E. A. BOLEN.

STAMP VENDING MACHINE.

APPLICATION FILED FEB. 8, 1915.

1,199,961.

Patented Oct. 3, 1916.

3 SHEETS—SHEET 1.

Fig. 1.

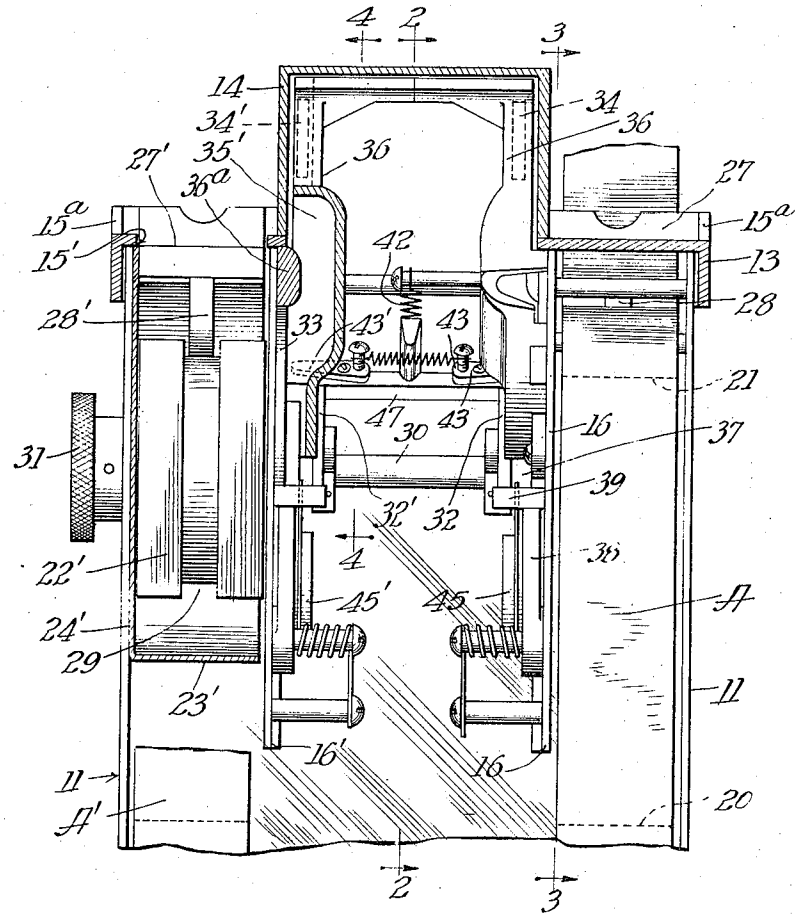
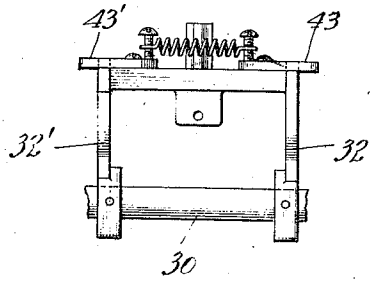


Fig. 5.



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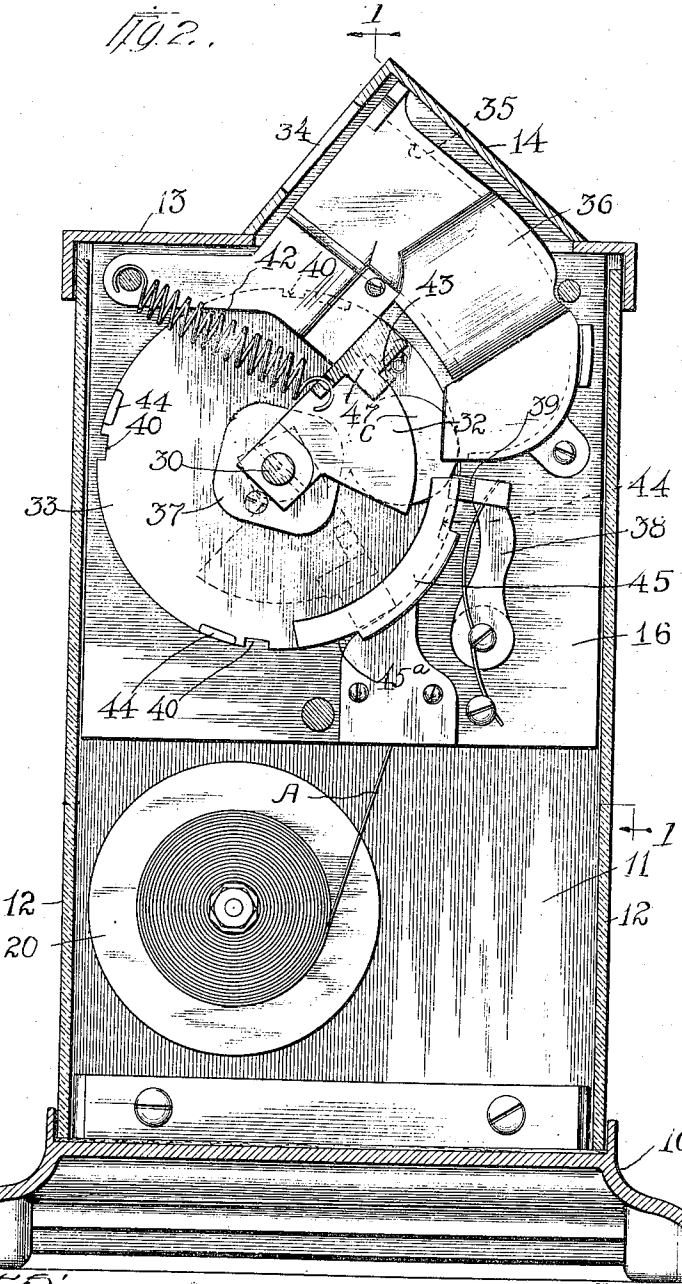
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3 SHEETS—SHEET 2.

