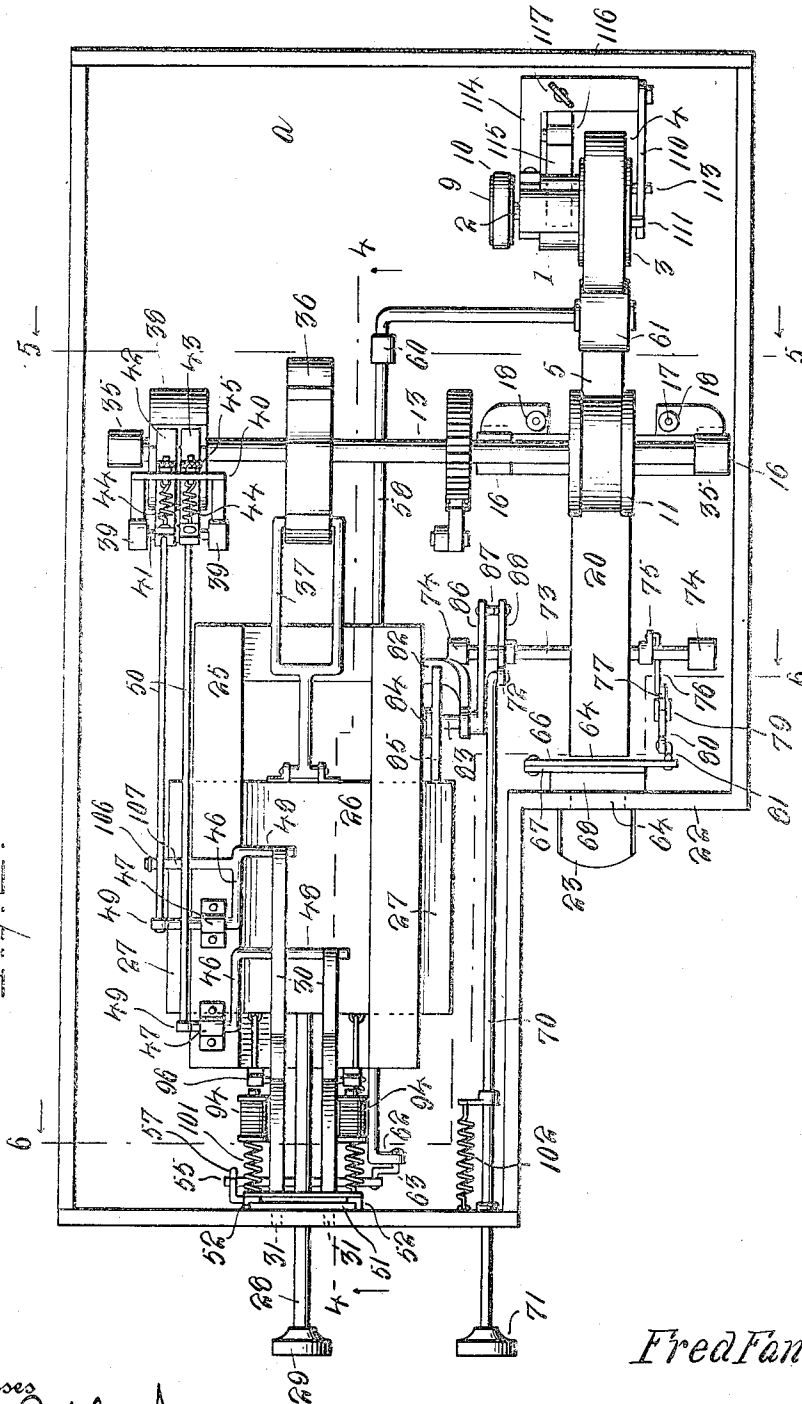
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Inventor
Fred Fanning

