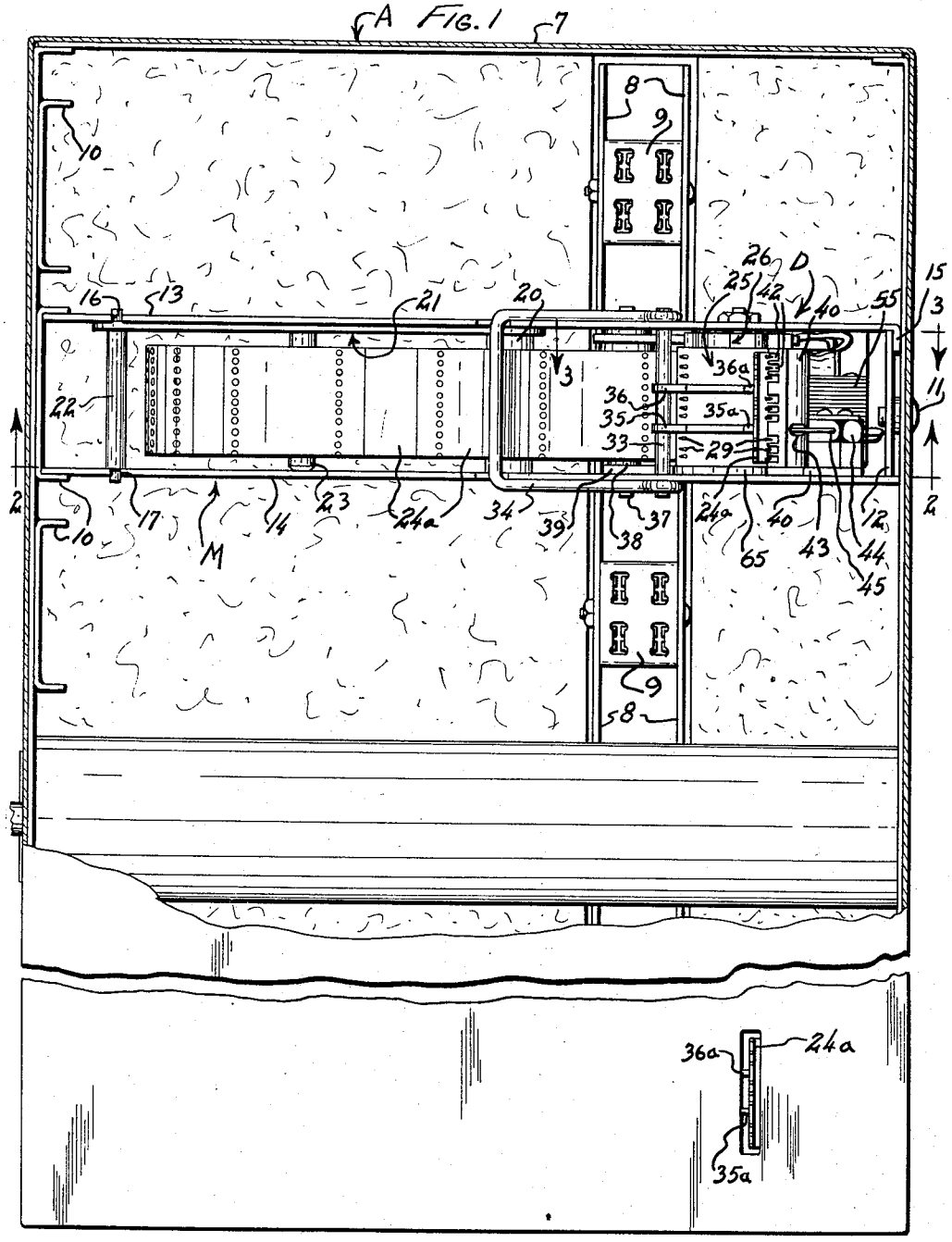
March 17, 1959 K. C. ZEIGLE ET AL 2,878,014

