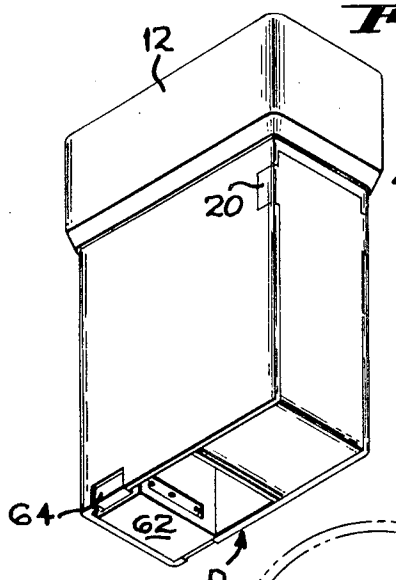
May 29, 1973 N. W. FEDRICK 3,736,212

STAMP APPLICATOR

Filed May 12, 1971

FIG_1



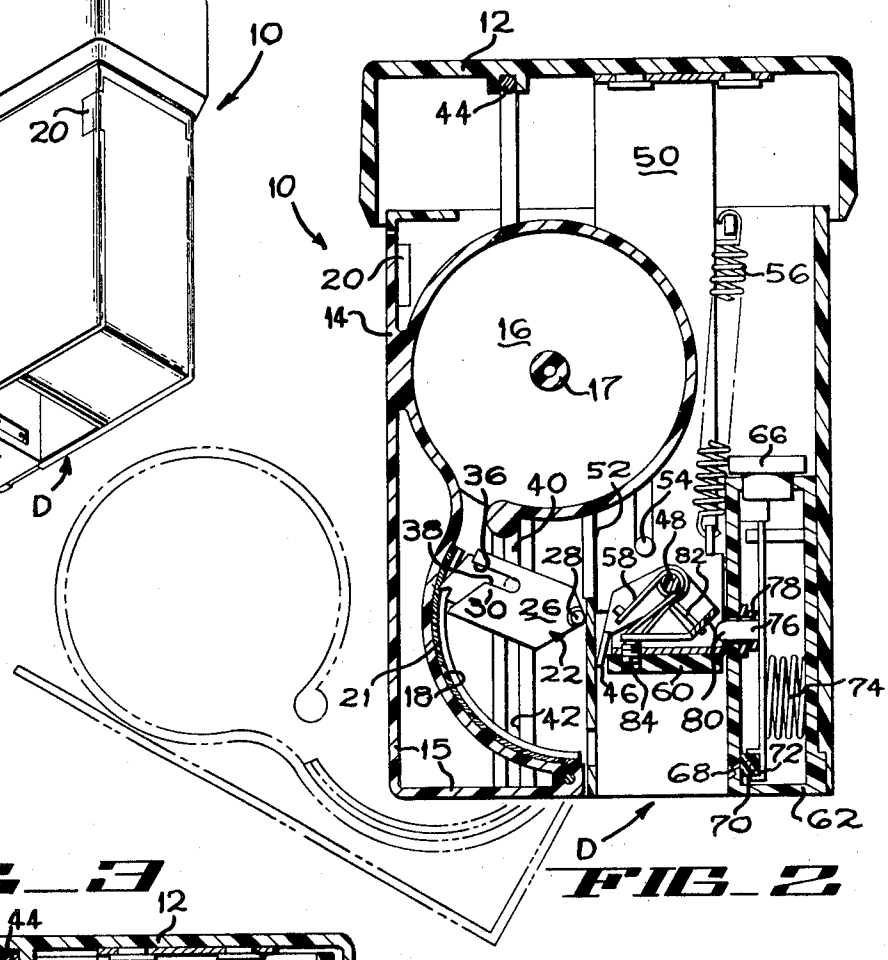
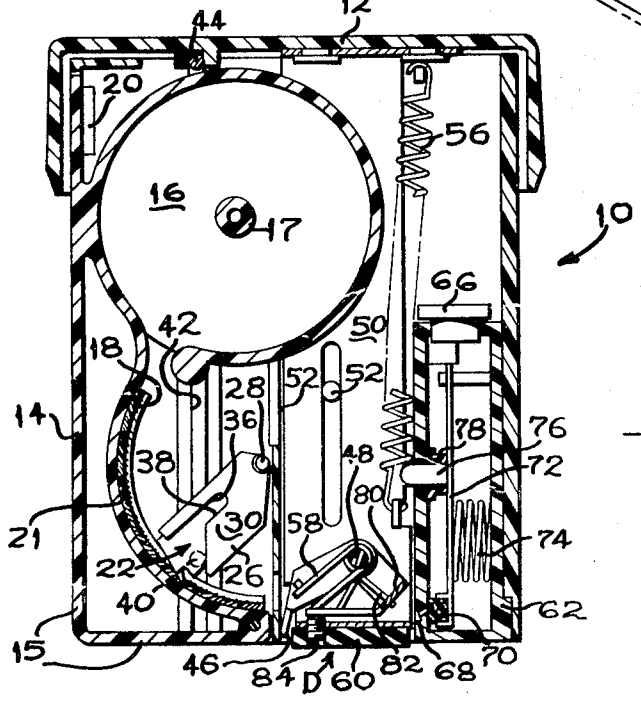