By Victor J. Evans
Attorney

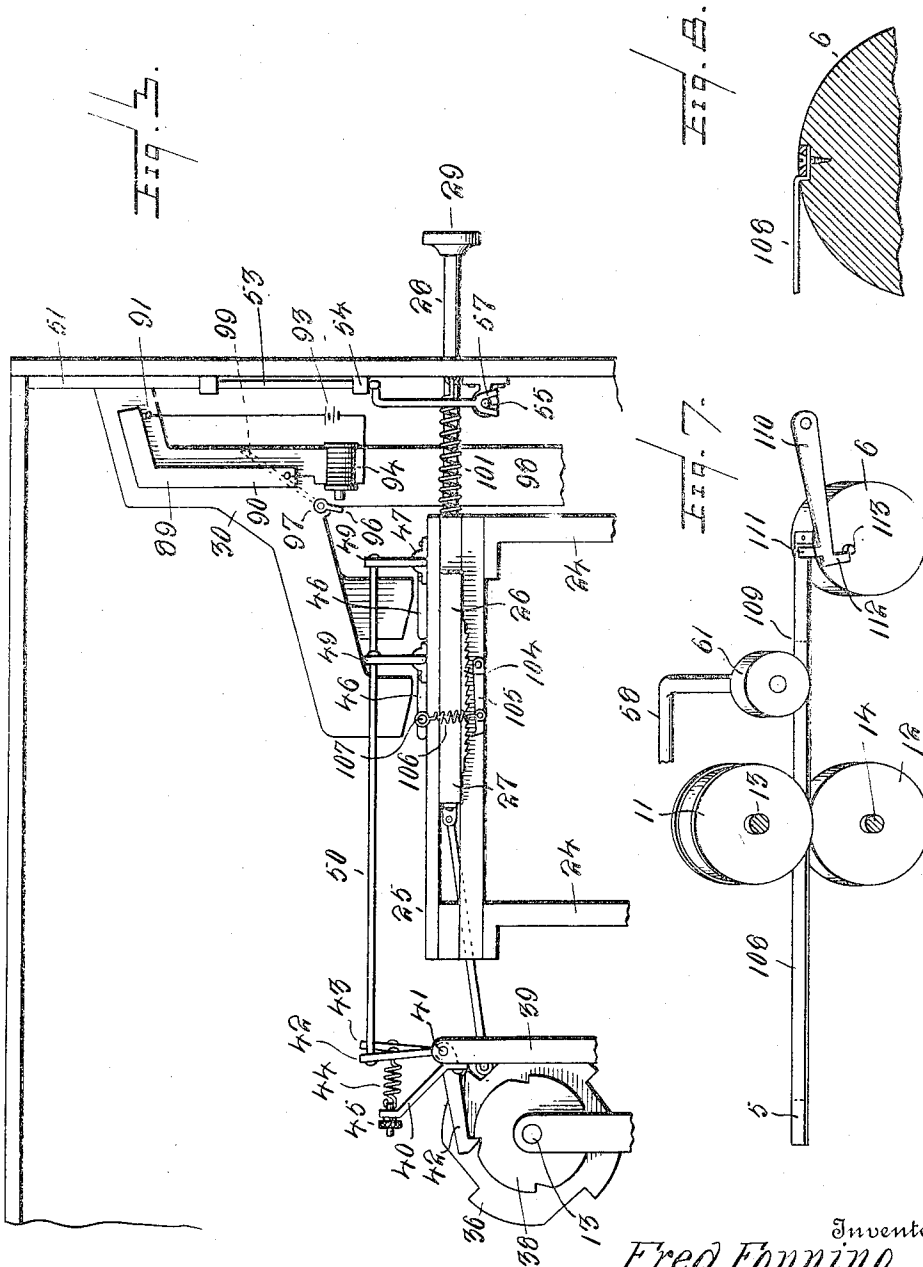
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5 SHEETS—SHEET 3.



Witnesses
 E. R. Ruppert.
 John A. Hargrave.

Inventor
 Fred Fanning
 By Victor J. Evans
 Attorney

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5 SHEETS-SHEET 4.