STAMP VENDING MACHINE

Filed Aug. 4, 1954

3 Sheets-Sheet 1

FIG. 1



INVENTORS
KENNETH C. ZEIGLE
PAUL J. NIELAND
JAMES C. VANCE

BY Williamson, Williamson, Schroeder & Adams
ATTORNEYS

March 17, 1959 K. C. ZEIGLE ET AL 2,878,014

STAMP VENDING MACHINE

Filed Aug. 4, 1954 3 Sheets-Sheet 2

FIG. 2

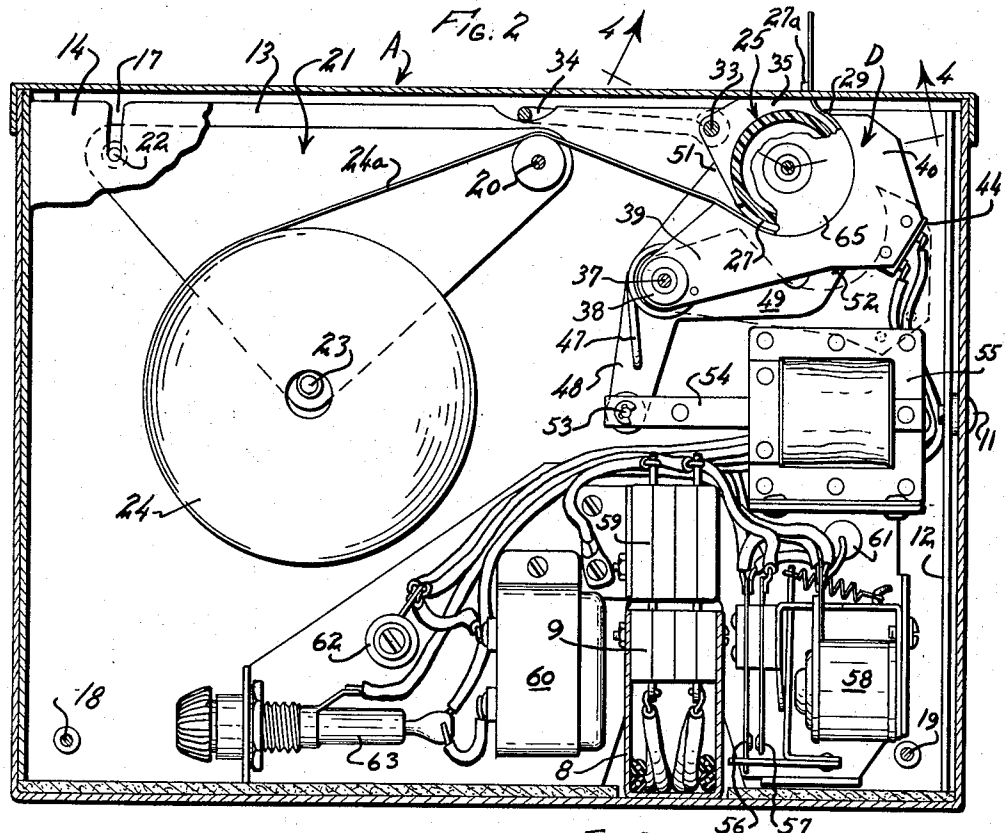


FIG. 3

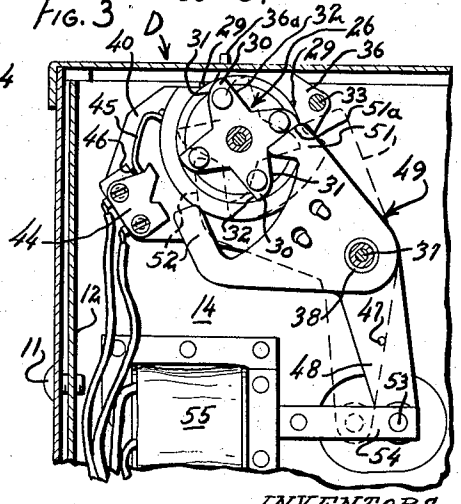
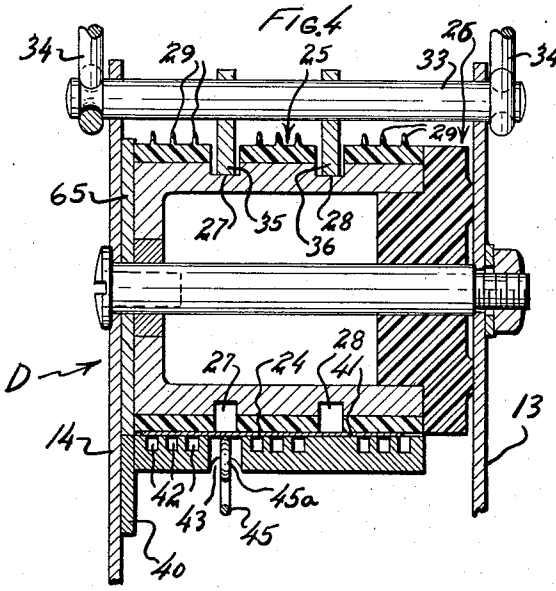


FIG. 4



INVENTORS
KENNETH C. ZEIGLE
PAUL J. NIELAND
JAMES C. VANCE

BY Williamson, Williamson, Schroeder & Adams
ATTORNEYS

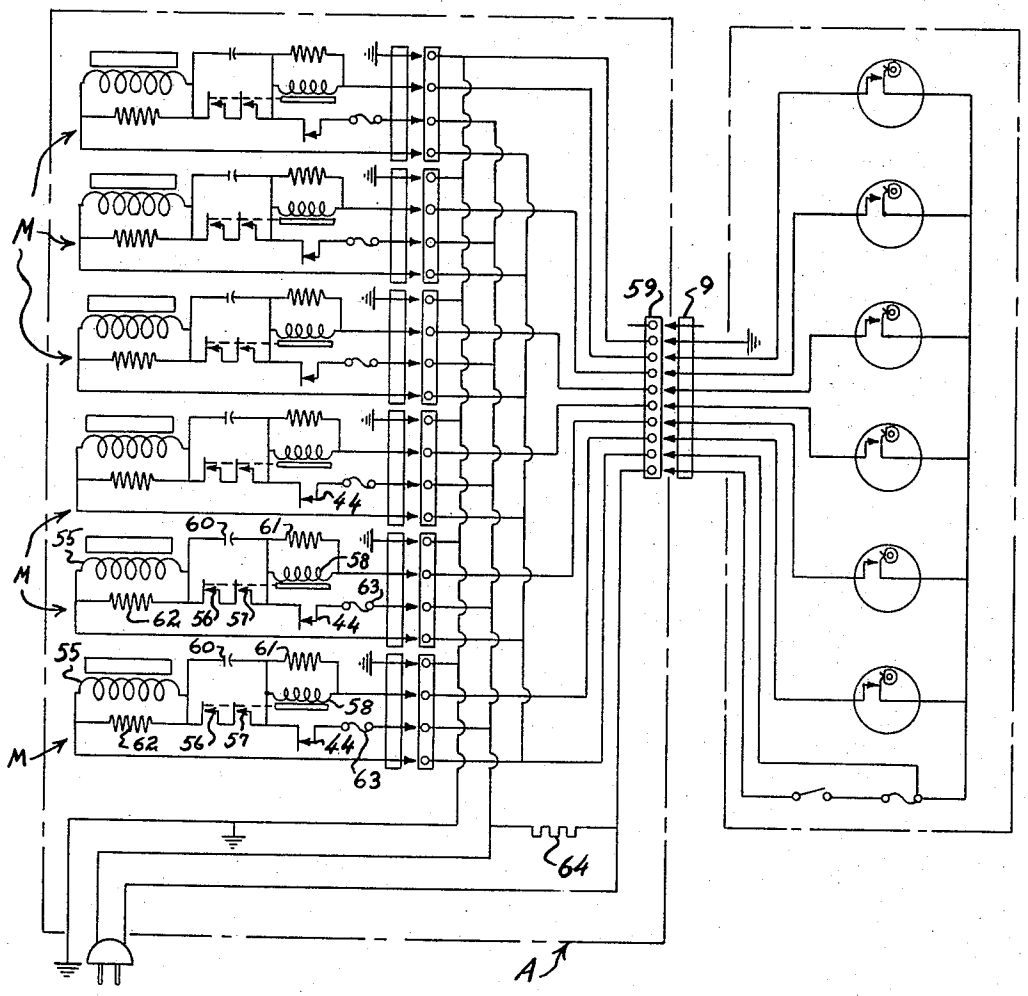
March 17, 1959 K. C. ZEIGLE ET AL 2,878,014