FIG_2

FIG_3



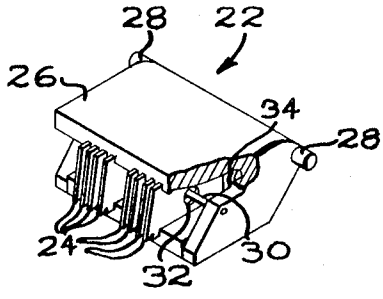


FIG_4

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STAMP APPLICATOR

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U.S. Cl. 156—517 7 Claims

ABSTRACT OF THE DISCLOSURE

A stamp applicator including a housing with a depressible cap thereon for actuating the feeding of a strip of stamps from a hopper to a dispensing position whereat a single stamp is severed and then pressed against a surface wetted by moisture dispensing means which are also contained within the housing and actuated by depression of the said cap.

FIELD OF THE INVENTION

The present invention relates generally to dispensers and more particularly, to a stamp applicator for dispensing individual stamps from a strip and thereafter applying them to the surface of a letter or the like.

BACKGROUND OF THE INVENTION

Devices for dispensing and applying stamps to a letter are generally known but all the necessary functions of feeding the stamps, cutting off an individual stamp, moistening the surface to which the stamp is to be applied and subsequently pressing the separated stamp against such surface to provide the necessary adherence have only been achieved with relatively complex and expensive structures. Furthermore, such structures provided no easy way to accommodate stamps of variant dimensions and frequently presented problems in the initial loading of the supply of stamp strips to the unit preparatory to its use.

SUMMARY OF THE INVENTION

Accordingly, it is the general objective of the present invention to provide a stamp applicator which is designed not only to be relatively simple and inexpensive but which is easy to load and otherwise use and provides for adjustments to accommodate stamps of various dimensions and any necessary variance in the amount of moisture applied to the surface to accommodate, in turn, the different size stamps.

Briefly, this objective is achieved by providing a housing of relatively small dimensions not much larger than a package of cigarettes to the top of which a depressible cap member is mounted to effect actuation of all of the operating parts, the stamp being moved, cut off, and applied to a letter or other surface from a dispensing position at the lower end of the housing opposite to the upper end which supports the mentioned depressible cap. More particularly, interiorly of the housing is located a stamp feeding means which includes a generally cylindrical hopper adapted to receive a supply of stamps in rolled strip form. From this hopper, an opening extends at one position through a guide channel along which the stamps may be fed to the mentioned dispensing position at the lower exterior of the housing. Preferably, in accordance with the present invention, the hopper and guide channel are located as a separate unit which is pivotally joined to the housing and may be swung from its operative position within the housing to a position completely exterior thereof which not only facilitates placing the roll of stamps in strip form in the hopper but also allows the stamps to be appropriately positioned along the guide channel. The conjoined hopper and guide channel unit

can then merely be pivoted back to its position within the housing to ready the device for operation.

When so operatively disposed, the strip of stamps within the guide channel is engaged by stamp advancing means in the form of a reciprocable pivoted unit including a plurality of fingers which move about the pivotal axis and are also urged radially outward therefrom by suitable spring means against the strip of stamps in the mentioned guide channel. The configuration of the fingers is such that they slope sharply in one direction so that as the fingers move forwardly in the direction of desired stamp advance, they enter the line of perforations between adjacent stamps in the strip and thus grasp the same for advance of the stamps towards the dispensing position. On the other hand, the rearwardly directed surface of fingers has a very shallow slope so as to cam over the surface of the stamps when the reciprocable pivoted structure returns to its original unactuated position.