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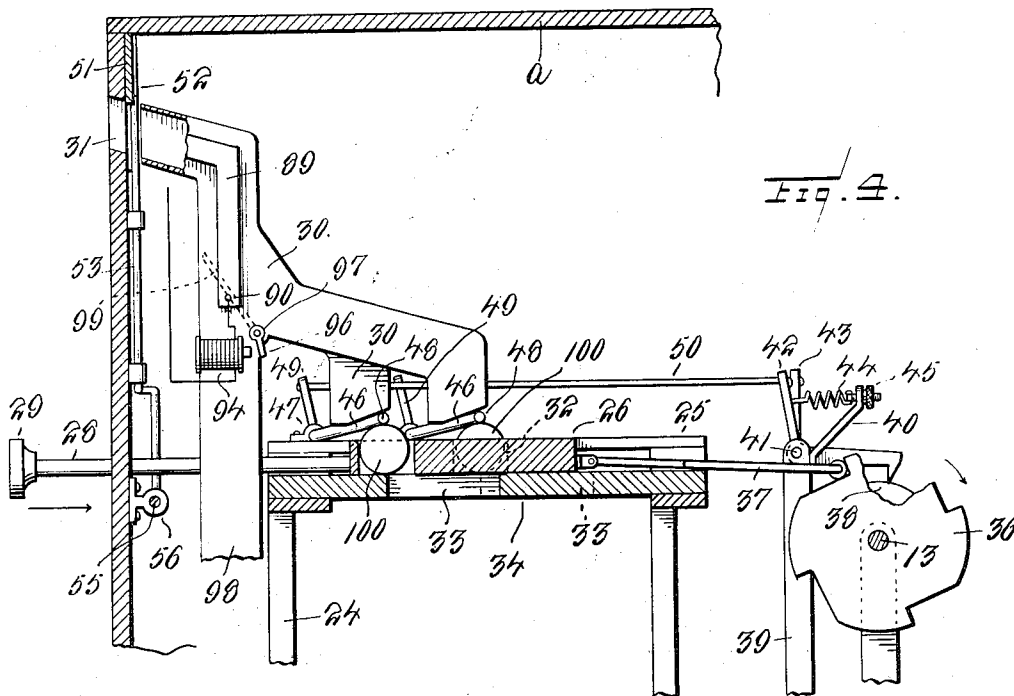


Fig. 4.

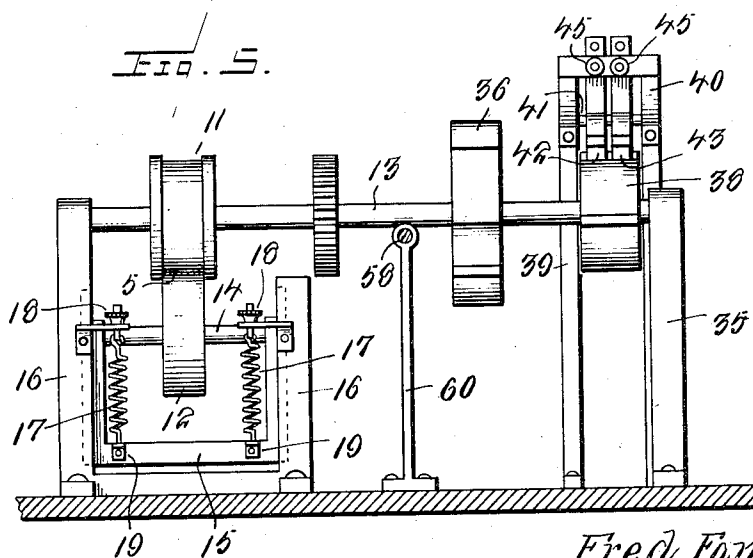


Fig. 5.

Inventor.