STAMP VENDING MACHINE

Filed Aug. 4, 1954

3 Sheets-Sheet 3

FIG. 5



INVENTORS
KENNETH C. ZEIGLE
PAUL J. NIELAND
JAMES C. VANCE
BY Williamson, Williamson
Schroeder & Adams
ATTORNEYS

United States Patent Office 2,878,014
Patented Mar. 17, 1959

2,878,014

STAMP VENDING MACHINE

Kenneth C. Zeigle, Minneapolis, Paul J. Nieland, South St. Paul, and James C. Vance, Minneapolis, Minn., assignors to Electric Vendors, Inc., Minneapolis, Minn., a corporation of Minnesota

Application August 4, 1954, Serial No. 447,766

18 Claims. (Cl. 271—2.4)

This invention relates to stamp vending machines. More particularly, it relates to stamp vending machines of the type wherein an electrically actuated mechanism is utilized to cause the machine to intermittently vend or dispense stamps upon the receipt of an electrical impulse by the mechanism.

Stamp vending machines previously known have a considerable number of disadvantages. Chief among these is the fact that such machines are quite complicated and expensive to manufacture, operate and maintain in a proper state of repair. In addition, these machines are not constructed to prevent additional stamps from being taken from the feed-roll if the stamps are carefully removed from the machine and twisted sidewise during the removing operation. Such machines are normally difficult to reload. The stamps are not properly presented to the user or customer so as to enable him to readily grasp the same preparatory to tearing off the dispensed stamps from the stamps remaining within the machine.

In such machines, the stamps tend to slip sideways off the teeth of the feed-roll or to twist longitudinally and to thereupon foul the operation of the entire machine. In most such machines, the feed-guide is either too loose or too tight. If too loose, the stamps will slip off the feed-roll and if too tight, the stamps will become stuck between the feed-roll and the feed-guide and foul up the machine. In addition, most such machines have a jerky movement of parts caused by the operating solenoids so that the parts of the dispensing mechanism tend to bounce forwardly and backwardly. This bouncing frequently causes extra stamps to be issued or an insufficient number of stamps to be dispensed, depending upon the direction of the bouncing movement.

It is a general object of our invention to provide a stamp dispensing machine for quickly and accurately dispensing postage stamps and the like which is simple and inexpensive in construction and operation.

A more specific object is to provide a stamp dispensing machine having a minimum number of parts and a substantially lesser number than in stamp dispensing machines heretofore known, and yet performing in an improved manner.

Another object is to provide a novel stamp dispensing machine which is unusually simple and inexpensive in construction and is constructed to drive the feed-roll in a more positive and better controlled manner.

Another object is to provide a novel and improved stamp dispensing machine which is a highly sanitary and expedient device for dispensing stamps in a very rapid and accurate manner.

A further object is to provide a novel stamp dispensing machine which will present the stamps in a highly desirable manner to the customer so as to facilitate ready engagement thereof by the customer with his fingers.

Another object is to provide a novel stamp dispensing machine which is electrically operated and constructed to automatically and immediately break the running circuit thereof upon the dispension of the last stamp of the stamp roll.

Another object is to provide a stamp dispensing machine constructed to function in cooperation with a telephone dial for actuation of the former by the latter but to eliminate burning of the contact points of the dial.

Another object is to provide a novel and improved stamp dispensing machine constructed to positively preclude the extraction by the customer of more stamps than those to which he is properly entitled.

Another object is to provide a novel stamp dispensing machine constructed to positively control the stamp dispensing mechanism in order to preclude sideways slipping of the stamps off the teeth of the roll and/or longitudinal twisting of the stamps as they pass through the machine.

Another object is to provide a novel stamp dispensing machine constructed to prevent bouncing of the parts of the dispensing mechanism and the consequent erratic and inaccurate dispensation of stamps as well as the fouling of the machine.

Another object is to provide a stamp dispensing machine constructed to insure a smooth passage of stamps between the feed-roll and the stamp feed-guide without any sticking of the same between these parts and without the consequent fouling of the dispensing apparatus and without permitting stamps to slip off the feed-roll.

Another object is to provide a novel stamp dispensing assembly constructed to facilitate the loading and unloading of the individual dispensing mechanisms thereof.

Another object is to provide a novel stamp dispensing machine constructed to require only a single solenoid for the complete dispensing operation of one of the dispensing mechanisms.

Another object is to provide a novel stamp dispensing assembly with dispensing mechanisms constructed to resemble a cartridge unit capable of ready insertion and removal into the assembly, and of replacement thereof with a substitute.

