

Nov. 1, 1932.

S. M. COFFMAN

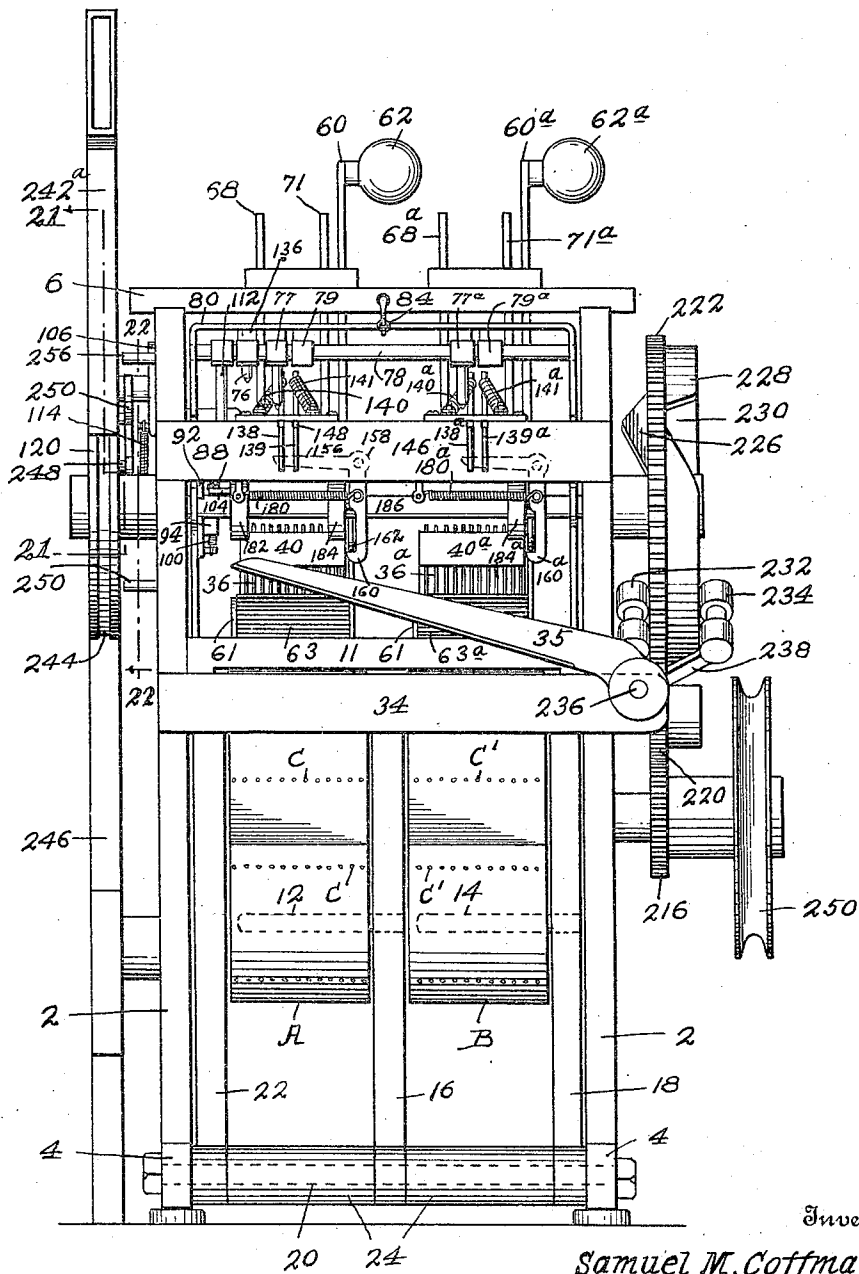
1,885,898

VENDING MACHINE

Filed Jan. 20, 1930

7 Sheets-Sheet 1

FIG. 1.



Inventor:

Samuel M. Coffman,

Witness:

Fred L. Fischer,

By

F. G. Fischer,

Attorney.

Nov. 1, 1932.

S. M. COFFMAN

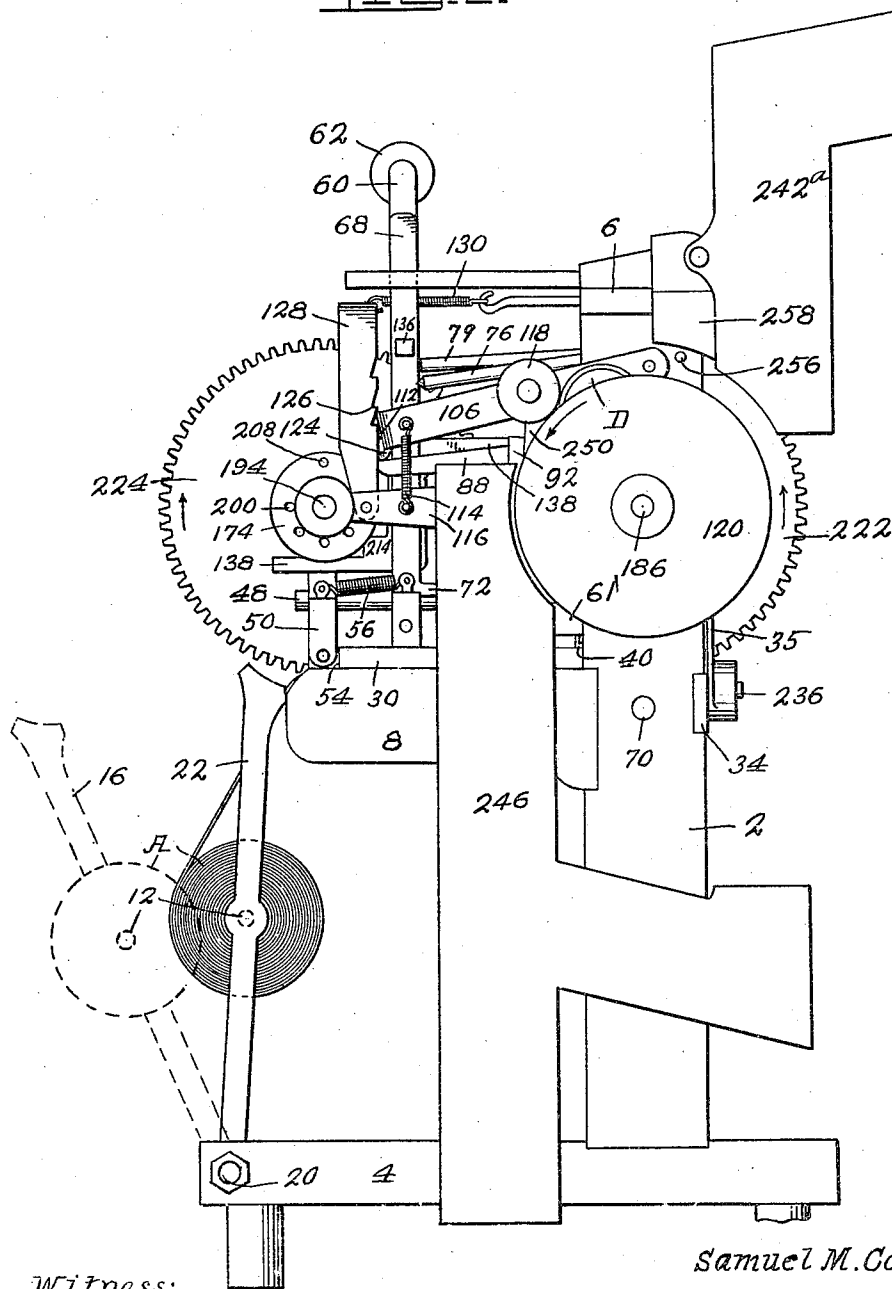
1,885,898

VENDING MACHINE

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7 Sheets-Sheet 2

FIG. 2.



Inventor:

Samuel M. Coffman,

Witness:

Bred L. Fischer,

By

F. G. Fischer,

Attorney

Nov. 1, 1932.