Fred Fanning

Witnesses

E. R. Ruppert.
J. M. Ruppert.

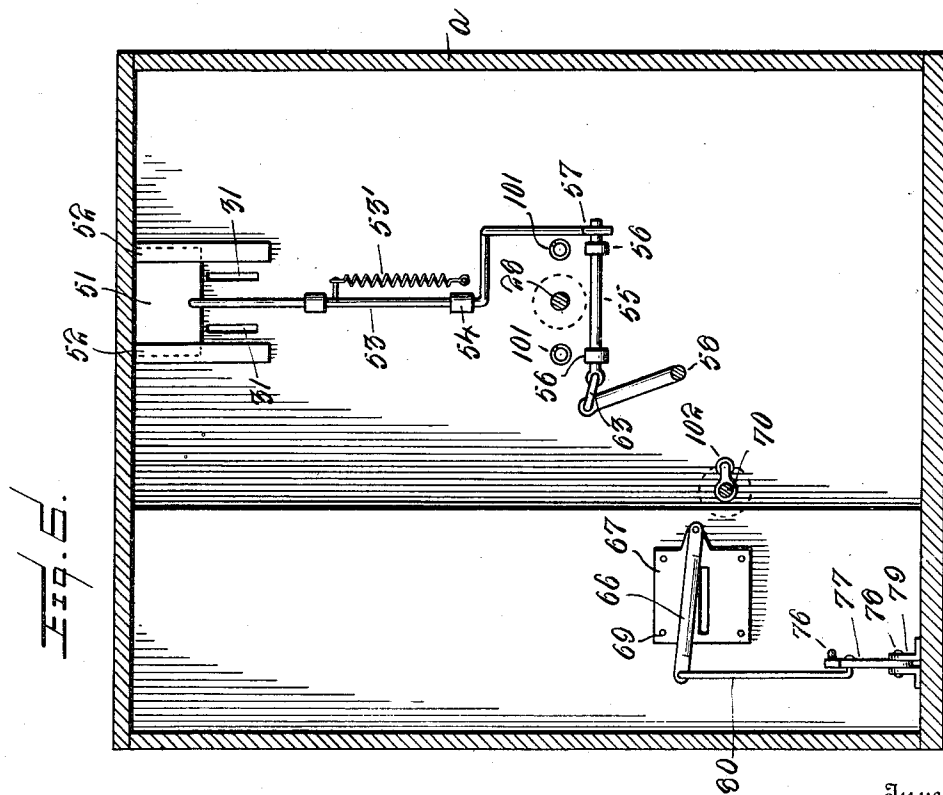
By Victor J. Evans

Attorney

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5 SHEETS—SHEET 5.



Inventor
Fred Fanning

Witnesses
E. R. Ruppert.
John W. W. W.

By Victor J. Evans
Attorney

UNITED STATES PATENT OFFICE.

FRED FANNING, OF WOODLAND, ILLINOIS.

VENDING-MACHINE.

1,052,331.

Specification of Letters Patent.

Patented Feb. 4, 1913.

Application filed August 15, 1911. Serial No. 644,077.

To all whom it may concern:

Be it known that I, FRED FANNING, a citizen of the United States, residing at Woodland, in the county of Iroquois and State of Illinois, have invented new and useful Improvements in Vending-Machines, of which the following is a specification.

The invention has for its general object an apparatus for vending postage stamps, tickets and the like.

Other objects will appear and be better understood from the following description taken in connection with the accompanying drawings, in which,

Figure 1 is a side elevation with parts of the interior mechanism and one side wall of the casing broken away. Fig. 2 is a plan with the top or cover of the casing removed. Fig. 3 is an enlarged detail of the coin controlled mechanism with the parts in one position. Fig. 4 is a view similar to Fig. 3 with the parts in another position. Fig. 5 is a transverse section on the line 5—5 of Fig. 2. Fig. 6 is a view similar to Fig. 5 but on the line 6—6 of Fig. 2. Fig. 7 is a detail perspective of the stamp feeding mechanism and a portion of the coin slot closer. Fig. 8 is a detail section of the stamp holder also showing the frangible strip.

The device is adapted for vending any material that may be coiled so as to form a roll and placed into a suitable casing, such as designated by *a*. To illustrate one embodiment of the invention, I show a roll made up of a strip 5 of two-cent postage stamps. The strip 5 is coiled onto a drum or roll 6 which is fast on a shaft 7 carried by the standard 1. Between the coils of the strip 5 is a strip 4 of nonadhesive paper, one end of which is attached to a drum 3 fast on a shaft 2 carried by the standard 1.

8 and 9 designate pulleys on the shafts 2 and 7, and 10 indicates a belt connecting the pulleys. The strip 5 is directed between feed rolls 11 and 12, the former of which is fast on the main shaft 13 and the latter arranged on a shaft 14 supported by a yoke 15 which slides in guides 16 as illustrated in detail in Fig. 5.

17 indicates springs connected to the yoke 15 and 18 indicates adjusting devices connected to the opposite ends of the springs, the adjusting devices being supported by arms 19 carried by the yoke 15. The function of the springs is to force the lower roll 14 upwardly, whereby, to cause the said rolls

11 and 12 to bind on the strip 5. The strip 5 is directed through a chute 20 which alines with an opening 21 shown in Fig. 6, in the front wall 22 of the casing.