Preferably, the pivoted member is provided with upper and lower cam surfaces which are engaged by an actuating pin supported from the depressible actuating cap so that when the latter is depressed, the pivoted member will be moved to advance the stamps a distance equivalent to the length of a single stamp. At this point, the character of the lower cam surface changes so that the pin may continue its advance but no further stamp advance will be effected. When the depressible cap is subsequently released, suitable spring means return it to its upper inoperative position and the described actuating pin engages the second upper cam surface on the pivoted member to withdraw the same, preferably to a position slightly rearwardly from a line of perforations so that no further stamp advance will occur until the next depression of the actuating cap. It is particularly notable that because of the configuration of the fingers, and the arrangement whereby they are withdrawn rearwardly beyond the line of perforations, stamps of slightly variant dimensions can be accommodated without changing any of the parts of the device. On the other hand, if much longer stamps are to be supplied, a simple change of the pivoted finger structure will readily accommodate this greater variation in stamp length requiring no other changes in the machine operation other than perhaps a slight adjustment in the amount of moisture applied to the surface on which the stamp is to be applied, as will be described in detail hereinafter.

Attached to the same actuating cap which actuates the described feeding means is a knife which moves downwardly within the housing to sever a stamp at a line of perforations which has been delivered by the feeding means to the dispensing position.

Attached to this same actuating mechanism is a cam actuator for a moisture dispensing means which causes a small amount of water to be delivered onto a surface immediately below the dispensing position and thus below a stamp delivered to such position and this same mounting arrangement also carries a pressure pad which subsequently pushes the severed stamp onto the wetted surface to complete the application of the stamp thereto.

Preferably, in accordance with another aspect of the invention, a simple adjustment for the cam actuator of the moisture dispensing means is provided so that if, for example, a stamp of considerably greater dimensions is to be dispensed, a simple screw adjustment will permit the dispensing of a slightly larger amount of moisture onto the surface. The moisture is delivered from a small container removably contained within the housing so that it can be periodically removed for replenishment of the water supply therewithin.

As will become more apparent hereinafter, even though the structure is relatively simple and thus inexpensive to

manufacture, it is easy to use and allows simple variation in the dimensions of the stamps which may be accommodated thereby.

BRIEF DESCRIPTION OF THE DRAWING

The stated objective of the invention and the manner in which it is achieved, as summarized hereinabove, will become more easily understood by reference to the following detailed description of an exemplary embodiment of the invention shown in the accompanying drawing wherein:

FIG. 1 is a perspective view of a stamp applicator embodying the invention,

FIG. 2 is an enlarged central sectional view through the FIG. 1 structure illustrating interior details thereof and also indicating by a phantom line showing the manner in which a stamp hopper and guide channel within the unit can be pivoted to an exterior loading position,

FIG. 3 is a view similar to FIG. 2 but showing the machine actuated to dispense and apply a stamp to a surface, and

FIG. 4 is a detailed perspective view of a pivoted stamp advancing means illustrating additional details of its construction.

DETAILED DESCRIPTION OF THE EXEMPLARY EMBODIMENT OF THE INVENTION

With initial reference to FIG. 1, the stamp applicator of the present invention as specifically illustrated includes a generally rectangular, molded plastic housing **10** which mounts on its top a plastic cap **12** which can be manually depressed to cooperatively actuate the various operating elements within the housing to effect feeding of stamps to a dispensing position indicated at D in FIG. 1 in its lower central surface whereat the individual stamp is severed at the line of perforations between adjacent stamps and is thereafter pressed downwardly onto an adjacent surface after a small amount of moisture has been dispensed onto such surface which may be that of a letter to which the stamp is to be applied. With additional reference to FIG. 2, the side and bottom of the housing **10** are left open to receive and pivotally mount by a pin **14** adjacent the dispensing position D a unitary plastic molded member including a bottom and side wall portion **15** formed integrally with a generally cylindrical hopper **16** for a strip of stamps in rolled form and a curved guide channel **18** which extends from such hopper to a point adjacent the previously mentioned dispensing position D. Preferably, the base of the channel **18** is covered with a plastic material such as "Fibretran" which consists of fibres **21** all sloping in the direction of desired stamp advance. More particularly, the cylindrical hopper **16** is closed at its one end but remains open at its other end to allow ready placement of a roll of stamps in strip form therewithin when the hopper **16** and the guide channel **18** are pivoted outwardly to the exterior loading position shown in phantom lines in FIG. 2. Preferably, a hollow cylindrical center post **17** resiliently receives a retaining spring (not shown) for the inserted roll of stamps. Integral slightly resilient side ears **20** are arranged to engage the side walls of the housing **10** with a slight pressed fit to resiliently hold the unit in its closed operative position as shown in FIG. 1 and in full lines in FIG. 2 but to permit ready grasping when the unit is to be moved to the loading position shown in phantom lines. During the loading operation the retaining spring is temporarily removed and a roll of stamps in strip form is placed in the hopper **16** and the retaining spring is then replaced. A small section of the strips of stamps is fed with the glue side against the base of the guide channel **18** and the edges of the stamp engaged by lateral flanges which assure guided motion of the strip of stamps during operation to the mentioned dispensing position upon appropriate actuation of stamp advancing means, generally indicated at **22**.