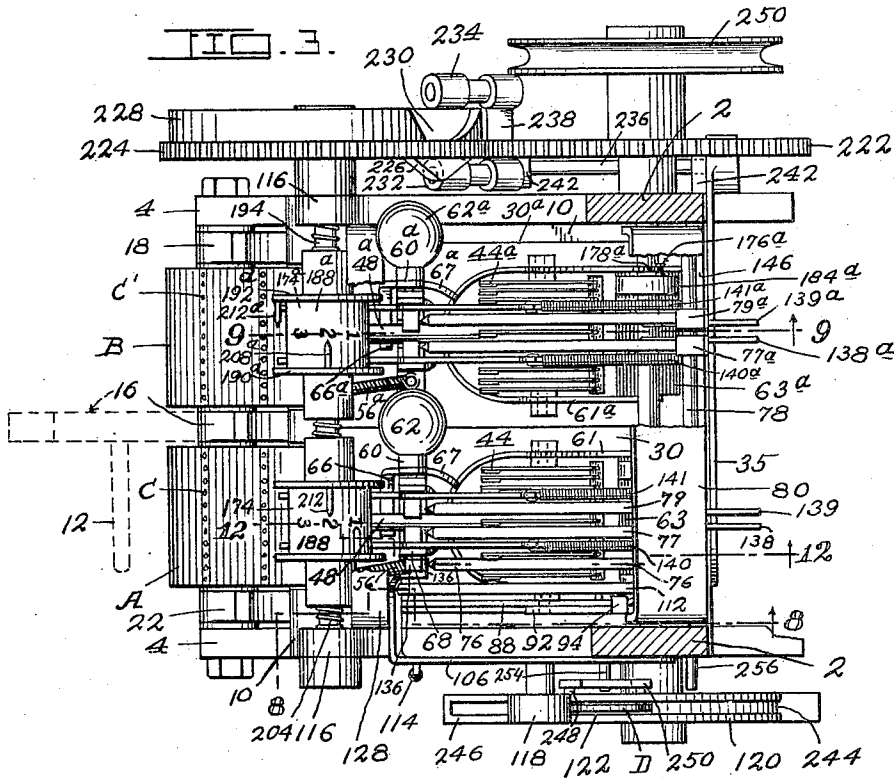
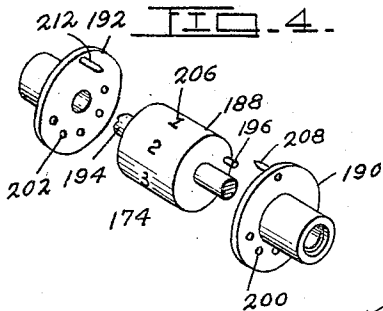
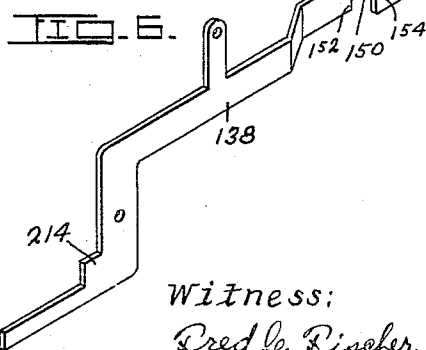
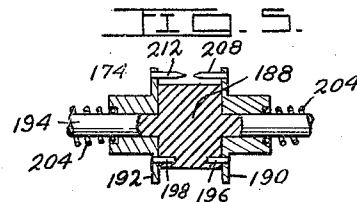
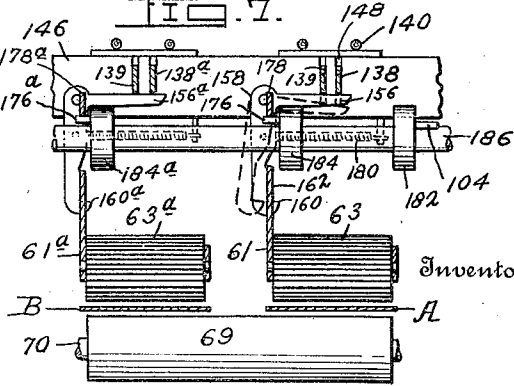
S. M. COFFMAN

1,885,898

VENDING MACHINE

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7 Sheets-Sheet 3



Witness:  
Fred L. Fischer.

Samuel M. Coffman,  
By F. L. Fischer, Attorney.

Nov. 1, 1932.

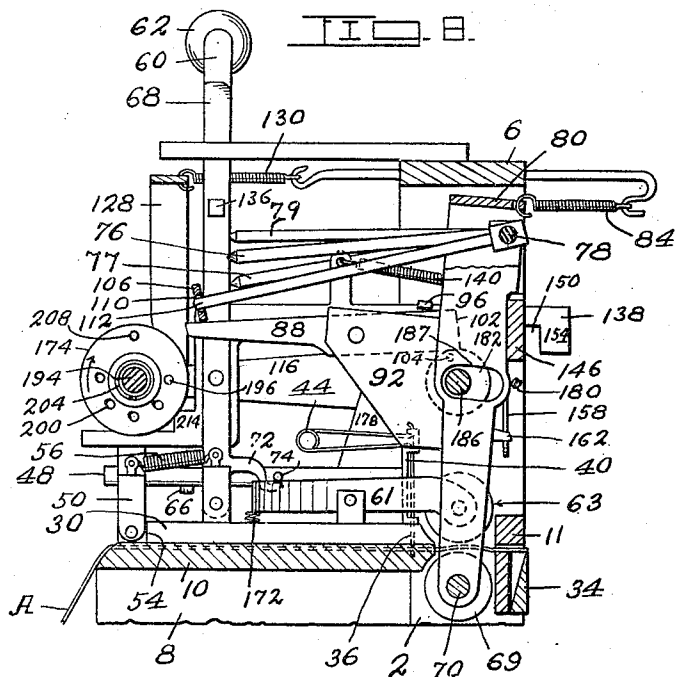
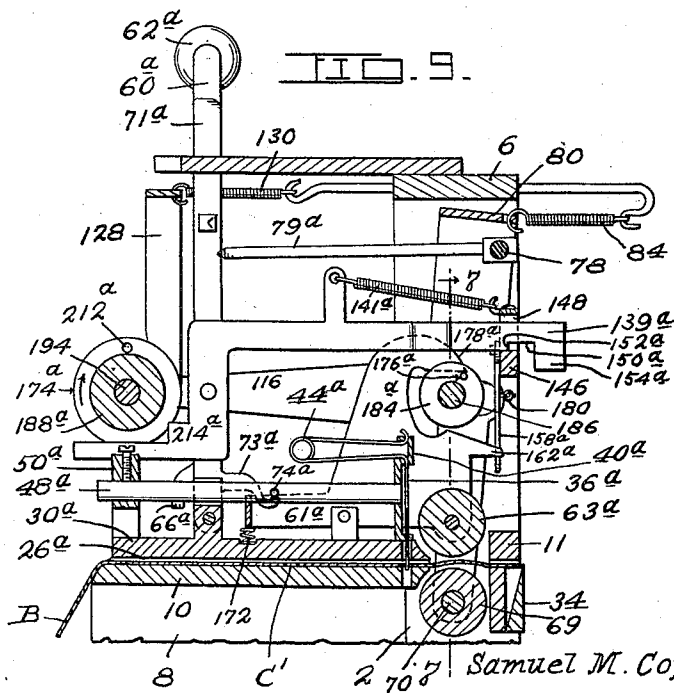
S. M. COFFMAN

1,885,898

VENDING MACHINE

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7 Sheets-Sheet 4



Witness:

Fred L. Discher,

By

F. G. Fischer,

Attorney

Inventor,

Samuel M. Coffman,

Nov. 1, 1932.