These and other objects and advantages of our invention will more fully appear from the following description made in connection with the accompanying drawings wherein like reference characters refer to the same parts throughout the several views and in which:

Figure 1 is a plan view of one embodiment of our stamp dispensing assembly;

Figure 2 is a vertical sectional view taken through one of the stamp dispensing machines along the line 2—2 of Figure 1;

Figure 3 is a fragmentary vertical sectional view taken along line 3—3 of Figure 1;

Figure 4 is a sectional view taken along line 4—4 of Figure 2; and

Figure 5 is a schematic view showing the electrical wiring of the stamp dispensing assembly.

One embodiment of our invention may include as shown in Figs. 1–5 a stamp vending assembly indicated generally as A and shown in Figure 1. This stamp vending assembly consists of a rectangularly shaped metal box-like frame 7, the interior of which is accessible from the top and which holds a plurality of cartridge-like stamp vending machines to be hereinafter described. Extending transversely of the frame 7 is a channel 8 within which is mounted a plurality of female plugs 9, each of which is electrically connected to a different telephone-type dial (not shown except schematically in Fig. 5) such as are described in United States Letters Patent No. 2,258,912, issued October 14, 1941, to Herbert Steen and George R. Sutherland. At the rear wall of the frame 7 there is mounted a plurality of adjacent upright channel members 10, each of which is disposed

opposite one of the female plugs 9. Secured to the forward wall of the frame 7 by screws or bolts 11 is a plurality of adjacent retaining members 12. These retaining members are spaced slightly from the inner surface of the forward wall of the frame 7 as best shown in Fig. 1.

Mounted in the channels 10 and extending between the forward and rearward walls of the frame 7 and engaging the retaining members 12 are a plurality of stamp vending machines indicated generally as M. For the sake of illustration, only one of such machines has been shown in Fig. 1 and the construction of each of these machines has been shown in greater detail in Figs. 2–4, while the electrical circuit used in connection therewith is shown in Fig. 5. These stamp vending machines M are removable cartridge-like units and are adapted to be slid into position to engage the opposite channel members 10 and retaining members 12. They may be readily removed and a substitute machine may be readily reinserted while the machine which has been removed is refilled with a fresh supply of stamps.

Each of the stamp vending machines M, as shown, is comprised of a pair of spaced parallel panels 13 and 14 which are open at the rear. At the rear of each machine the panels 13 and 14 are spaced just sufficiently so that they will slide snugly into the channel member 10. The panel 14 is equal in length to the distance between the iner surface of the channel 10 and the forward side wall of the frame 7. The other panel 13 has a vertically extending flange 15 at its forward end extending inwardly toward the opposite panel 14 as best shown in Fig. 1. This flange 15 is adapted to engage the retaining member 12 as is clearly shown so that the machine will be guided properly during its insertion and will be held snugly in position while in use. Each of the panels 13 and 14 has a pair of opposed slits 16 and 17 respectively formed in the upper edge thereof and extending downwardly from the upper edge. These panels 13 and 14 are held in spaced relation by bolts 18, 19 and 20, each of the bolts carrying spacer sleeves between the panels to maintain the latter in the proper spaced relation.

Pivotally mounted on the bolt 20 is a triangularly shaped pivot plate 21 which extends rearwardly from that bolt and is therefore also pivotally mounted on the panels. This plate 21 carries a locking pin 22 at its rear and upper corner, the locking pin being frictionally engaged in the slots 16 and 17 of the two panels. Mounted at the lower corner of the plate 21 and extending toward the opposite panel 14 is a roll support post 23, the diameter of which is less than the diameter of the hole in the stamp roll 24 from which the individual stamps 24*a* pass into the feeding mechanism of the machine. As best shown in Fig. 2, the stamps extend upwardly and over the post 20 to the dispensing mechanism which has been indicated generally as D.

Each of the machines M includes a stamp feed roll indicated generally as 25. As shown, this feed roll 25 is made of white nylon moulded around a metal roll and has a star shaped gear 26 at one of its ends. This stamp feed roll 25 is rotatably mounted at the upper portion of the forward end of the panels 13 and 14 and extends transversely between the panels. As best shown in Fig. 4 it has a pair of circumferentially extending groves 27 and 28 formed therein and spaced longitudinally thereof. Four rows of teeth 29 are spaced equidistantly on the circumference of the feed roll 25 and are arranged longitudinally of the roll. As best shown in Fig. 4, each row of teeth has nine teeth therein, three of which are positioned on each side of the grooves 27 and 28. These teeth are also formed of nylon and are integral with the feed roll 25 and are positioned so that each will enter one of the perforations which are standardized in the stamps rolls used in the United States post offices.

The star shaped gear indicated generally as 26 has a plurality of teeth 30, each of which has a convexly shaped driving surface 31 and a planar locking surface 32.

Extending between the two panels 13 and 14 at the upper portions thereof adjacent the feed roll 25 is a pin 33 which carries a bale 34. Mounted on the pin 33 is a pair of strippers 35 and 36. These strippers have concave surfaces complementary to the bottom surfaces of the grooves 27 and 28 as best shown in Fig. 2. These strippers extend into the grooves 27 and 28 and their concave surfaces ride along the bottom thereof. Each has a substantially vertically extending guide portion 35*a* and 36*a* respectively.

Extending between the panels 13 and 14 and mounted thereon is a pivot pin 37. Mounted on this pivot pin is a journal 38 which extends approximately one-half the length of the pin and has a pivot arm 39 extending upwardly and forwardly therefrom. The free end portion of the pivot arm 39 carries a stamp guide 40 which has a concave guiding surface 41 and three sets of adjacent channels 42 formed therein to accommodate the teeth 29 of the feed roll 25 as the feed roll rotates. A single slot 43 is formed through the stamp guide 40 opposite the channel 27. A microswitch 44 is mounted on the stamp guide 40 and carries a spring lever 45 which extends across the switch button 46 and into the slot 43. It has a looped portion 45*a* at its free end which normally bears against the stamps 24*a* as they pass between the feed roll 25 and the stamp guide 40. The stamps 24*a* will normally prevent the lever 45 from moving into the channel 27 and in that manner maintains the microswitch 44 in closed position. When there is no stamp between the feed roll and the stamp guide, the lever 45 moves into the slot 27, thereupon releasing the button 46 and breaking the circuit through that switch.