23 indicates a cup or receptacle to receive the stamps after they have been severed from the strip 5 in a manner hereinafter described.

24 indicates standards which support a guide 25 in which slides a plunger 26 as clearly shown in Figs. 1 and 2. As shown in Fig. 2 the opposite side portions 27 of the plunger or coin carrier 26, extend beyond the sides of the guide 25. The purpose of this construction will hereinafter appear.

28 indicates the plunger or push rod which extends through the front wall of the casing and 29 the button at the outer end thereof.

30, 30 indicate the coin chutes, the upper ends of which aline with the coin receiving openings 31 shown in Fig. 6. The lower ends of the chutes overlie coin pockets 32 in the plunger or coin carrier 26, all of which is shown in Fig. 4.

33, 33 indicate coin passages in the bottom 34 of the guide. When the plunger or coin carrier is in its normal position, the coin pockets are out of alinement with the passages 33 but when the plunger is moved inwardly for a predetermined distance, the pockets will aline with the passages, whereby, the coins therein will drop into the space below the guide where a suitable receptacle (not shown) may be arranged to receive the coins.

35 indicates the uprights or standards for the shaft 13. As shown in Fig. 5 one of these standards or uprights forms one side of the guide 16 for the yoke 15.

Referring to Figs. 1, 2, and 5, 36 indicates a ratchet secured to the shaft 13 and 37 indicates a pawl pivotally connected to the plunger or coin carrier 26.

The locking mechanism will now be described. Referring to Figs. 2, 3, 4, and 5, 38 indicates a notched wheel on the shaft 13, 39 a pair of uprights and 40 a yoke connecting the upper ends of the uprights. 41 is a shaft in the upper end portions of the uprights 39, and 42 and 43 a pair of angular-shaped dogs connected to the shaft so as to engage the notched wheel 38. 44, 44 indicate springs connecting the dogs with tensioned devices 45 carried by the yoke 40 and holding the engaging ends of the dogs in contact with the toothed wheel. 46, 46 indicate a pair of

crank arms which have bearings 47 on the guide 25. The horizontal portions 48 of these crank arms extend transversely of the inner ends of the coin pockets 32 when the plunger or coin carrier is in its normal position. The vertical portions 49 of the crank arms are connected to the dogs 42 and 43 by connecting rods 50, 50' all of which are shown in Figs. 1 to 4 inclusive.

The coin slot sealing means will now be described. 51 indicates the slide arranged in guides 52 on the interior of the front wall of the casing *a*. 53 indicates a guide bar connected to the slide 51 and 53' indicates a spring connected to the guide bar and to the front wall of the casing *a* and serving to move the slide downwardly and over the coin slots 51. 54 indicates a bearing for the guide rod carried by the front wall of the casing *a*, and 55 indicates a latch bar sliding in guides 56 and adapted to interlock with the lower end of the guide bar 52, the parts being constructed in any preferred manner to effect this interlocking engagement, such as by bifurcating the lower end of the guide bar 52, as shown at 57 in Fig. 3. 58 indicates a rock shaft suitably supported such as by bearings 59, in the uprights 24 and also in an upright 60. One end portion of the rock shaft is provided with a weighted roll 61, the said end of the rock shaft being adapted in any preferred manner to enable this roll to be supported horizontally at any suitable point on the strip 5 of stamps. The opposite end portion of the rock shaft is adapted in any preferred manner to be connected to the latch bolt 55 such as by bending the said end portion, as shown at 62, so as to provide a crank having a link connection 63 with the latch bolt 55.