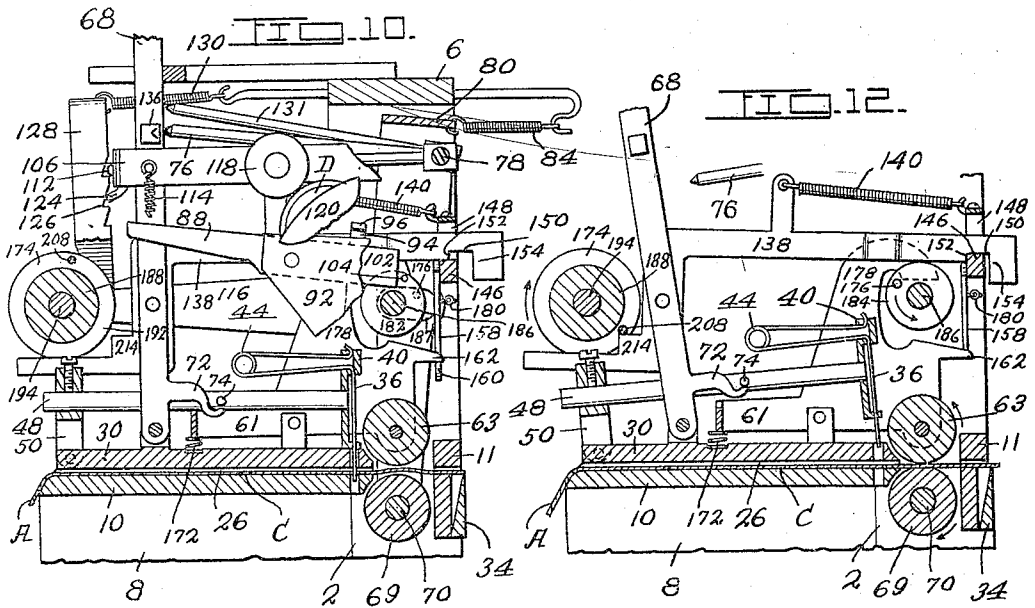
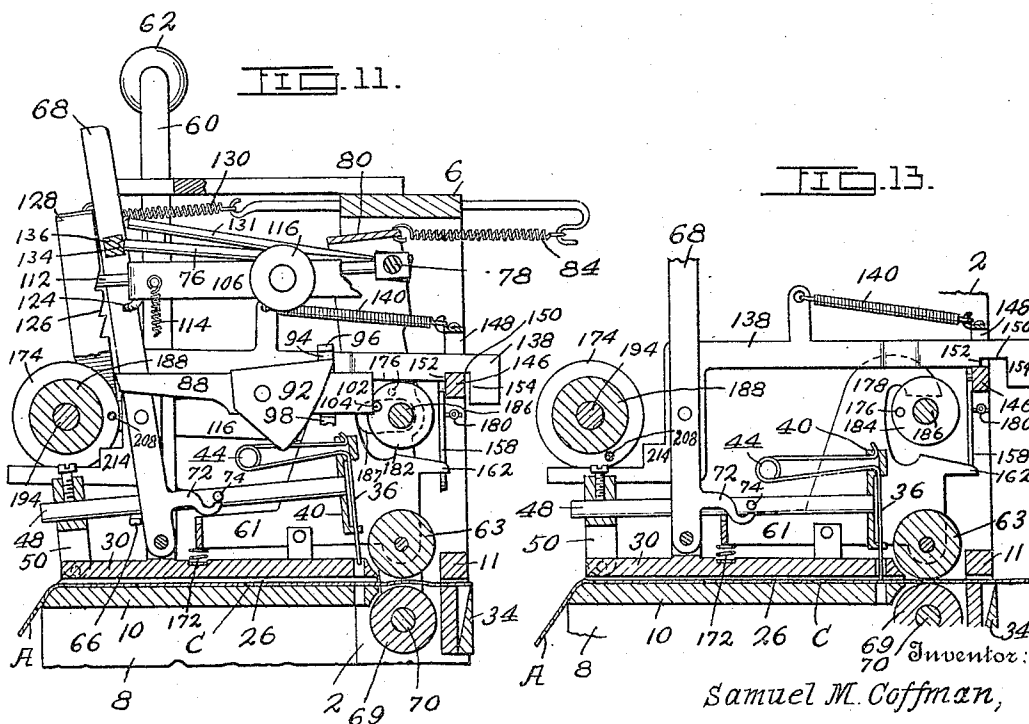
S. M. COFFMAN

1,885,898

VENDING MACHINE

Filed Jan. 20, 1930

7 Sheets-Sheet 5



Witness:

Fred C. Fischer.

By

F. G. Fischer,

Attorney.

Nov. 1, 1932.

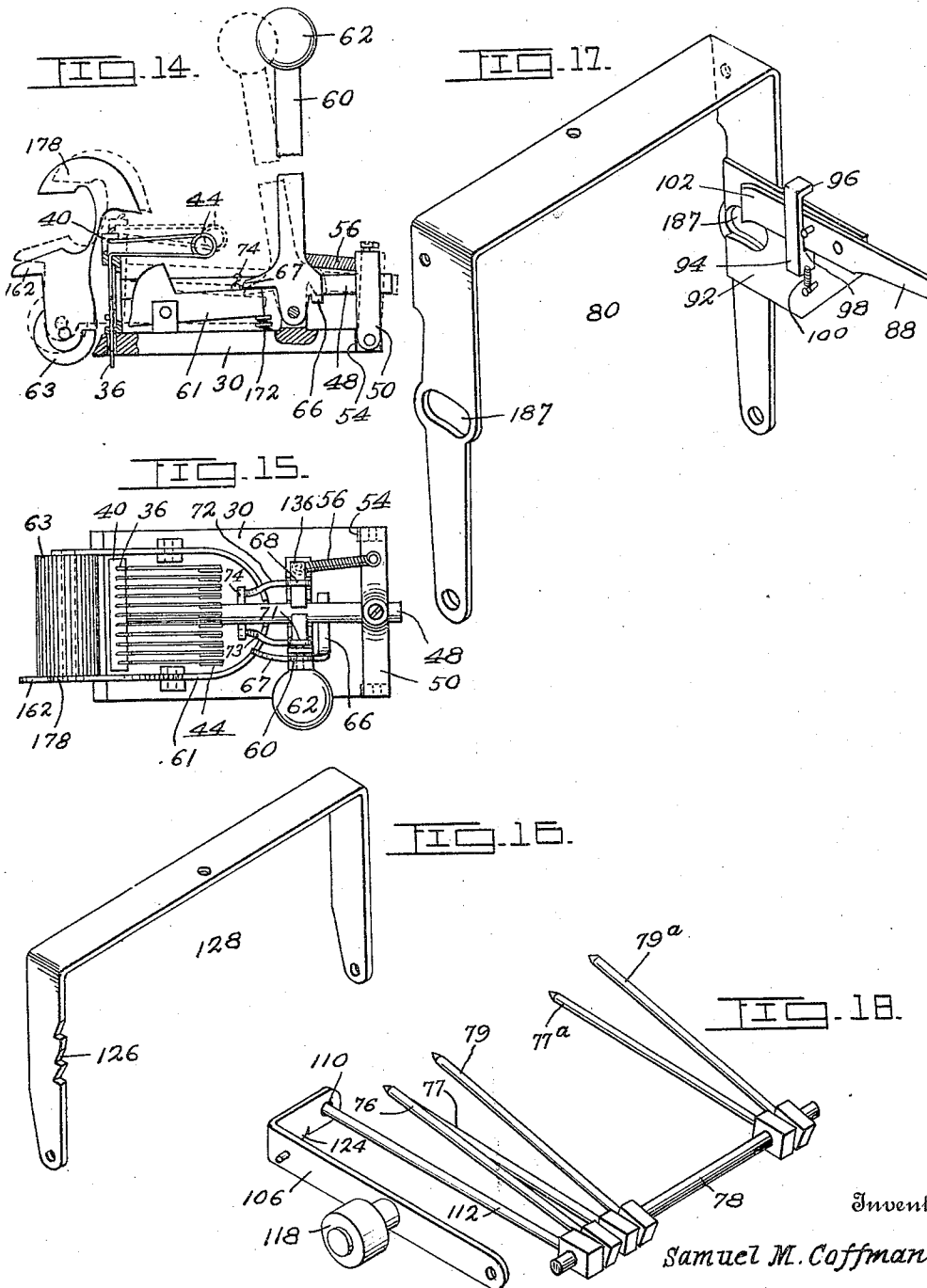
S. M. COFFMAN

1,885,898

VENDING MACHINE

Filed Jan. 20, 1930

7 Sheets-Sheet 6



Inventor:

Samuel M. Coffman,

Witness:

Fred C. Fischer,

By

F. G. Fischer,

Attorney.