Fig. 2.



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3 SHEETS—SHEET 3.

Fig. 3.

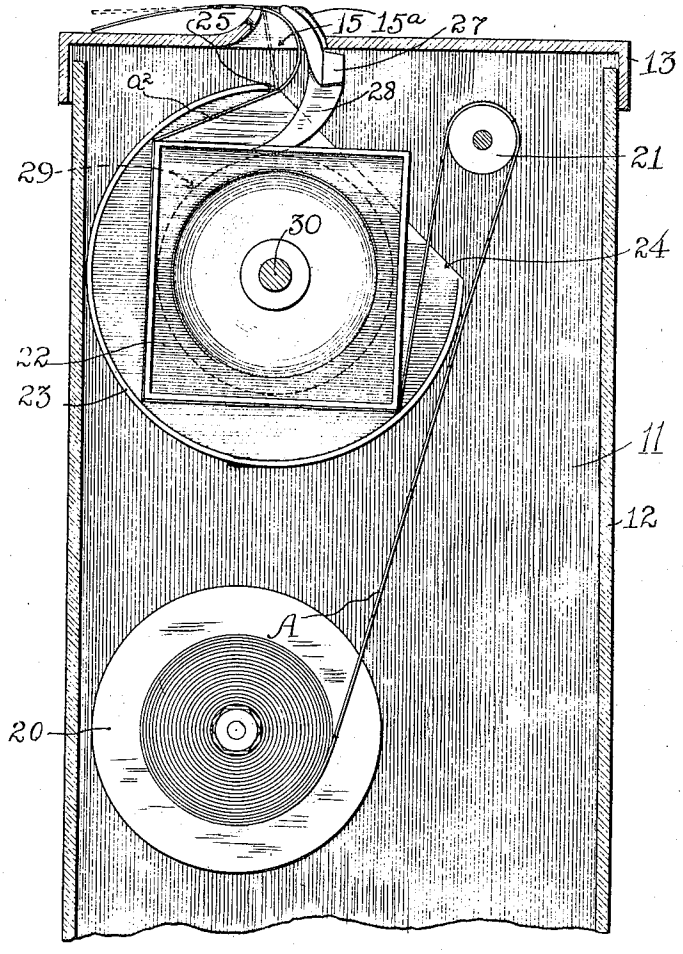
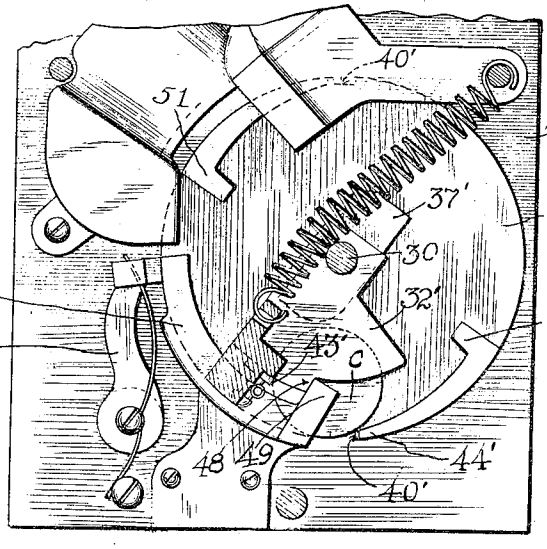


Fig. 1



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UNITED STATES PATENT OFFICE.