The cutting mechanism will now be described. Referring to Fig. 1 it will be seen that the stamp chute 20 has, at a point adjacent to the front wall 22 of the casing, a transverse recess or opening 64 adapted to permit the passage therethrough of the knife 66, best shown in Fig. 6. The knife 66 is pivoted at one end to a plate 67 which extends through the recess 64 and has an opening to aline therewith, the side of this opening cooperating with the knife to provide a shear. 68 indicates the supports for the plate 67 which are herein shown as connected to the latter and to the wall 22 and may be pins as shown at 67. 70 indicates a push rod extending through the front wall of the casing and adjacent to the plunger rod 28 and having at its outer end a button 71. The push rod is connected at its inner end to a rock arm 72, carried by a rock shaft 73 having bearings in the upper ends of uprights 74 shown in plane in Fig. 2. 75 indicates a second rock shaft and 76 a link which connects the rock shaft to one arm 77 of a bell crank lever pivoted as at 78,

in a bracket 79. 80 indicates the other arm of the bell crank lever and 81 a connecting rod which connects the said arm 80 with the free end of the knife 66, as shown in Figs. 1 and 6.

The means for locking the cutting mechanism against movement during the inward movement of the coin carrier and before the stamp or material to be vended, has been fully projected will now be described. Referring to Fig. 1, 82 indicates a bracket suitably supported such as by one of the uprights 24 and 83 indicates a shaft journaled in the bracket 82 and also in a bearing 84 on the guide 25. 85 indicates a locking member secured to the shaft 83 and adapted to turn in the space beyond the inner end of the plunger or carrier when the same is in normal position as shown in Figs. 1 and 2, but to abut against one of the extending side portions 27 of the plunger or coin carrier when the latter is moved inwardly. 86 indicates an arm secured on the shaft 83 and 87 a link or connecting rod which connects the free end of the arm 86 with a rock arm 88 on the shaft 73.

The means for deflecting counterfeit coins made up of magnetic material, will now be described. Referring to Figs. 1, 3, 4, and 9, 89 indicates a permanent magnet herein shown as a resilient metallic strip arranged in an opening in each of the coin chutes 30. Each strip is fixed at one end as shown at 90, and its opposite end is normally spaced from a contact block 91 which forms one terminal of an electric circuit 92 which extends from any suitable source of electric energy, such as a battery of cells 93. 94 indicates a magnetic coil connected in the circuit 92 and 95 the soft core of this coil. 96 indicates the armature and 97 the armature shaft which extends through the coin chute 30. Preference being given to a structure wherein the coil 94 and its armature are located exteriorly of each chute 30, as shown in Figs. 1 to 4 inclusive. Referring to the last named figures it will be seen that each coin chute has an extension 98 located between the guide 25 and front end wall of the casing 5. This extension 98 communicates with the interior of the chute similarly to the portion of each chute overlying the coin pockets but a means is provided for governing the passage through the extension 98, such means being herein shown as a deflector 99 secured to the armature shaft 97 and so positioned thereon as to close the upper or entrance end of the extension 98 when the armature 96 is not attracted by the core 95. In this position the deflector will not operate to prevent a coin passing through the chute and into the coin pocket underlying the chute but will prevent the last-named passage of the coin in the event of the core attracting its arma-

ture so as to move the deflector plate across such passage. This movement of the deflector plate, however, will permit of the coin's passing into the extension 98, all of which will more fully hereinafter appear.

The operation of the device thus far described is as follows: Assuming the parts to be positioned as shown in Fig. 1 and the coins 100 out of the pockets 32. It will now be seen that the vending mechanism will not operate, since the plunger or coin carrier is locked against inward movement. It will be further observed when the parts are so positioned, that the knife may be operated by pushing inwardly on the button 71 but will fail to cut the strip, since the forward end of the latter will, when the parts are positioned as shown, be at the inner side of the recess 64 of the chute. When the coins 100 are inserted through the coin receiving openings 31, the said coins will move through the chutes and onto the deflectors 99 then through the lower ends of the chutes and into the coin pockets 32 as shown in Figs. 1 and 4. To operate the machine, the button 29 is pressed inwardly. This will have the effect of moving the plunger inwardly and, since the upper segments of the coins 100 project above the upper surface of the plunger and further, since the portions 48 of the crank arms 46 extend transversely of the pockets, it will be seen that continued inward movement of the plunger will first cause the coins to cam the crank arms so that the vertical portions 49 thereof will rock toward the front wall of the casing. This will have the effect of retracting the connecting rods 50 and rocking the engaging ends of the dogs from the notches of the wheel 38. Inasmuch as the shaft 13 cannot be turned while either dog is in engagement with the toothed wheel 38, it will be manifest that two coins must be inserted into the machine in order to unlock the shaft 13. The notches in the wheel 38 are not very deep, therefore, it will only be necessary to slightly rock the dogs to unlock the shaft 13. Therefore, the shaft will be unlocked before the highest points in the coins pass underneath the portions 48 of the crank arms. This will enable the pawl 37 to engage the ratchet wheel 36 and begin turning the shaft before the coins fall through the passages 33 so that when the coins have passed through the said passages and the force which rocks the dogs removed, the latter when they are rocked by the action of their springs 44, will contact with a portion of the wheel 38 between the recesses thereof, thus permitting further inward movement of the plunger and rotation of the shaft 13 until the wheel is turned sufficiently to bring the succeeding notch thereof in position to receive the dogs, which will happen when the plunger is at the limit of