Nov. 1, 1932.

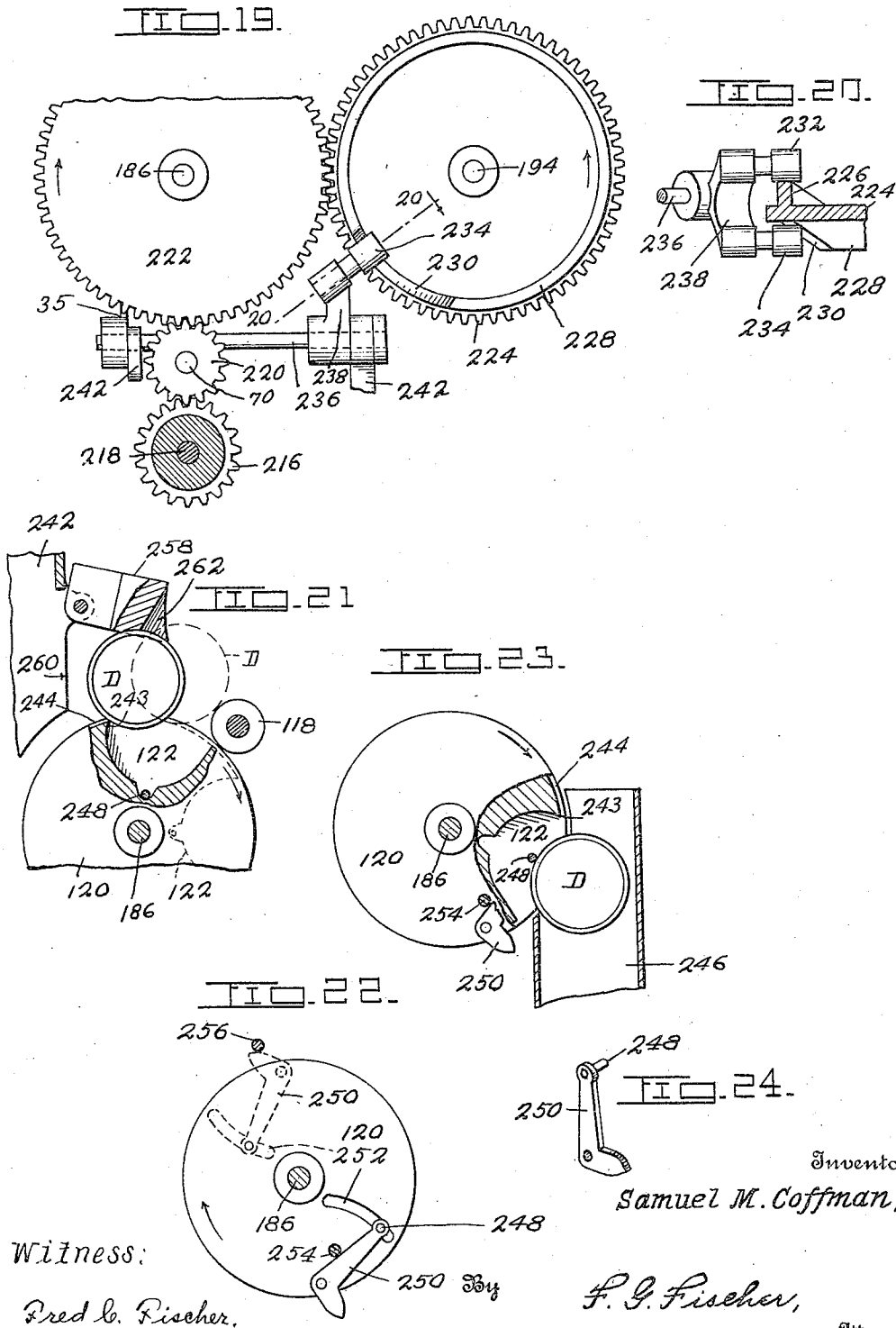
S. M. COFFMAN

**1,885,898**

VENDING MACHINE

Filed Jan. 20, 1930

7 Sheets-Sheet 7



## UNITED STATES PATENT OFFICE

SAMUEL M. COFFMAN, OF KANSAS CITY, MISSOURI, ASSIGNOR, BY MESNE ASSIGNMENTS, TO NATIONAL POSTAGE MACHINES CO. LTD., OF RENO, NEVADA, A CORPORATION OF NEVADA

## VENDING MACHINE

Application filed January 20, 1930. Serial No. 422,042.

My invention relates to vending machines, and more particularly to a machine for vending articles which must be severed from a strip comprising a series of such articles attached one to the other, such as stamps, tickets and the like.

A further object of the invention is to provide a feeding mechanism capable of discharging different numbers of articles upon each operation thereof; and further to provide coin controlled means for determining the amount of movement to be imparted to said feeding mechanism.

Another object is to provide a machine of this character wherein stamps of different denominations may be discharged from the machine and any predetermined number will be delivered to the purchaser when a coin of proper value is deposited in the machine.

A further object of the invention is the provision of means for automatically severing the strip or strips after the stamp or stamps have been fed from the machine, so that it will be impossible for any one to obtain more stamps than were paid for.

A further object is to provide an adjustable trip mechanism whereby the number of stamps to be delivered for any particular coin can be readily changed by an authorized person having access to the working parts of the machine.

In the accompanying drawings I have illustrated one embodiment of my invention applied to a machine for vending stamps, tickets or other articles which are attached one to the other in the form of strips. It will be understood, however, that this particular embodiment of the invention has been chosen for the purpose of illustration only and that the mechanism may take various forms without departing from the spirit of the invention. The invention is not limited to a device for vending articles which come in strips, but may be embodied, either in whole or in part, in a device for vending articles of various kinds, either attached or separated. The invention, in the present instance, is arranged for the use of coins to determine the number of stamps or articles to be discharged, but checks or other similar

devices may be used, so it is to be understood that the words "stamp" and "coin" are used as terms of definition only and not as terms of limitation.

Referring more particularly to the drawings:—

Fig. 1 is a front elevation of the machine.

Fig. 2 is a side elevation of the machine.

Fig. 3 is a broken plan view of the machine with some of the parts in section.

Fig. 4 is a detail perspective of a portion of a rotary trip mechanism disassembled.

Fig. 5 is a longitudinal section of a portion of the rotary trip mechanism assembled.

Fig. 6 is a detail perspective view of one of a plurality of dogs adapted to be actuated by the rotary trip mechanism.

Fig. 7 is a broken vertical section of the feed mechanism on line 7—7 of Fig. 9.

Fig. 8 is a broken, irregular section of the upper portion of the mechanism on line 8—8 of Fig. 3, with the various parts in normal position.

Fig. 9 is a broken section of the upper portion of the machine on line 9—9 of Fig. 3, with the parts in normal position.

Fig. 10 is a broken side elevation, partly in section, showing some of the parts in an advanced position over that disclosed by Figs. 8 and 9.

Fig. 11 is a view similar to Fig. 10, with some of the parts still further advanced.

Fig. 12 is a broken sectional view with some of the parts in an advanced position over that disclosed by Fig. 11.