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STAMP-VENDING MACHINE.

1,199,961. Specification of Letters Patent. Patented Oct. 3, 1916.

Application filed February 8, 1915. Serial No. 6,690.

To all whom it may concern:

Be it known that I, EMERSON A. BOLEN, a citizen of the United States, residing at Morris, in the county of Grundy and State of Illinois, have invented certain new and useful Improvements in Stamp-Vending Machines, of which the following is a specification.

My invention relates to improvements in stamp vending machines, and has for its general object to provide a stamp vending machine that is simple and inexpensive in construction, positive, certain, and efficient in operation, and durable, easily operated, and not liable to get out of order, in use.

Other and particular objects of my invention will become apparent to those skilled in the art from the following description taken in conjunction with the accompanying drawings in which—

Figure 1 is a vertical section, taken generally on line 1—1 of Fig. 2, but with parts broken away, of a machine embodying my invention; Fig. 2 is a transverse vertical section on line 2—2 of Fig. 1; Fig. 3 is a section on line 3—3 of Fig. 1; Fig. 4 is a section on line 4—4 of Fig. 1; and Fig. 5 is a detail view of the power-lever yoke.

In the particular embodiment of my invention herein shown I have illustrated a double machine that is particularly adapted for the vending of stamps of two-cent and of one-cent denominations, and that is arranged for operation, upon deposit of a nickel in one or the other of its coin slots, to deliver either two 2-cent stamps or four 1-cent stamps; but it will be apparent to those skilled in the art that features of my invention may be embodied in machines for other particular uses whether coin controlled or otherwise, without departure from the spirit of my invention and within the scope of the appended claims.

In the embodiment of my invention shown in the drawings, the machine frame conveniently consists of a base 10, side plates 11, front and back glasses 12 and cap 13 that has the coin-chute cupola 14 and the two stamp delivery mouths 15 and 15′. Frame plates 16 and 16′, suitably braced to each other and to the side walls 11, assist in supporting the operating mechanism of the two sections of the machine.

Except for some particulars of difference illustrated in Figs. 2 and 4, predicated on the fact that one section of the machine is intended to deliver four one-cent stamps while the other section of the machine is intended to deliver two two-cent stamps, the two sections are identical in construction, and therefore I will first describe the operating mechanism of one section only, like parts being found in the other section identified by the same numeral, distinguished by the exponent prime (′).

From a stamp-roll spool 20, in the lower portion of the machine the strip A of two cent stamps is led over guide roller 21 near the top of the casing, thence around a delivery rotor 22 for delivery through the mouth 15 (see Fig. 3). This mechanism is included between the faces of the side plate 11 and the frame plate 16, and the parts are all of a width appropriate for one stamp. The rotor 22 is an equilateral polygon, preferably a square, and preferably having each side surface equal in length to the length of a plurality of connected stamps. The square form of rotor shown receives two stamps on any of its surfaces, and its arrangement with respect to the guide roll 21 and the mouth 15, both of which are above the rotor axis, is such that the stamp strip, led around the rotor, always engages at least three corners of the square. The sharp angling of the rotor corners is primarily relied upon to give driving engagement between the rotor and the stamp-strip, but to aid in the constant maintenance of such engagement, I provide means for coaction with the outer surfaces of the stamps that are carried by the strip, constantly to prevent the strip from leaving its effective contact with the rotor. In the specific construction I prefer that such retaining means take the form of an arcuate guard or retainer 23, substantially as wide as the rotor 22 and having its inner periphery struck on a proper radius just to clear the corners. Preferably, the angular extent of this retainer should be somewhat more than 270 degrees, so that at all times three of the corners, at least, of the rotor may be in cooperated relation therewith, and in manufacture I find it advantageous to make this retainer the rim of a cup shaped member the bottom 24 of which is secured flat against the side piece 11. A stamp-strip-severing

instrumentality should be provided below delivery mouth 15, and to this end I sharpen the transverse edge of the retainer, as at 25, to form a severing knife against which the stamp strip may readily be torn.

For guiding the leading edge of the stamp strip to delivery position outside of the casing, so that the delivered stamps may be grasped and torn off against the edge 25, I provide a curler 27 mounted between the frame plate 16 and side wall 11, curving out through the mouth 15 between the lips 15^a, and having a downwardly extending curved finger 28, that, together with the body of the curler, is concavely curved on its receiving side and that dips into a groove 29 in the polygonal rotor.