its inward movement or substantially so. It may here be stated that the throw of the shaft 13 will correspond to the length of the material to be vended. In the present connection the length of such throw is approximately the same as the length of the ordinary postage stamp. It will be manifest though, that if tickets or other articles greater or less in length than a postage stamp are to be vended, the length of the movement of the parts will be proportioned accordingly. After the shaft 13 is unlocked and inward movement of the plunger is continued, the pawl 37, by engaging with the adjacent tooth on the ratchet 36, will turn the shaft 13. This will have the effect of turning the feed roll 11 and since the rolls 11 and 12 frictionally bind on the strip 5, it will be seen that the turning movement of the roll will also unwind the strip from the roll 6 and turn the roll 12, whereby, a section of the unwound portion of the strip will be advanced through the chute 20 and into the path of movement of the knife 56. It will be observed that as the strip is unwound from the roll 6, the latter together with the roll 3 will turn through the belt connection 10 so that a portion of the non-adhesive strip 4 will be unwound from the roll 6 and wound on to the roll 3. After the plunger is moved inwardly as far as it will go and released, it is retracted and restored to normal position by means of the springs 101 which are connected at their opposite ends to the front wall of the casing and adjacent end of the plunger as shown in Fig. 2. When the plunger is restored to normal position the button 71 is pressed inwardly. This will have the effect of rocking the rock arm 72 to turn the shaft 73, whereby, the knife 66 will be forced downwardly through the link and lever connection with the rock arm 75, thus the postage stamp will be severed from the strip, and the said stamp obtained by the vendee's pulling the same through the opening 21. As before stated, it will be impossible to sever the stamp from the strip until the plunger is returned to normal position, since it will be seen that the lower face of the plunger will be over the straight side of the lock 85 at the beginning of its inward movement and will so remain throughout the entire inward movement thereof. When the force is removed from the button 71, the push rod is returned to its normal position by a spring 102 connected to the push rod and front end of the casing, as shown in Fig. 2.

In order to insure delivery of the stamp to the vendee after the coins have entered the pockets and the shaft 13 unlocked, the following construction is employed: Referring to Fig. 3, 104 indicates a rack-bar preferably connected to the extended side

portion 27 opposite to the side which forms an abutment for the lock 85. 105 indicates a locking dog and 106 a spring which connects the locking dog with an extension 107 on one of the crank arms 46 so that when the portion 48 of the latter is rocked upwardly by the coin passing thereunder, the dog 105 will engage with the teeth of the rack 104. The teeth of the said rack are so constructed as to permit the dog to override the same during the inward movement of the plunger but to interlock with and prevent outward movement of the plunger in the event of the vendee's finger slipping or otherwise becoming accidentally disengaged from the button 29. After the shaft 13 begins to rotate and the coins fall through the passages 33, the dog will still engage with the teeth of the rack 104, since the engaging ends of the dogs 42 will bear on a portion of the wheel between the recesses thereof, hence the crank arms will be held elevated sufficiently far to hold the dog 105 into engagement with the teeth as before stated. When the dogs 42 engage with the succeeding notch, and the crank arms are restored to their normal positions as previously described, the dog 105 will move from engagement with the teeth of the rack bar 104.