Carried on the journal 38 is a coiled spring 47, one end of which bears against the underside of the stamp guide 40, and the other end of which is anchored upon the lower end portion of an actuating lever 48 urging the lower end portion of that lever rearwardly.

The actuating lever 48 is pivotally mounted on the pivot pin 37 which passes therethrough. The upper end portion of the actuating lever 48 extends laterally to engage a combined feed roll drive and locking member 49. As shown, the upper end portion of the actuating lever passes through the central portion of the combined feed roll drive and locking member 49 through openings provided to accommodate the same. The combined feed roll drive and locking member 49 is mounted on a journal 50 which is carried by the pivot pin 37 and extends approximately one-half the length of the pin toward the opposite panel 14.

The drive and locking member 49 has two opposed dogs, one of which extends within the orbit of the teeth 30 of the star gear 26. One of the dogs 51 has an abutment surface 51*a* adapted to engage the locking surface 32 of the teeth 30. This dog 51 is constantly urged by the spring 47 toward locking position. When this dog 51 is pivoted to the broken line position shown in Fig. 3 about the pin 37, the other dog 52 swings in and engages the convex driving surface 31 of the adjacent tooth 30 and moves the star gear 26 to the broken line position shown in Fig. 3. While so doing, the other dog 51 will swing clear of the teeth 30 as shown in Fig. 3, but not until after the driving dog 52 is well within the orbit of the teeth 30.

Upon the return of the combined feed roll drive and locking member 49 to the solid line position shown in Fig. 3, the locking dog 51 engages the convex surface 31 of the tooth 30 which it formerly engaged in order to lock the gear and drives it forwardly the second half of the arc of rotation necessary for the feed roll 25 to dispense a single stamp.

The lower end of the actuating lever 48 is pivotally connected at 53 to the core 54 of a solenoid 55. This

solenoid 55 is electrically connected with a pair of contact points 56 and 57 which are connected to each other in series. These contact points 56 and 57 are disposed adjacent to a relay 58 and one of them is movable toward the other when the relay is actuated as can be clearly seen from Fig. 2. The relay 58 is electrically connected to a telephone-type dial such as has previously been referred to herein. This telephone-type dial unit illustrated schematically in Fig. 5 provides electrical pulses of 50 milliseconds duration at a pulse repetition rate of 10 pulses per second. The contacts 56 and 57 are connected in series in order to provide faster opening action which minimizes the arcing between the contacts and thus protects them from burning. The relay 58 is electrically connected with a male electrical plug 59 which, as best shown in Fig. 2, is mounted so that the prongs thereof will be inserted in one of the female prongs 9 when the cartridge unit M is inserted into the assembly A. A condenser 60 is connected across the contacts 56 and 57 for suppression purposes. A resistor 61 is also electrically connected across the relay 58 for suppression purposes. Another resistor 62 is connected across the solenoid 55 for suppression purposes. A cartridge-type fuse (not shown) is included in the circuit and is disposed within the fuse post 63.

The condenser 60 functions to maintain voltage briefly across the solenoid while the relay contacts 56 and 57 are opening. The resistor 61 shunts the relay coil in order to limit the back E. M. F. developed as the relay coil current is interrupted by the dial contacts. This minimizes spark erosion of the dial contacts. The resistor 62 shunts the solenoid coil so as to limit the back E. M. F. developed as the solenoid coil current is interrupted by the relay contacts. This minimizes spark erosion of the relay contacts.

It will be noted that at the end of the feed roll 25 there is a metal disc 65 which is slightly larger in diameter than the diameter of the feed roll. This metal disc 65 is positioned so that the outer edge of the stamp guide 40 will abut thereagainst. The radius of the disc 65 exceeds that of the feed roll 25 by an amount slightly greater than the thickness of one of the stamps 24*a* and thus serves to hold the feed guide in a predetermined and rigid relation to the feed roll 25.

The microswitch 44 is electrically connected in the main line circuit so that when it is broken the complete machine cannot be energized and therefore if the machine is connected with a coin actuating unit, it becomes impossible for it to accept coins and operate when the machine is empty.

Shown schematically in Fig. 5 is a 25 watt resistor 64 which serves as a heater for the assembly A. This heater uses a sufficiently low wattage so as to avoid melting the glue on the stamps and at the asme time produces enough heat to maintain the moisture content of the air within the assembly at a sufficiently low level so as to avoid the stamps becoming sticky.

Fig. 5 shows schematically the electric circuit used for the entire assembly A. The wiring for six different dispensing machines M is shown schematically and these are all tied together and connected to a plurality of the telephone-type dials which are also shown schematically. The solenoid and its resistor 62 and condenser 60 and the relay 58 and its resistor 61 are all shown schematically in their relation to each other.

In operation the user merely dials the telephone-type dial in accordance with the number of stamps which he wishes to receive. For example, if he desires five stamps, he dials the number five on the dial and as the dial returns to its original position, five separate electrical impulses will be sent out by the dial. Each of these impulses will actuate the relay 58 once, and for each energization of the relay 58 the contact points 56 and 57 will open and close once. With each opening and closing of the contact points 56 and 57 the solenoid 55 will become actuated once so that the core 54 will move inwardly and back to its original position as shown in solid lines in Fig. 2 for each impulse received. The purpose of the relay 58 and the contact points 56 and 57 is to avoid a high current going through the contact points of the telephone-type dial and thus burning of these points is avoided. A relatively low current passes through the relay 58 while a relatively high current passes through the contact points 56 and 57 and through the solenoid 55 to actuate the latter.