Fig. 13 is a broken section similar to Fig. 12 with some of the parts still further advanced over that disclosed by Fig. 12.

Fig. 14 is a broken detail side elevation, partly in section, of a portion of the strip guiding and feeding mechanisms in a reverse position to that disclosed by Figs. 3, and 8 to 13, inclusive, and showing the operation of some of the parts in both full and dotted lines.

Fig. 15 is a plan view of the parts disclosed by and turned in the same direction as in Fig. 14.

Fig. 16 is a detail perspective view of an inverted U-shaped latch.

Fig. 17 is a detail perspective view of an

oscillatory yoke with some of the parts carried thereby and turned in a reverse direction to that disclosed by Figs. 3, and 8 to 11, inclusive.

Fig. 18 is a detail perspective view of a plurality of plungers and means for raising and lowering the same.

Fig. 19 is a side elevation, partly in section, of a train of gears turned in a reverse direction to that disclosed by Figs. 2 and 3.

Fig. 20 is a fragmentary section on line 20—20 of Fig. 19.

Fig. 21 is a broken, irregular section on line 21—21 of Fig. 1, showing a coin carrier and associate parts turned in a reverse direction to that disclosed by Figs. 2 and 3.

Fig. 22 is a broken vertical section on line 22—22 of Fig. 1, and turned in the same direction as Fig. 21.

Fig. 23 is a side elevation, partly in section showing the coin carrier in an advanced position over that disclosed by Fig. 21.

Fig. 24 is a detail perspective view of a coin ejector operably mounted on the coin carrier.

In the particular form of the invention illustrated by the drawings the operating parts are carried on a frame consisting in the present instance of a pair of standards 2, a pair of sills 4 upon which said standards 2 are fixedly mounted, a transverse member 6 uniting the upper ends of the standards 2, a pair of brackets 8 rigidly secured to the rear portions of the standards 2 intermediate the ends of the latter, and a guide plate 10 fixedly mounted upon said brackets 8.

Where the machine is designed for postage stamps or other articles connected in strips as shown in the present instance, said strips, designated A and B, are arranged in the form of rolls removably supported upon stub shafts 12 and 14 projecting laterally from arms 16 and 18, respectively, rockably mounted at their lower ends upon a shaft 20, so that either arm may be swung backwardly to the dotted line position, Figs. 2 and 3, and permit ready placement of the rolls upon the respective shafts.

After the shafts 12 and 14 have been supplied with rolls the upper ends of the arms 16 and 18 are swung forwardly against the rear side of the guide plate 10 and when in the latter position the roll A is held from lateral displacement by an arm 22 while the roll B is held from lateral displacement by the arm 16. The arm 22, like the arms 16 and 18, is rockably mounted upon the shaft 20 which is secured in the rear portions of the sills 4. Sleeves 24 are mounted upon the shaft 20 and interposed between the arms 16, 18 and 22 for retaining said arms in spaced relation to each other.

The free ends of the strips A and B are manually threaded through horizontally-disposed slots 26 and 26a (Figs. 10 to 13, inclusive, and Fig. 9, respectively), formed be-

tween the guide plate 10 and a pair of guide plates 30 and 30a. Said guide plates 30 and 30a are arranged side by side upon the guide plate 10 to which they are suitably secured. After being threaded through the guide slots 26 and 26a the strips A and B are advanced between feed rollers hereinafter described and through a slotted guide bar 11 until their forward edges are flush with the upper edge of a stationary blade 34 which is secured to the front portions of the standards 2. After having their forward edges adjusted flush with the blade 34 the strips A and B are held from accidental movement by a plurality of pins 36, and 36a, which pass down through the front rows of perforations C and C' in the respective strips.

The pins 36 and 36a are operably mounted side by side in movable heads 40 and 40a and extend rearwardly at their upper portions where they are formed into coils 44 and 44a, which tend to force the pins downwardly through the perforations C and C', respectively. As the heads 40 and 40a are controlled by two sets of mechanisms which are substantially the same in construction and operation, only the set for controlling the head 40 will be described in detail while the second set will be given corresponding reference numerals with exponents a added thereto to distinguish said second set from the first set. The head 40 is fixedly mounted upon the forward end of a rod 48 (as best shown by Figs. 10 to 13, inclusive), secured at its rear portion in a rockable member 50 mounted upon the rear end of the guide plate 30 and normally held against shoulders 54 on said guide plate by means of a retractile spring 56.

Manual means for raising the pins 36 out of the guide slot 26 in order to permit the strip A to be threaded through said slot is had in the form of a lever 60 (best shown by Fig. 14), provided at its upper end with a knob 62 and pivotally connected at its lower end to the guide plate 30. The lever 60 is provided at its lower rear portion with a finger 66 which engages the under portion of the rod 48 for lifting the same when said lever 60 is pushed forwardly. The lever 60 is also provided with a finger 67 for actuating a carriage 61 having a feed roller 63 which coacts with a long feed roller 69 on a shaft 70 in automatically advancing the strip A. By thus providing the lever 60 with the fingers 66 and 67 it simultaneously effects the lifting of the pins 36 and the feed roller 63 out of the way as shown by dotted lines, Fig. 14, so that the strip A can be readily threaded through the guide slot 26 and the slotted bar 11, as above stated.

The carriage 61 is pivotally mounted upon the guide plate 30 and arranged beside a similar carriage 61a which is pivotally mounted upon the guide plate 30a and pro-

vided with a feed roller 63a for coacting with the long feed roller 69 in advancing the strip B. A manually controlled lever 60a, like the lever 60, is provided for lifting the pins 36a and the feed roller 63a, so that the strip B can be initially adjusted forwardly by hand to the blade 34.

Means for automatically raising the pins 36 from the guide slot 26 is provided in the form of levers 68 and 71 operably mounted at their lower ends upon the guide plate 30. Said levers 68 and 71 are provided at their lower ends with fingers 72 and 73 (Fig. 15) which engage the under portion of a pin 74 extending transversely through the rod 48 for lifting the latter to the dotted line position (Fig. 14) when said levers are swung towards the rear of the machine. The lever 68 may be swung rearwardly by a plunger 76 or a plunger 77, while the lever 71 may be swung rearwardly by a plunger 79. The plungers 76, 77 and 79 (best shown by Figs. 1, 8 and 18) are secured upon a rock-shaft 78 mounted in a yoke 80 which is rockably mounted at its lower ends upon the shaft 70. The yoke 80 is held in normal position against a bar 146 by means of a coil spring 84.

The yoke 80 is swung towards the rear of the machine by means of an abutment 88 (best shown by Figs. 10, 11 and 17) pivotally mounted upon a bracket 92 fixed to one side of said yoke 80 and equipped with a fixedly mounted stop 94 having upper and lower shoulders 96 and 98, respectively, for limiting the pivotal movement of said abutment 88. A retractile spring 100 is attached to the bracket 92 and the abutment 88 for pulling the enlarged end 102 of said abutment down into the path of a wrist pin 104 (Fig. 10) when the opposite end of said abutment is freed, as will hereinafter appear.

The abutment 88 is normally held against the shoulder 96 and out of the path of the wrist pin 104 by means of a coin-controlled arm 106 (Figs. 2, 8, 10 and 11) pivotally secured at one end to the adjacent standard 2 and bent at its other end which has a hole 110 through which the free end of a rod 112 slidably extends, the opposite end of said rod being secured to the rock-shaft 78 for actuating the latter. The free end of the arm 106 is normally held in lowered position by a coil spring 114 attached at one end to said arm and at its opposite end to one of a pair of brackets 116 projecting rearwardly from the standards 2 of the frame.