Such stamp advancing means **22**, which are illustrated in greater detail in FIG. 4, include a plurality of fingers **24** in the form of thin metal plates which are supported for limited sliding motion in parallel relationship in opposed slots in a finger carrier **26** preferably fabricated of molded plastic and pivotally supported by laterally projecting pins **28** mounted in suitable apertures in the side of the molded housing **10** so that the finger extremities pass, when the carrier **26** is pivotally moved, along an arcuate path adjacent that of the described guide channel **18**. Thus, the fingers **24** are constrained to move with the pivoted carrier **26** in its pivotal motion but can shift radially a slight amount to facilitate proper engagement with the line of perforations between adjacent stamps to enable grasping and subsequent advance of the stamps towards the mentioned dispensing position D. A small pin **30** extends through a series of larger openings **32** in the individual fingers **24** to restrict the amount of radial motion and preclude their accidental falling from the carrier **26** but do allow spring means **34** in the form of a small rubber tube mounted between the inner end of the fingers **24** and the adjacent bottom of the carrier **26** to constantly urge the fingers radially outward towards the guide channel **18** and any strip of stamps therein. To operatively engage the stamp perforations, the end of each finger **24** is steeply sloped on its side which is forward in the direction of desired advance of the stamps but the opposite rearward side of each finger is provided with a very gradual sloping surface. Thus, if the carrier **26** and the fingers **24** mounted therefrom are moved downwardly from the inoperative position shown in FIG. 2 towards the fully-extended position shown in FIG. 3, the perforations will be entered by the fingers **24** and the strip of stamps will be advanced in this direction. However, when the carrier **26** and the fingers **24** are returned from the fully actuated position shown in FIG. 3 to the inoperative position shown in FIG. 2, the shallow sloping surface allows the fingers **24** to merely cam over the surfaces of the stamps so as to cause no reverse motion thereof, particularly since the stamps are held against reverse motion by the plastic fibers **21** in the channel **18**.

In order to actuate the described pivoted motion of the carrier **26** and the fingers **24** mounted therefrom, the sides of the carrier are slotted to provide upper and lower cam surfaces **36**, **38** which are engaged by the inwardly bent ends of an actuator pin **40**, sections of which extend downwardly in integral channels **42** along the inner surfaces of the housing **10** and are joined laterally at their upper ends for reception in a corresponding channel **44** in the described actuating cap **12**. The lower cam surface **36** extends for a predetermined distance substantially radially outward from the pivotal axis of the carrier **26** and thence angles downwardly so that when the cap **12** is depressed, the actuating pin **40** moves downwardly in a guided motion in the channels **42** in the side of the housing so that the actuating pin first engages the radial cam surface to cause pivotal motion from the disposition shown in FIG. 2 to that illustrated in FIG. 3 at which point the pin moves along the angular cam surface which has achieved a position parallel to its direction of motion so that no further pivoted advance of the carrier **26** and the fingers **24** will occur, the total stroke being such that it is equivalent to the length of one stamp wherefore upon each repeated depression of the cap **12**, one stamp is brought to the open central dispensing position D at the bottom of the housing **10**. In turn, when the cap **12** returns to its upper inoperative position, the cam actuator pin **40** moves upwardly therewith and engages the second upper cam surface **38** of the carrier **26** to return it and the fingers **24** mounted therefrom to the upper unactuated position. Preferably, this unactuated position is such that the perforation-engaging fingers **24** lie slightly rearwardly of the line of perforations of the next stamp, thus to allow for any variations in stamp dimensions without fear of not picking up a stamp for advance upon the next depression of the cap **12**.