With each actuation of the solenoid 55, the actuating lever 48 will be drawn toward the solenoid coil by the core 54 and against the urge of the spring 47. The movement of the lower end portion of the actuating lever 48 to its extreme position adjacent the solenoid coil 55 causes the locking dog 51 to swing outwardly away from the star gear and at the same time the driving tooth 52 swings inwardly and engages the convexly shaped driving surface 31 of one of the teeth 30 so as to rotate the star gear one-half the distance of the arc of rotation of the feed roll 25 which is required to dispense a single stamp. The actuating lever 48 and the two dogs 51 and 52 will then be in the position shown in the broken lines in Fig. 3. Upon the breaking of the current to the relay 58 as a result of the dial contacts separating, the contact points 56 and 57 will separate and the current to the solenoid 55 will be broken whereupon the spring 47 draws the core 54 back to the solid line position shown in Figs. 2 and 3. In so doing the locking dog 51 engages the convex driving surface of the tooth, which it previously engaged to hold the star gear in locked position, and compels the star gear to rotate the remaining one-half of the arc of rotation required for the dispensation of that single stamp. In other words, the star gear is positively driven for the dispensation of a single stamp through the first half of its arc of rotation by the dog 52 and through the second half of its arc of rotation by the dog 51. At the completion of the driving action the dog 51 will rest against the planar surface of the succeeding tooth to positively lock the star gear against further rotation. It will be noted that the combined drive and locking member 49 is connected essentially directly to the solenoid 55.

The feed guide 40 is a substantial improvement over the feed guides previously known in the stamp vending machine art. The feed guide 40 is rigidly mounted for pivotal movement about the pin 37 and is rigidly spaced from the feed roll 25 so that there is always a predetermined spacing between the guiding surface of the feed guide 40 and the exterior of the feed roll 25. This spacing is just slightly greater than the thickness of a stamp so that the stamps are never pinched too tightly with consequent fouling of the machine and are never held so loosely that the stamps may slip sideways or twist longitudinally. One of the serious disadvantages of previous stamp vending machines has been that the strip of stamps will either slip sideways off the teeth of the feed roll with consequent fouling of the machine or they will twist longitudinally as a result of the dispensed stamps being torn from the strip of stamps. It will be noted that the upper edge of the feed guide terminates directly behind the rows of teeth 29 and that this upper end serves substantially as a straight edge against which the stamps may be torn so that the user may be assured that the stamps will tear along the perforated lines and not therebetween. At the same time the disc 65 and the spring 47 keep the stamp guide 40 at a predetermined and optimum spacing from the circumferential surface of the feed roll 25.

It will be noted that the strippers 27 have substantially vertically extending portions which cause the stamps to be turned and extend vertically so as to be presented in a handy manner to the user.

When the supply of stamps has run out for one of the machines M, it is a very simple matter to reload the

same. The machine M is seized by the bale 34 and lifted upwardly so that the male plugs 59 and the female plugs 9 separate and the entire unit is lifted free of the assembly A. A previously filled machine is immediately reinserted into the assembly and the empty machine can then be refilled at the convenience of the user. This is effected by merely swinging the triangularly shaped plate 21 upwardly and outwardly until the stamp roll post 23 is clear of the panels 13 and 14. A new stamp roll is then applied to the post 23 and the strip of stamps is led over the post 39 and its spacer to the stamp feed guide 40. The stamp feed guide 40 is then forced downwardly in spaced relation relative to the disc 65 and the stamps can be easily slid between the feed roll 25 and the stamp feed guide 40, the user being careful to insert the teeth 29 of the feed roll into the perforations of the stamp. The stamp feed guide 40 is then released and the triangularly shaped plate is swung back into the position shown in Fig. 2 between the panels 13 and 14 whereupon the locking pin 22 will be frictionally engaged by the slots 16 and 17 of the panels. The machine is then ready for instant use.

One advantage of our machine is its extreme simplicity. It will be noted that only a single solenoid is required for the operation of the machine and that an absolute minimum of parts is utilized to effect the dispensation of stamps. Because of the minimum of parts and its simplicity, the machine is very easy and inexpensive to maintain in proper repair and it functions simply and efficiently.

Another advantage of our machine is that it is impossible for an erroneous number of stamps to be dispensed as a result of bouncing of the mechanism. The combined feed roll drive and locking member 49 is so constructed that one of the dogs 51, 52 is at all times within the arc of the teeth 30 of the star gear and thus it is impossible for too few or too many stamps to be dispensed. There is no "bouncing" problem in the use of our machine.

Another advantage of our machine is that it is impossible for the stamps to be twisted sideways and to obtain additional stamps by so doing after the desired number of stamps has been dispensed. This is especially important when such a machine is to be used in conjunction with a coin actuating unit. In all of the machines previously known it has been possible by carefully tearing the stamps and twisting them sideways in so doing to extract more stamps than was intended to be dispensed by the machine and therefore unscrupulous persons could cheat the operator of the machine by obtaining additional stamps which were not paid for by the customer. One of the main reasons such unwarranted dispensations could be made was that the stamp feed guide was resiliently mounted and the stamps could be readily twisted sideways or longitudinally. Our machine positively prevents such unwarranted extractions from the machine.

It will, of course, be understood that various changes may be made in the form, details, arrangement and proportions of the parts without departing from the scope of our invention which consists of the matter shown and described herein and set forth in the appended claims.