The arm 106 is provided with a roller 118 which is normally held in engagement with the periphery of a rotary coin carrier 120 by means of the spring 114. The coin carrier 120 consists preferably of a disk, as shown, and is provided with a peripheral pocket 122 (Figs. 21 and 23) for the reception of coins of different denominations, a coin D being shown in said pocket. The coin D is carried under the roller 118 and thereby lifts the latter and the arm 106. The height to which the arm 106 is raised depends upon the denomination of the coin. If the coin is a one-cent piece, it will raise the arm 106 to the position disclosed by Fig. 10, at which point a lug 124 at the free end of said arm enters the intermediate notch 126 of a latch 128, which is yieldably held in engagement with said lug 124 by means of a retractile spring 130.

As the free end of the arm 106 moves upwardly it releases the underlying end of the abutment 88 and permits the spring 100 to pull said abutment down into engagement with the shoulder 98 of the stop 94. This carries the end 102 of the abutment into the path of the wrist pin 104 as shown by Fig. 10. When the wrist pin 104 engages the abutment 88 it actuates the latter and causes it to swing the yoke 80 rearwardly with the plungers 76, 77 and 79, and other plungers 77a and 79a also mounted upon the rock shaft 78. As said plungers move rearwardly the pointed free end of the plunger 76, which is held at the proper pitch as the coin D passes under the roller 118, enters the socket 134 (Fig. 11) of a lateral extension 136 projecting from one side of the lever 68 and rocks the latter, thereby causing the finger 72 to lift the pins 36 out of the initial row of perforations C in the strip A through the intermediary of the rod 48 and the head 40, which are raised against the action of the spring 56.

As the lever 68 is actuated, as stated, it pulls a dog 138, pivotally connected to said lever, backwardly against the action of a retractile spring 140. The forward end of the dog 138 is supported by the transverse bar 146 which is secured to the standards 2 and provided with vertical slots 148 in which the dog 138 and other like dogs 139, 138a and 139a are slidably mounted. The dogs 139, 138a and 139a are yieldably held in normal position by springs 141, 140a and 141a, respectively. The dog 138 is provided at its forward portion with a recess 150 located between shoulders 152 and 154, which are spaced apart a distance slightly greater than the width of the bar 146. When the dog 138 is actuated by the lever 68 the shoulder 152, which normally rests in the bottom of the respective slot 148, will be drawn downwardly by the spring 140 into engagement with the rear side of the bar 146 and lock the lever 68 in the position disclosed by Fig. 12 before the plunger 76 is restored to normal position. By locking the lever 68 as stated the pins 36 will be held out of engagement with the strip A long enough to insure the delivery of a stamp.

As the shoulder 152 of the dog 138 moves downwardly into engagement with the rear side of the bar 146, as stated, it depresses the

arm 156 of a bell-crank 158 pivotally mounted on the rear side of said bar 146 and provided with a depending latch 160 which is thereby swung out of engagement with a lower arm 162 of the carriage 61. After the arm 162 has been released by the latch 160 the carriage 61 is rocked on its pivots by a spring 172 (Figs. 8 and 10 to 14, inclusive), and carries the feed roller 63 down into engagement with the strip A which is thereby pressed into frictional contact with the feed roller 69, whereupon said feed rollers 63 and 69 coact in advancing the strip A.

Soon after the feed rollers 63 and 69 start to advance the strip A the rear end of the dog 138 is depressed by rotary trip means 174, thereby raising the shoulder 152 above the bottom of the slot 148 and allowing the dog 138 to be restored to normal position by the spring 140. As the dog 138 returns to normal position it pulls the lever 68 therewith which in turn permits the spring 56 to restore the rockable member 50, the rod 48 and the head 40 to their normal positions. As the head 40 moves downwardly to normal position it lowers the pins 36 upon the advancing strip A, as shown by Fig. 13, so that said pins 36 will be in position to enter the second row of perforations C and thereby check further forward movement of said strip A after the same has been advanced the width of one stamp.

Shortly after the pins 36 check the forward movement of the strip A a wrist pin 176 engages the under side of an upper arm 178 on the forward portion of said carriage and lifts the latter until the lower carriage arm 162 is carried above the latch 160 which is then immediately swung beneath said arm 162 by a retractile spring 180 and supports the forward end of the carriage in raised position after the wrist pin 176 moves from beneath the carriage arm 178. As the carriage 61 is lifted it carries the feed roll 63 above the strip A so that the adhesive under side of said strip can not adhere to the roller 69 during damp weather. The wrist pins 104 and 176 project laterally from disks 182 and 184, respectively, fixedly mounted upon a shaft 186 (best shown by Fig. 7) which extends through arcuate slots 187 of the yoke 80 and is journaled in the standards 2. The shaft 186 is provided at one end with the coin carrier 120 and intermediate said ends with a fixedly mounted disk 184a having a wrist pin 176a for lifting the forward portion of the carriage 61a above the associated latch 160a.

The rotary trip means 174 consists of a drum 188 and a pair of disks 190 and 192. Said disks 190 and 192 are arranged at opposite ends of the drum 188 which is fixedly mounted upon a driven shaft 194 journaled in the rear ends of the brackets 116. The drum 188 is provided at its ends with studs

196 and 198, the former of which is adapted to enter any one of a series of holes 200 in the disk 190 for driving the latter, while the stud 198 is adapted to enter any one of a series of holes 202 in the disk 192 (Figs. 4 and 5) for causing the latter to rotate with the drum. The disks 190 and 192 are loosely mounted upon the shaft 194 and yieldably held against the adjacent ends of the drum 188 by coil springs 204, so that they may be disengaged from said drum and manually rotated to carry any one of the holes 200 and 202 opposite the studs 196 and 198, respectively, for coengagement therewith.

The drum 188 is provided with a row of peripheral index numerals 206, which in the present instance run from 1 to 5, inclusive, to correspond with the number of holes in each of the disks 190 and 192. Said disks 190 and 192 are provided with trip pins 208 and 212, respectively, that project over the drum 188 and coact with said index numerals in being properly positioned with respect to the dogs 138 and 139 to effect delivery of the desired number of stamps from the strip A, as will hereinafter more fully appear. The trip pin 208 is arranged to contact with the upper edge of a shoulder 214 on the rear portion of the dog 138 after the latter has been carried by the lever 68 to the position disclosed by Figs. 11 and 12, and depress said rear end, thereby freeing the shoulder 152 at the forward portion of said dog from engagement with the rear surface of the bar 146 so that said dog may be returned to normal position by the spring 140 as hereinbefore mentioned.

By constructing the rotary trip means 174 as above described, it may be set to cause any number of stamps from one to five, inclusive, to be delivered from the strip A on the insertion of a single coin in the machine. For instance, if it is desired to deliver but one stamp for one coin the disk 190 is adjusted to cause the trip pin 208 to register with the index numeral 1 on the drum 188. This operation places the pin 208 in position to trip the dog 138 in time to allow the pins 36 to enter the second row of perforations C and check the forward movement of the strip A when the foremost stamp is in position to be severed from said strip. If it is desired to deliver two stamps for one coin the disk 190 is adjusted backwardly until the trip pin 208 registers with the index numeral 2, which operation causes said trip pin to travel through a greater arc and delay the tripping of the dog 138 and the consequent lowering of the pins 36 until two stamps have been fed into position to be severed from said strip A. Likewise three, four or five stamps may be delivered for a single coin by adjusting the disk 190 backwardly until the trip pin 208 registers with the proper index numeral on the drum 188.

The shafts 70, 186 and 194 are driven by a train of gears (best shown by Fig. 19), consisting of a pinion 216 journaled upon a stub shaft 218 secured to the adjacent standard 2, a small gear wheel 220 intermeshing with said pinion 216 and fixedly mounted upon the feed roll shaft 70, a large gear wheel 222 intermeshing with said small gear wheel 220 and fixedly mounted upon the shaft 186, and a large gear wheel 224 intermeshing with said large gear wheel 222 and fixedly mounted upon the shaft 194. The large gear wheel 224 is provided at one side with a projection 226 and at its other side with a cam 228 having a cavity 230 opposite said projection 226.