The rotor moving mechanism, to be described, always stops the rotor movement in the position shown in Fig. 3, with the severing device 25 above the mid-span of a side of the polygon, at a chord-distance from the nearest stamp bearing corner of the rotor equal to the length of one stamp. Accordingly, assuming the stamp-pair that in Fig. 3 is shown as protruding from the mouth to be torn off against the severing means 25, a 90 degree movement of the rotor will advance the stamp indicated at a^2 along the curler until the apparatus again occupies the position identically as shown in Fig. 3, save that the rotor has advanced its quarter of a turn. In this way, it will be seen, I insure that the stamps will never be torn off anywhere except at the severing device 25, that the leading stamp left on the strip will be immediately in position for coaction with the curler, and that at no time will less than three of the corners of the rotor be in active service effectively to propel the stamp strip.

The means for driving the rotor in rotation consists of a transverse shaft 30, loosely supporting the rotor, and carrying in fast relation the turning knob 31 on the exterior of the machine and a power arm or lever 32 inwardly spaced from plate 16. A control member 33 in the form of a disk, lies against the inner face 16, loose on shaft 30 and fast with respect to rotor 22 so that it constitutes a part of the rotative stamp propelling means. The power lever 32 is connectible, preferably through the intermediary of a coin or token C with the disk or control member, 33, of the rotatable stamp-propelling structure, and one available form of coin handling means I will now describe, referring particularly to Fig. 2. The coin, when inserted through a slot 34 in the cupola 14, travels down a chute or channel 35 that is formed in the chute casting 36 in coaction with the side wall of the cupola and with a spacer or side plate 36′ that lies against the plate 16, and that directs the coin laterally beside the disk 33. The coin falls from the coin chute to position shown in Fig. 2, where it lies with its sides between the disk 33 and the sector-shaped power lever 32, and bears at its edge, at opposite points on the lower arc, against a suitable hub block 37, fast on the disk 33, and against the latching nose 39 of a spring pressed pawl 38. This pawl-nose 39 normally engages one of a series of notches 40 formed in the periphery of disk 33, and normally positively locks the rotary stamp delivery mechanism in the position shown in Fig. 3. When now the knob 31 is turned, moving the power lever 32 against the tension of its return spring, 42, a knuckle-pivoted pawl 43 projecting laterally into the space above the coin, engages said coin C, and forces it downward. Said coin, when so moved, first wedges the nose 39 of the holding pawl 38 out of engagement with its notch 40, so freeing the rotary stamp-delivery structure for rotation. Further movement of the coin by the power lever brings the edge of the coin into engagement with a fixed lateral lug 44 just in advance, circumferentially, of the notch 40, in the disk 33. The coin, when in such position, acts as a positive connector between the power arm 32 and the rotative stamp delivery mechanism, and, of course, moves rotatively with the two parts that it connects. A guard casting 45 overlying a portion of the periphery of the disk 33, and spaced by the coin-width from the side face of said disk, is suitably secured to the plate 16, and insures that the coin will be maintained in proper relation to the disk until it has completed its connecting function and has been dropped, beyond the end of the guard, to fall on the bottom of the casing. When the lever arm has moved through its appropriate arc to turn the disk 33 through 90 degrees of rotation, its further progress is positively prevented.

A single stop-mechanism will effectively serve the power levers of both sections of the machine and therefore I prefer that the two power levers 32 and 32′ be connected by a solid bridge or yoke-piece 47 on which the return spring 42 works, and that one of said power levers (in this instance the lever 32′, Fig. 4) be provided with a shoulder 48 to act against the stop-lug 49 that may be an integral part of the guard 45′.

On the side of the machine shown in Fig. 2 that deliver two two-cent stamps, a single oscillation of the power lever 32 is all that is required for full performance of the function of the machine. Therefore it is preferable that when the disk 33 has been sufficiently moved so that pawl 38 may engage the next succeeding notch 40 of the disk 33, and the pressure on the power lever that holds the coin against the lug 44 is