What is claimed is:

1. In a stamp dispensing machine, a holder for a roll of stamps in strip form, a stamp feed-roll positioned to receive said strip of stamps, a single shiftable combined feed-roll-drive and feed-roll-locking and bounce-preventing member, said feed-roll including means mounted in position to be engaged by said member, and mechanism for operating said member to cause said member to drive said feed-roll and to lock the same against undesired movement, said member constituting the sole means for holding said feed-roll against undesired movement.

2. In a stamp dispensing machine, a rotary stamp feed-roll, a single shiftable combined feed-roll-drive and feed-roll-locking and bounce-preventing member disposed in driving and locking relation to said feed-roll, said feed-roll including means mounted in position to be engaged by said member, and mechanism for operating said member to cause the same to drive said feed-roll and lock it against undesired movements, said mechanism including an electrically energized actuator for positively operating said member to drive said feed-roll, said member constituting the sole means for holding said feed-roll against undesired movement.

3. In a stamp dispensing machine, a holder for a roll of stamps in strip form, a feed-roll positioned to receive said strip of stamps, a single shiftable combined feed-roll-drive and feed-roll-locking and bounce-preventing member arranged in driving and locking relationship to said feed-roll, said feed-roll including means mounted in position to be engaged by said member, and a solenoid operatively connected to said member to cause the same to drive said feed-roll when said solenoid is actuated, said member constituting the sole means for holding said feed-roll against undesired movement.

4. In a stamp dispensing machine, a holder for a roll of stamps in strip form, a stamp feed-roll positioned to receive said strip of stamps, a single shiftable combined drive, locking and bounce preventing member for said feed-roll positioned in driving and locking position relative to said feed-roll, said feed-roll including means mounted in position to be engaged by said member, said member constituting the only locking element for said feed-roll, resilient means for holding said member in feed-roll-locking position, and a solenoid operatively connected to said member to cause the same to drive said feed-roll when said solenoid is actuated.

5. In a stamp dispensing machine, a rotary stamp feed-roll, a shiftable combined feed-roll drive and feed-roll-locking and bounce-preventing member disposed in driving and locking relation to said feed-roll, said member constituting the sole element for locking said feed roll against undesired movement and being shiftable between two extreme positions and positively rotating said feed-roll during its movement from one extreme position to the other, only a portion of the distance necessary to dispense a single stamp and positively rotating said feed-roll during the return of said member to said extreme position through the remainder of the distance necessary to dispense such stamp and thereupon locking said feed-roll against further movement, and mechanism for operating said member from one of its extreme positions to the other and back again.

6. In a stamp dispensing machine, a rotary stamp feed-roll, a generally star-shaped gear connected to said feed-roll in driving relation and having outwardly extending portions, a combined feed-roll-drive and feed-roll-locking and bounce-preventing member disposed in driving and locking relation to said gear, said member constituting the sole element for locking said feed roll against undesired movement and being shiftable and having a pair of opposed driving dogs adapted to engage said outwardly extending portions of said gear to drive the same, one of said dogs being at all times disposed within the orbit of said outwardly extending gear portions to positively preclude undesired forward rotation of said roll, and mechanism for intermittently operating said member to cause said dogs to drive said gear and said roll in order to dispense stamps.

7. In a stamp dispensing machine, a stamp feed-roll, a combined feed-roll-drive and feed-roll-locking and bounce preventing member having a pair of dogs thereon disposed in driving and locking relation to said feed-roll, said member constituting the sole locking member for preventing undesired movement of said feed roll, and mechanism for intermittently operating said member to cause the same to intermittently drive siad member and lock it against undesired movements.

8. In a stamp dispensing machine, a stamp feed-roll, a generally star-shaped gear connected to said feed-roll in driving relation, a combined feed-roll-drive and feed-roll-

locking bounce-preventing member disposed in driving and locking relation to said gear, said member constituting the sole locking means of the machine for preventing undesired movement of said feed roll, said gear having outwardly extending teeth with convexly shaped trailing surfaces, said member being shiftable and having a pair of opposed driving dogs adapted to intermittently engage the convexly shaped trailing surfaces of a pair of said teeth when said member is shifted to drive said feed-roll forwardly and adapted to lock said gear and said roll against undesired movement between shifting movements of said member, and mechanism for intermittently shifting said member to cause said dogs to so engage said teeth.

9. In a stamp dispensing machine, a stamp feed-roll, a generally star-shaped gear connected to said feed-roll in driving relation, a combined feed-roll-drive and feed-roll-locking bounce-preventing member disposed in driving and locking relation to said gear, said member constituting the sole locking means of the machine for preventing undesired movement of said feed-roll, said gear having outwardly extending teeth with locking surfaces and opposed curved driving surfaces, said member being shiftable and having a pair of opposed driving dogs arranged to intermittently engage the curved driving surfaces of a pair of said teeth when said member is shifted to drive said feed-roll forwardly, one of said dogs being arranged to engage the locking surface of one of said teeth to lock said gear and said roll against undesired movement between shifting movements of said member, and mechanism for intermittently shifting said member to cause said dogs to so drive said teeth.

10. In a stamp dispensing machine, a stamp feed-roll, a generally star-shaped gear connected to said feed-roll in driving relation, a combined feed-roll-drive and feed-roll-locking bounce-preventing member disposed in driving and locking relation to said gear, said gear having outwardly extending teeth with leading locking surfaces and opposed convexly shaped driving surfaces, said member constituting the sole locking means for holding said member against undesired movement and being shiftable and having a pair of opposed driving dogs extending inwardly along opposite sides of one of said teeth and arranged to intermittently engage the convex driving surfaces of a pair of said teeth when said member is shifted to drive said feed-roll forwardly, one of said dogs being arranged to engage the leading locking surface of one of said teeth between shifting movements of said member to lock said gear and said roll against undesired movement of said member, and mechanism for intermittently shifting said member to cause said dogs to so drive said teeth and said roll to cause the latter to dispense stamps.