Two rollers 232 and 234 are disposed at opposite sides of the large gear wheel 224, the roller 232 being arranged in the path of the projection 226 in order to be moved in one direction by the latter and carry the roller 234 into the cavity 230 for the purpose of rocking an oscillatory shaft 236 in one direction. As the projection 226 passes out of engagement with the roller 232 the cam 228 engages the roller 234 and moves the latter with the roller 232 in the opposite direction to reverse the movement of the shaft 236. The rollers 232 and 234 are carried by a bifurcated member 238 fixedly mounted upon the shaft 236, which latter is journaled in bearings 242 and provided at its forward end with the blade 35 which coacts with the stationary blade 234 in severing the stamps from their respective strips A and B. The pinion 216 may be manually driven by a crank, or it can be driven by a pulley 250 which in turn may be belted to an electric motor or other source of power, not shown.

Assuming that the strips A and B consist of one and two cent stamps, respectively, the manner in which delivery of different numbers of said stamps may be effected by coins of different denominations, such for instance, as a penny, a nickel and a dime, will now be described. First the pin 208 is adjusted to register with the index numeral 1 on the drum 188, and the trip pin 212 is adjusted to register with the index number 2 on said drum. The trip pin 208a is then adjusted to register with the index numeral 2 on the drum 188a, while the trip pin 212a is adjusted to register with the index numeral 4 on said drum 188a. The foregoing adjustments may be made without removing any of the parts from the shaft 194, it only being necessary to slide the respective disks upon said shaft against the action of the springs 204 in order to disengage said disks from the respective studs on the drums 188 and 188a, so that said disks may be turned to carry the respective trip pins into registry with the desired index numerals.

After the foregoing adjustments have been made a one-cent stamp may be purchased by inserting a penny in an upper coin chute 242

which directs said penny into the peripheral groove 244 of the coin carrier 120. As the coin carrier 120 rotates the pocket 122 therein is carried into position to receive said coin which is thereby carried around and discharged into a lower coin chute 246 which directs the coin into a receptacle, not shown, at the bottom of the machine.

Ordinarily the coin will be carried by this force of gravity from the pocket 122 into the lower coin chute 246, but should said coin, from any cause, stick within the pocket it will be forcibly expelled by the stud 248 on an ejector 250. Said stud 248 projects into the pocket 122 through an arcuate slot 252 and is swung outwardly to eject the coin at the proper time by means of an ejector 250 which contacts a stationary element 254, as shown in full lines, Fig. 22. As the coin carrier 120 continues to rotate it carries the ejector against another stationary element 256, as shown by dotted lines, Fig. 22, which restores said ejector to normal position.

It may sometimes happen that the coin in descending through the chute 242, will land upon the rear edge 243 of the pocket 122 as shown in full lines, Fig. 21, and become locked between said rear edge and the lower end of the chute 242, and thus possibly stop the machine or cause damage thereto unless some means is provided for the release of the coin. Such means is shown in the present instance in the form of a gate 258 which normally closes a slot 260 in the lower rear portion of the chute 242. Said gate 258 is provided at its lower portion with a groove 262 which coacts with the peripheral groove 244, in the coin carrier 120, in supporting the coin in upright position as the latter is carried by the coin carrier 120 against the roller 118 (as shown by dotted lines, Fig. 21) where the coin is held until the coin carrier rotates nearly one revolution and thereby brings the pocket 122 into position to receive the coin. As the coin falls into the pocket 122 it will project a predetermined distance above the periphery of the coin carrier 120, so that when said coin is carried beneath the roller 118 it will raise the latter (Fig. 10), which in turn lifts the arm 106 high enough for the lug 124 to enter the intermediate notch 126 of the latch 128. As the arm 106 is lifted it, through the intermediary of the rod 112, rocks the shaft 78 which then lifts the plunger 76 into position to operate the lever 68 when the yoke 80 is swung rearwardly to the position shown by Fig. 11. The strip A is then advanced the width of one stamp which is severed from said strip, as hereinbefore described.

If it is desired to purchase two two-cent stamps and a one-cent stamp a nickel is deposited in the machine and it being of greater diameter than the penny will project from the pocket 122 to a greater height and lift the arm 106 high enough for the lug 124 to

enter the uppermost notch 126 of the latch 128. This operation raises the plungers high enough for the plungers 77 and 77a to actuate the levers 68 and 68a, respectively, as the yoke 80 swings rearwardly. The levers 68 and 68a carry the dogs 138 and 138a therewith and into the path of the trip pins 208 and 208a. The operation of the lever 68 effects the delivery of a one-cent stamp as when the penny was deposited, while the dog 138a holds the pins 36a out of contact with the strip B long enough to insure the delivery of two two-cent stamps.

If two one-cent stamps and four two-cent stamps are desired, a dime is deposited in the machine and being of less diameter than the penny it will only lift the arm 106 high enough for the lug 124 to enter the lowermost notch 126 of the latch 128. This reduced movement of the arm 106 rocks the shaft 73 through a shorter arc than before and causes it to lift the plungers 79 and 79a in position to rock the levers 71 and 71a, rearwardly, so that the dogs 139 and 139a and the trip pins 212 and 212a will be brought into operation. The pins 36 and 36a will then be prevented by said levers 71 and 71a, respectively, from checking the forward movements of the strips A and B until two one-cent and four two-cent stamps have been advanced far enough by the feed rollers to insure delivery of said stamps.

While I have shown the machine equipped with only two units for handling two rolls of stamps, it is to be understood that additional units for handling more rolls may be provided. Also the number of stamps discharged for each coin may be varied if desired by proper adjustment of the rotary trip mechanisms 174 and 174a to provide a profit on each sale. Furthermore, stamps and coins of other denominations than those mentioned may be used by arranging the machine accordingly.

From the foregoing description, taken in connection with the drawings, it will be understood that I have provided a vending machine which will positively discharge the proper number of articles upon each operation thereof and is not likely to be damaged in such manner as to render it inoperative. It is also to be understood that the mechanism may be enclosed in a case, but as the latter forms no part of the invention it has not been shown in the drawings.

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

1. In a vending machine, strip feeding means comprising a positively driven roller and a pressure roller, a carriage for moving said pressure roller towards its companion, latch means for directly engaging and holding said carriage in retracted position, spring means for yieldably holding said latch

means in active position, a longitudinally movable member for disengaging said latch means from the carriage so that the pressure roller may cooperate with its companion in feeding the strip forwardly, a slotted element fixed to the machine frame and forming a guide for said latch disengaging member, coin controlled mechanism for moving said member to active position so that it will effect release of the carriage from the latch means, a shoulder on said member for engaging the slotted element and holding the member in its active position, rotary trip means for engaging said member to effect disengagement of said shoulder from the slotted element, spring means for restoring the latch disengaging member to its inactive position, and means for restoring the carriage to its retracted position.

2. In a vending machine, strip feeding means comprising a positively driven roller and a pressure roller, a carriage for moving said pressure roller towards its companion, latch means for holding said carriage in retracted position, a member for disengaging said latch means from the carriage so that the pressure roller may cooperate with its companion in feeding the strip forwardly, checking means for limiting the movement of the strip, coin controlled means for actuating said checking means and moving the latch disengaging member to active position to effect release of the carriage from the latch means, means for holding said latch disengaging member in its active position, a trip pin for releasing said latch disengaging member, means for restoring said latch disengaging member to its inactive position when thus released, a manually adjustable disk carrying the trip pin, a rotary shaft upon which said disk is loosely mounted, a drum fixedly mounted upon said shaft and provided with numerals, coengaging means whereby said drum rotates the disk, said coengaging means being disengagable so the disk may be manually rotated to carry the trip pin into the desired relation with any of the numerals on the drum, and means for restoring the carriage to its retracted or inactive position.