Quite obviously, the character of the lower cam surface **36** determines the amount of stamp advance wherefore a carrier with a different lower cam surface or with different finger configurations can readily be substituted to accommodate stamps whose length depart considerably from those handled by the carrier **26** as illustrated.

When a stamp has been delivered to the dispensing position D, additional means are operative to sever the single stamp at its line of perforations which means preferably takes the form of a knife **46** pivotally supported from a pivot pin **48** extending transversely between the side portions of an open rectangular actuating bar **50** whose upper transverse portion is secured to the undersurface of the cap **12**. The bar **50** is maintained in vertical sliding disposition between inwardly projecting flanges **52** in the interior of the housing **10** and is limited in its total up and down motion by a pin **54** projecting from the side of the housing **10** through a slot in the side portion of the bar **50**. Normally, the actuating bar **50** is urged to an upper position by tension springs **56** connected between the inner sides of the bar and fixed projections on the interior of the housing, thus to hold the actuating bar and the entire cap **12** in the upper inoperative position as shown in FIG. 2. A torsion spring **58** is mounted on the knife pivot pin **48** and is arranged to engage a laterally projecting tab thereon so as to urge the pivoted knife in a clockwise direction as viewed in FIG. 2 to maintain the same against the adjacent flange **52** in the wall of the housing **10** and thus in alignment with the line of perforation in a stamp to be severed. The lower transverse portion of the open rectangular bar **50** mounts a pressure pad **60** preferably formed of rubber or other resilient material that is arranged to engage the top of a severed stamp and press the same against a letter or other surface to which the stamp is to be applied. Preferably, this pressure pad **60** is mounted so that when the actuating cap **12** is fully depressed as shown in FIG. 3, the pad projects slightly below the bottom of the housing **10** so as to positively press the severed stamp onto the surface to which it is to be applied.

Prior to the severance of the stamp or engagement by the pressure pad **60**, the described stamp applicator is arranged, again in response to depression of the cap **12**, to actuate moisture dispensing means arranged to squirt or otherwise deliver a small amount of moisture onto the surface of a letter or similar object so that when the stamp is subsequently pressed thereagainst, appropriate adherence will occur.

The required water for such dispensing of the moisture is contained within a small container **62** that is removably mounted adjacent the bottom of the housing **10** on the opposite side of the dispensing position D from the described feed means. This container is preferably formed from plastic material and may be inserted upwardly into the open bottom of the housing where it is held in position by a conventional spring detent **64** as indicated in FIG. 1 which can be simply depressed when the container **62** is to be removed for refilling. With additional reference to FIG. 2, the container **62** is provided with a filling cap **66** that can be removed when the water supply is to be replenished and is provided with a small discharge opening **68** adjacent its bottom and directed towards the dispensing position D. Normally, this small moisture discharge opening **68** is covered by a resilient pad **70** attached to the lower end of a leaf spring **72** that is fixed at its upper extremity and is normally urged by a coil spring **74** to the closed disposition illustrated in FIG. 2. However, at an intermediate position, a small plunger **76** is attached to the central portion of the leaf spring **72** so that its rounded end projects through a lateral opening in the side of the container, the plunger being sealed to the side thereof by a suitable rubber gasket **78**. If this plunger **76** is depressed inwardly, the discharge opening **68** at the bottom is opened and subsequent release of the plunger **76** will cause the resilient pad **70** to forceably eject water through such opening and onto the adjacent surface.