11. In a stamp vending machine, a support, a holder for a roll of stamps swingably mounted on said support and being swingable outwardly beyond the confines of said support to facilitate replacement of a roll of stamps thereon, a feed-roll, a shiftable feed-roll-drive member having a pair of spaced dogs thereon disposed in driving and locking relation to said feed roll as said member shifts, and mechanism for intermittently operating said member to cause the same to intermittently drive said feed-roll and thereby cause the latter to dispense stamps, said member also constituting the sole means for locking said feed roll against undesired movement.

12. In a stamp dispensing machine, a stamp feed-roll, a generally star-shaped gear connected to said feed-roll, in driving relation, a combined feed-roll-drive and locking bounce-preventing member disposed in driving and locking relation to said gear, said gear having outwardly extending teeth with driving surfaces, said member constituting the sole means for holding said feed-roll against undesired movement and being shiftable back and forth and having a pair of opposed driving dogs arranged to intermittently engage the driving surfaces of a pair of said teeth when said member is shifted to thereby drive said feed-roll forwardly, and a spring-loaded solenoid connected to said member in operating relation and when energized causing the same to shift so that one of its dogs will engage the driving surface of one of said gear teeth and thereby move said feed-roll through a portion of the arc of rotation required to dispense a stamp and upon returning to non-energized position causing said member to shift so that its other dog will engage the driving surface of one of the other of said gear teeth and thereby move said feed-roll through the remainder of the arc of rotation required to dispense the stamp.

13. In a stamp dispensing machine, a stamp feed-roll, a generally star-shaped gear connected to said feed-roll in driving relation, a combined feed-roll-drive and locking bounce-preventing member mounted in driving and locking relation to said gear, said gear having outwardly extending teeth with driving surfaces and with locking surfaces, said member constituting the sole means for holding said feed-roll against undesired movement and being shiftable back and forth and having a pair of opposed driving dogs arranged to intermittently engage the driving surfaces of a pair of said teeth when said member is shifted to thereby drive said feed-roll forwardly and a spring-loaded solenoid operatively connected to said member and holding one of said dogs in locking position against the locking surface of one of said teeth when in non-energized position and releasing said tooth upon being energized.

14. In a stamp dispensing machine, a support, a holder for a roll of stamps in strip form carried by said support, a feed-roll mounted for rotation on said support, a rigid post fixedly mounted on said support, a stamp guide pivotally mounted on said rigid post for pivotal movement thereabout to preclude twisting of said stamp guide relative to said fixed roll and resultant misalignment of stamps feeding thereto, a feed-roll-drive member, and mechanism for intermittently operating said member to cause said member to drive said feed-roll to dispense stamps.

15. In a stamp dispensing machine, a holder for a roll of stamps, a feed-roll having a stamp-engaging surface, a stamp guide pivotally mounted adjacent said feed-roll, said stamp guide having a stamp-guiding surface rigidly spaced from the stamp-engaging surface of said feed-roll and cooperating therewith to guide the flow of stamps therealong, and mechanism for intermittently operating said feed-roll to cause the same to dispense stamps.

16. In a stamp dispensing machine, a holder for a roll of stamps, a rotary feed-roll having a stamp-engaging surface with a circumferential recess formed therein, electrically actuated mechanism for intermittently operating said feed-roll to cause the same to dispense stamps, a microswitch electrically connected with said mechanism and feeding electric current thereto when in closed position, and a lever member cammed by said microswitch and normally holding the same in closed position, said lever member being normally separated from said feed-roll by the strip of stamps passing across said feed-roll and between said feed-roll and said lever member and being urged toward said feed-roll, said lever member being movable into said recess of said feed-roll when said stamps are removed from therebetween whereupon said microswitch will move to open position and thereby interrupt the flow of electric current to said mechanism.

17. In a stamp dispensing machine a rotary stamp feed-roll, a stamp guide mounted in cooperating relation with said feed-roll and guiding the stamps fed thereby, a combined feed-roll drive and feed-roll locking member disposed in driving and locking relation to said feed-roll, said member constituting the sole means for holding said feed roll against undesired movement, mechanism operating said member and causing the same to drive said feed-roll and lock it against undesired movements, said mechanism including an electrically energized actuator for positively operating said member to drive said feed roll, said stamp guide having an opening formed therethrough, and a circuit breaker mounted ad-

jacent said opening in said stamp guide and having a portion thereof extending into said opening and bearing against the stamps as they pass between said feed-roll and said stamp guide, the stamps serving to hold said circuit breaker in circuit-closing position, the portion of said circuit breaker extending into said opening being urged inwardly towards said feed roll whereby it will move inwardly when there is no stamp between said feed-roll and said feed-roll guide and thereby break the circuit to said mechanism.

18. In a stamp dispensing machine, a rotary stamp feed-roll, a stamp guide mounted in cooperating relation with said feed-roll and guiding the stamps fed thereby, a rigid spacer disc mounted adjacent said roll and bearing against said stamp guide and holding the same in a predetermined optimum spaced relation to said feed roll

to permit stamps to pass therebetween, a combined feed-roll drive and feed-roll locking bounce-preventing member disposed in driving and locking relation to said feed-roll, said member constituting the sole means for holding said feed-roll against undesired movement, and mechanism for operating said member to cause the same to drive said feed-roll and lock it against undesired movements, said mechanism including an electrically energized actuator for positively operating said member to drive said feed roll.

References Cited in the file of this patent

UNITED STATES PATENTS

1,979,028	Ewart	Oct. 30, 1934
2,258,912	Steen et al.	Oct. 14, 1941
2,264,647	Stearns	Dec. 2, 1941