removed, the coin may immediately drop into the bottom of the casing, and to this end the guard structure 45 is cut away peripherally as at 45a. On the other side of the machine, however, where two oscillations of the power lever, and two quadrant movements of the disk 33 are necessary to deliver four one-cent stamps, the guard is preferably made peripherally longer so that the coin does not drop until the second oscillation of the power lever is being effected. Also on this "one cent" side of the machine, shown in Fig. 4, the structure of the disk 33′ is changed in that only two notches 40′ are provided for coaction with the pawl 38′, at 180 degrees spacing, and at suitable positions on the inward face of the disk 33′ are provided two lugs or ratchet-teeth 51 arranged in the path of pawl 43′, so that after the pawl 43′ has moved the disk 33′ one quadrant of rotation, to the position shown in Fig. 4, the return of the power lever 32′ to normal position may engage pawl 43′ with the next succeeding lug 51, and therefore, without the interposition of the coin, said power arm may, upon oscillation a second time, carry the disk 33′ through a second quadrant of rotation. Thus it will be manifest that on the "one cent" side of the machine the disk 33′ may be twice moved through a quadrant of rotation as the result of the insertion of a single nickel, whereas on the "two cent" side of the machine, insertion of a nickel is necessary to permit each individual quarter-rotation of the disk 33.

It will be understood by those skilled in the art that while I have herein described in some detail a particular embodiment of my invention I do not desire to be understood as limiting my invention to the detailed structure shown and described, further than as specified in the claims; and that many changes in construction and arrangement may be made without departure from the spirit of my invention and within the scope of the appended claims.

Having described my invention what I claim is:—

1. In a machine for dispensing stamps or the like, the combination of a polygonal driver, grooved between its sides to circle-form, a curler having a finger coöperating with said groove and means for rotating said driver.

2. In a machine for dispensing stamps or the like, the combination of a polygonal driver, means for supplying stamps thereto, means for maintaining stamps in driving relation to its corners, a casing having a delivery mouth, and a curler extending from said delivery mouth into constant coöperation with the polygonal driver, said driver being circularly grooved between its sides to receive the curler.

3. In a machine for dispensing stamps or the like, the combination of a rotatable, polygonal driver, a retainer comprising a cup-shaped member having its rim cut away through a portion of its periphery, a guide roller adjacent one end-edge of said rim, a housing having a delivery mouth adjacent the other end of said rim, said rim constantly coacting with said driver; and means for imparting step by step rotation to said driver to position it in similar normal positions, the end of said retainer rim that is adjacent the delivery mouth being at a stamp-length from the next succeeding corner of a driver face in each normal position of the driver.

4. In a machine for dispensing stamps or the like, the combination of a rotatable, polygonal driver, a retainer comprising a cup-shaped member having its rim cut away through a portion of its periphery, a guide roller adjacent one end-edge of said rim, a housing having a delivery mouth adjacent the other end of said rim, said rim constantly co-acting with said driver; means for imparting step by step rotation to said driver to position it in similar normal positions, the end of said retainer rim that is adjacent the delivery mouth being at a stamp-length from the next succeeding corner of a driver face in each normal position of the driver and a curler extending from said delivery mouth into constant coöperation with the driver, said driver being circularly grooved to receive the curler.

5. In a machine for dispensing stamps and the like, the combination of a polygonal driver having each face equal to two stamp-lengths, means for feeding a stamp strip thereto to be bent around the driver-corners, means for maintaining a stamp strip in operative relation to the driver, means for rotating the driver in steps, a housing having a delivery mouth; means within the casing and adjacent said mouth for severing a stamp-strip between the two corners of the adjacent driver-face, and means for directing a severed stamp-strip end through the delivery mouth on the next step of the driver.

6. In a machine of the character described, the combination of a casing having a delivery mouth, a severing instrumentality in the casing near said mouth, a polygonal driver rotatable in the casing, means for moving said driver in steps to stop with its corners spanning the severing instrumentality, and a curler, at the front of the delivery mouth, coacting with the driver.

7. In a stamp-dispensing machine, the combination of a casing, a polygonal driver therein, means for rotating said driver and a fixed cup-like retainer having an arcuate peripheral wall, mounted on the casing with its said wall overlying at all times a plurality of corners of the driver for holding

a stamp strip bent sharply around the driver corners with only a slight and substantially constant resistance to driver rotation.

8. In a stamp dispensing machine, the combination of a casing having a delivery opening, of a stationary arcuate retainer having a peripheral opening toward said delivery opening, and a rotatable polygonal driver having each face adapted to receive a plurality of strip-connected stamps, a plurality of corners of said driver always co-acting with said retainer, so that driver progress may be only slightly opposed by a substantially constant frictional resistance of the retainer.

In testimony whereof I hereunto set my hand in the presence of two subscribing witnesses.

EMERSON A. BOLEN.

In the presence of—
STANLEY W. COOK,
MARY F. ALLEN.