In accordance with the present invention, this plunger **76** is also energized in appropriate timed sequence for the requisite application of the moisture to the letter or other surface by depression of the previously described actuating cap **12**. Conveniently, the moisture dispensing actuator can take the form of a cam mmeber **80** mounted pivotally from the same transverse pin **48** that supports the knife **46** and is urged therearound in a counter-clockwise direction by a torsion spring **82**. One end of the cam member **80** is adapted to engage the rounded end of the described plunger **76** and its other extremity engages an adjustable stop **84** in the form of a screw projecting upwardly through the pressure pad **60** and the mounting bar **50** thus to limit the amount of counter-clockwise rotation of the cam **80**. As will be obvious, turning of this small screw **84** in one direction or another will vary the stop position and thus change the disposition of the cam **80** to vary, in turn, the amount of depression of the plunger **76** when the cap **12** and connected bar **50** are moved from the FIG. 2 position towards the FIG. 3 position. As the cam **80** moves downwardly it engages the rounded end of the plunger **76** to cause actuation of the same shortly after cap depression has been instigated so that the water will be discharged onto the letter or other surface at a time considerably prior to the application of the stamp to the surface. When the cap **12** is released so as to return upwardly from the FIG. 3 to the FIG. 2 position, the cam member **80** engages the rounded surface of the plunger **76** and merely pivots temporarily in a clockwise direction against the action of the torsion spring **82** so that the plunger will not be depressed upon this return stroke.

A large number of variations and alterations in the structure as specifically described can be made without departing from the spirit of the invention and as a consequence, the foregoing description of the one embodiment is to be considered as purely exemplary and not in a limiting sense and the actual scope of the invention is to be indicated only by reference to the appended claims.

What is claimed is:

1. A stamp applicator which comprises,

means for feeding a strip of stamps having a line of perforations between adjacent stamps to a dispensing position including reciprocable means having fingers formed to enter the stamp perforations and advance the strip of stamps in one direction,

means for severing an individual stamp at the dispensing position from the end of the strip,

a housing mounting said stamp feeding means and said severing means therewithin, and

a common actuator for both of said means mounted for movement on said housing,

said stamp-feeding means including a hopper and a guide channel extending from said hopper to the dispensing position, said hopper and guide channel being mounted as a unit pivotally on said housing for movement between an operative position therewithin and a loading position outside of said housing whereby insertion of a strip of stamps is facilitated.

2. A stamp applicator which comprises,

means for feeding a strip of stamps having a line of perforations between adjacent stamps to a dispensing position including reciprocable means having fingers formed to enter the stamp perforations and advance the strip of stamps in one direction, and

means for severing an individual stamp at the dispensing position from the end of the strip,

said reciprocable stamp-advancing means including a carrier member, a plurality of said fingers mounted on said carrier for reciprocating motion therewith along the path of stamp feeding and for movement relative thereto transverse to the path of stamp motion, and spring means urging said fingers towards the path of stamps.

3. A stamp applicator according to claim 2 wherein,
each of said fingers has a steep slope on the side of stamp advance and a shallow slope on the opposite side so as to cam over the stamp perforations in the reverse direction of motion along the path of stamp feeding.

4. A stamp applicator according to claim 2 wherein,
said carrier member is mounted for reciprocable pivoted motion and includes a cam surface extending radially from the pivotal axis and thence angularly, and
said feeding means includes a cam actuator pin mounted for linear motion along a path which intersects the radially-extending cam surface to effect pivotal motion of said carrier member until said angular cam surface becomes aligned with the linear path of said pin.

5. A stamp applicator according to claim 4 which comprises
a manually-operable actuator connected to said cam actuator pin, and
spring means normally urging said actuator to its unactuated position,
said carrier member having a second cam surface engageable by said cam actuator pin to return said fingers on said carrier to a position rearwardly of a line of perforations in the direction of stamp feeding motion.

6. A stamp applicator which comprises
means for feeding a strip of stamps having a line of perforations between adjacent stamps to a dispensing position including reciprocable means having fingers formed to enter the stamp perforations and advance the strip of stamps in one direction,
means for severing an individual stamp at the dispensing position from the end of the strip,
means adjacent the dispensing position for dispensing moisture below the individual stamp at such position whereby an adjacent surface will be wetted,

means for pressing the severed stamp against the wetted surface,
a common operable actuator for said moisture dispensing means, said stamp pressing means, said stamp feeding means, and said stamp severing means, and
means for adjusting the amount of moisture dispensed in response to operation of said actuator.

7. A stamp applicator which comprises
means for feeding a strip of stamps having a line of perforations between adjacent stamps to a dispensing position including reciprocable means having fingers formed to enter the stamp perforations and advance the strip of stamps in one direction, and
means for severing an individual stamp at the dispensing position from the end of the strip,
said stamp feeding means including a hopper and a guide channel for directing a strip of stamps from said hopper to the dispensing position, said guide channel including sloping plastic fibers on its surface to restrict motion of stamps towards said hopper.

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U.S. Cl. X.R.

156—442, 521; 226—62, 127, 134