3. In a vending machine, supporting means for a strip of articles having rows of perforations between them, feeding means for advancing said strip, a plurality of pins for checking the strip by entering the perforations of any row, a rockable support in which said pins are yieldably mounted, coin controlled means for actuating said rockable support, a stationary blade, a movable blade for cooperating with said stationary blade in severing the strip at one of the rows of perforations when said strip is checked, a bifurcated member including two divergent arms for oscillating said movable blade, a rotary member extending between said arms

and having a projection on one side for rocking the bifurcated member in one direction and a cam on its opposite side for rocking said bifurcated member in the opposite direction.

4. In a vending machine, a plurality of guideways, means for supporting rolls of stamps near the entrance to said guideways, means for feeding the stamps through said guideways, sets of pins for checking the feeding of the stamps through the respective guideways, a movable support for each set of pins, coin controlled means for selecting and actuating each of said pin supports, a stationary blade near the exit of the guideways, a movable blade for cooperating with said stationary blade in severing the stamps from the roll, a bifurcated member including two divergent arms for oscillating said movable blade, anti-friction rollers mounted upon said arms, and a rotary member extending between said rollers and provided at its opposite sides with cam faces for engagement with the respective rollers.

5. In a vending machine, a positively driven feed roller, a plurality of feed rollers adapted to coast with said positively driven roller in advancing a strip, carriages carrying said plurality of feed rollers, latches for holding said carriages in retracted position, members for disengaging said latches from the carriages, coin controlled means for moving said members to active position to effect release of the carriages from the latches, means for holding said members in active position, trip pins for releasing said members so they may return to inactive position, manually adjustable devices carrying said trip pins, rotary elements, coengaging means whereby said devices are driven by said rotary elements, said coengaging means being disconnectable so that said devices may be adjusted forwardly or backwardly independently of said rotary elements to vary the timing of the releasing operation, and means for reengaging the carriages with the latches.

6. In a vending machine, supporting means for strips of articles separated by rows of perforations, groups of pins adapted to enter any row of perforations in the respective strips to check the latter, rockable supports in which the respective groups of pins are yieldably mounted, levers to effect removal of the pins from the perforations, coin controlled means for actuating said levers, and manually controlled levers whereby the rockable supports may be adjusted to remove the pins from the perforations.

7. In a vending machine, strip feeding means, means for checking the strip, a lever, a plunger for moving said lever to active position and thereby causing it to adjust said checking means to inactive position, means for actuating said plunger including a pivoted device, coin controlled means for releasing

said pivoted device so that it may effect the movement of the plunger to active position, a member for securing the lever in active position while the strip is fed a predetermined distance, said member being adapted to engage and be held in active position by a stationary portion of the machine, and means for releasing said member.

8. In a vending machine, strip feeding means, means for checking the strip, a lever to move said checking means to inactive position, suitably controlled means for cooperating with said lever in holding said checking means in inactive position until the strip has been fed a predetermined distance, a plunger for moving said lever to active position, an oscillatory member for actuating said plunger, an abutment operably connected to said oscillatory member for actuating the latter, rotary means for actuating said abutment, means for adjusting said abutment into the path of said rotary means, spring means for retracting the oscillatory member after said rotary means passes out of engagement with the abutment, and coin controlled means for moving and holding said abutment out of the path of the rotary means.

9. In a vending machine, means for feeding a strip of articles separated by rows of perforations, checking means adapted to enter any row of perforations and stop the strip, an element for lifting said checking means from the perforations to allow the strip to advance, suitably controlled means for cooperating with said element in holding the checking means from the perforations until the strip has advanced a predetermined distance, a plunger for moving said element to active position, mechanism for reciprocating said plunger, coin controlled means including a member for adjusting said plunger to the proper degree for engagement with said element, and latch means for supporting said member in active position while the plunger is advancing on said element.

10. In a vending machine, means for feeding a strip of articles separated by rows of perforations, checking means adapted to enter any row of perforations and stop the strip, an element for removing said checking means from the perforations to allow the strip to advance, suitably controlled means for cooperating with said element in holding the checking means from the perforations until the strip has advanced a predetermined distance, means for severing the strip, a plunger for moving said element to active position, mechanism for reciprocating said plunger, a coin controlled member for adjusting said plunger to the proper degree for engagement with said element, a carrier for a coin to actuate said member, and latch means for supporting said member in active position while the plunger is advancing on said element.

11. In a vending machine, means for feeding a strip of articles separated by rows of perforations, checking means adapted to enter any row of perforations and stop the strip, an element for lifting said checking means from the perforations to allow the strip to advance, oscillatory means including a plunger for moving said element to active position, a rotary device for moving said oscillatory means to active position, resilient means for restoring said oscillatory means to inactive position, coin controlled means for adjusting said oscillatory means out of the path of said rotary means, a lock member coacting with a fixed portion of the machine for holding the check lifting element in active position after the oscillatory means has returned to inactive position, and means for releasing said lock member so that the checking means may return to active position and stop the strip after it has advanced a predetermined distance.

12. In a vending machine, means for supporting a plurality of strips of stamps, means for advancing said strips, separate checking means for each strip, levers for adjusting the respective checking means to inactive position, suitably controlled means for cooperating with said levers in holding the respective checking means in inactive positions for suitable periods of time, plungers for actuating the respective levers, mechanism for advancing said plungers, a rotary carrier provided with a peripheral pocket for the reception of coins of different denominations, and a member arranged in the path of said coins and adapted to be adjusted thereby to different positions and in turn adjust the plungers to different positions so that a coin of one denomination will cause certain of the plungers to actuate their respective levers and coins of other denominations will cause certain of the other plungers to actuate their respective levers.

13. In a vending machine, strip feeding means comprising a positively driven roller and a pressure roller, a carriage in which said pressure roller is mounted, means for urging said carriage and its roller towards said positively driven roller, latch means adapted to engage and hold the carriage in retracted position, a movable member engaging said latch means and adapted to disengage and hold it out of engagement with the carriage so that the rollers may cooperate in advancing the strip, a shoulder on said member for cooperating with a stationary part of the machine in holding the member in active position during advancement of the strip, checking means for limiting advancement of the strip, an element engaging said member and said checking means and adapted to simultaneously adjust said member to active position and the checking means to inactive position, coin controlled

means for actuating said element, means for releasing the member from engagement with the stationary part of the machine during advancement of the strip, means for restoring said member to inactive position, and means for restoring the carriage to its retracted position.

14. In a vending machine, strip feeding means, strip checking means, coin controlled mechanism for adjusting and holding said checking means in inactive position to permit advancement of the strip, means for locking said coin controlled mechanism in active position, an orbitally movable member for tripping said locking means to permit the coin controlled means to return to inactive position and the checking means to active position, and rotary means carrying said member and adapted to be adjusted forwardly or backwardly to vary the timing of the tripping operation.

15. In a vending machine, strip feeding means, strip checking means, coin controlled mechanism for adjusting and holding said checking means in inactive position to permit advancement of the strip, means for locking said coin controlled mechanism in active position, an orbitally movable member for tripping said locking means to permit the coin controlled means to return to inactive position and the checking means to active position, rotary means carrying said member and adapted to be adjusted forwardly or backwardly to vary the timing of the tripping operation, a rotary element having peripheral indicia for cooperating with said member to enable the rotary means to be readily adjusted to the proper point, and coengaging means whereby the rotary means is driven by said rotary element.

16. In a vending machine, strip feeding means, strip checking means, coin controlled mechanism for adjusting and holding said checking means in inactive position to permit advancement of the strip, means for locking said coin controlled mechanism in active position, an orbitally movable member for tripping said locking means to permit the coin controlled means to return to inactive position and the checking means to active position, rotary means carrying said member and adapted to be adjusted forwardly or backwardly to vary the timing of the tripping operation, a drum having peripheral indicia for cooperating with said member to enable the rotary means to be readily adjusted to the desired point, a driven shaft upon which the rotary means is loosely mounted and said drum is fixedly mounted, disconnectable coengaging means through which said drum drives said rotary means, and spring means for yieldably holding said coengaging means in active position.

In testimony whereof I affix my signature.

SAMUEL M. COFFMAN.