Referring to Fig. 7 the inner end of the strip 5 of stamps is connected to one end of a frangible strip 108, preferably of weak paper and connected at one end to the roll 6, as shown in Figs. 7 and 8. The length of this strip corresponds approximately to the distance between the stamp delivery opening 21 and the roll 6 minus the length of one stamp so that when the last stamp on the strip is projected through the opening, the connection between the strip 108 and the roll will be destroyed. This will be more readily understood by an inspection of Fig. 7 wherein it will be seen that in order to provide for the rupturing or breaking of the strip 108 the latter, at a point adjacent to its connection with the roll 6, is scored as at 109, therefore, owing to the scoring 109 and the weak nature of the strip it will be seen that as the feed rolls 11 and 12 turn to project the stamp through the delivery opening 21 the strip 108 will tear at a point between the feed rolls and the roll 6. Since the weighted roll 61 bears on that portion of the strip between the rolls 11 and 12 and roll 6, it will be seen that when the support, namely, the strip 108 for the weighted roll 61, is removed by the strip's breaking, the latter will turn downwardly by its own weight. This will have the effect of turning the rock shaft 58 and retracting the latch bolt, thus enabling the spring 53 to move the guide arm downwardly, whereby, the slide 105 will seal the openings 31.

In order to hold the roll 6 stationary during the projection of the last stamp, whereby, to further insure the breaking of the strip 108, I make use of a suitable lock which may be constructed in any preferred manner such as by providing a lever 110 with a lateral extension 111 adapted to bear on the periphery of the material coiled on the roll 6 and further providing the lever with a downturned nose 112 adapted to engage with a pin 113 extending laterally from one end of the roll 6. The lever 110 is pivoted to an angular-shaped bracket 114 herein shown as secured to the upright 1. The structure being such that as the diameter of the coil on the roll 6 decreases owing to the unwinding of the said material, the free end portion of the lever 110 will move downwardly so that when the strip 108 is unwound from the roll 6 and the extension 111 bears on the same, the nose 112 will extend into the path of movement of the pin 113, all of which is shown in Fig. 7.

In order to prevent too free rotation of the roll 6 I provide a friction brake 115 which is adapted to bear on a portion of the belt 10 trained over the lower pulley, the said brake 115 being pivotally connected as at 116 and adjusted by means of a rod 117 screwed into the bracket 114 and having a collar 118 upon which bears one end of a spring 119, the opposite end of which abuts the bracket 115. With this construction it will be seen that the friction between the brake and belt may be varied.

Although I have shown and described a preferred form of my invention it is to be understood that I am not to be limited to the specific arrangement and construction of parts since various changes will be made, within the scope of the appended claims without departing from the spirit or sacrificing any of the advantages of the invention.

What I claim as new is:

1. In a machine for vending sections of material from a strip of the same, in combination with a casing for containing the strip and having a delivery; of means for cutting sections from the strip and means including a plunger for feeding the strip through the delivery opening, and means controlled directly by the plunger and adapted for locking the cutting means during the movement of the strip.

2. In a machine for vending material from a coiled strip, in combination with a feeding mechanism, a rotatable holder adapted for detachable connection to one end of the coil of material to be vended, and means for uncoiling the material from the holder; of means for locking the holder against movement after the material has been uncoiled therefrom for the purpose described.

3. In a vending machine, in combination with means for feeding the material to be vended and including a plunger; of means for locking the plunger against return movement during the initial stroke thereof, said last mentioned means being governed by the feeding means to unlock the plunger at the end of its initial stroke.

4. In a machine for vending material from a strip, a casing having a delivery opening, means including a plunger for feeding material through said opening, a cutting means for the material, said cutting means being fully operative while the plunger is in normal position, and means movable with the cutting means and held against such movement by the plunger during operation of the latter.

5. A machine for vending material from a strip including a casing having a delivery opening, a material holding element within the casing, means including a plunger for feeding said material through the opening, a cutting means, and a locking segment

movable with the cutting means, said segment being wholly free of the plunger when the latter is in normal position and engaged by the plunger to hold the locking means against operation during the full movement of the plunger.

6. A machine for vending material from a strip, a casing, a rotatable holder adapted to support a strip of material, to be vended, said casing being formed with an opening, a closure for the opening, a lever for holding the closure in open position, a weight carried by the lever and serving to move the lever to close the closure, said weight being normally supported against closure operating movement of the lever during the integrity of the strip.

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

FRED FANNING.

Witnesses:

A. J. CEUPP,

C. H. RAUDYBUSH.