BEST AVAILABLE COPY

No. 771,767. PATENTED OCT. 4, 1904.

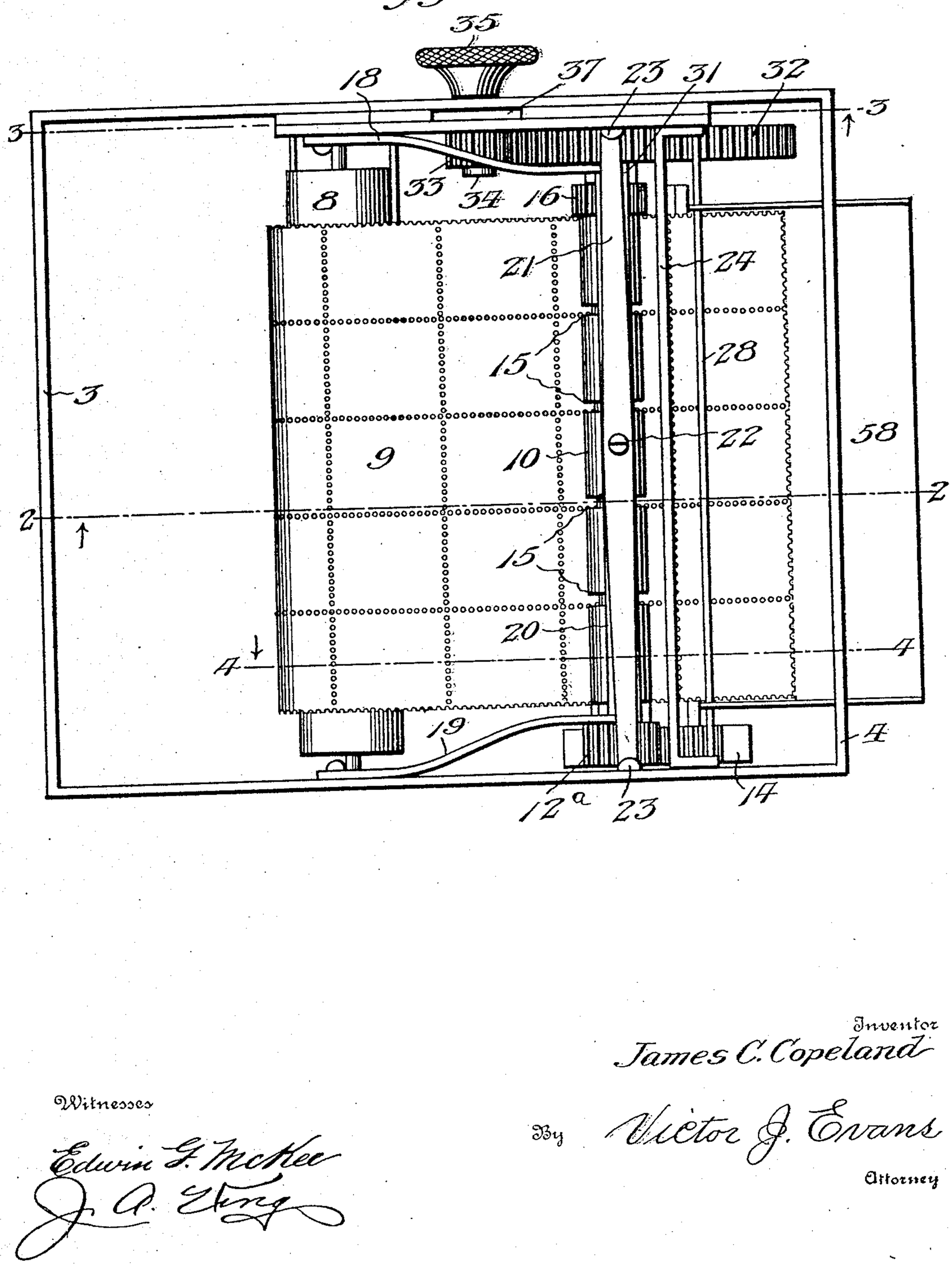
J. C. COPELAND.

STAMP VENDING MACHINE.

APPLICATION FILED SEPT. 4, 1903.

NO MODEL. 4 SHEETS—SHEET 1.

Fig. 1.



Witnesses

Edwin F. McKee

J. A. Yung

Inventor

James C. Copeland

By Victor J. Evans

Attorney

BEST AVAILABLE COP'

No. 771,767. PATENTED OCT. 4, 1904.

J. C. COPELAND.

STAMP VENDING MACHINE.

APPLICATION FILED SEPT. 4, 1903.

NO MODEL. 4 SHEETS—SHEET 2.

Fig. 2.

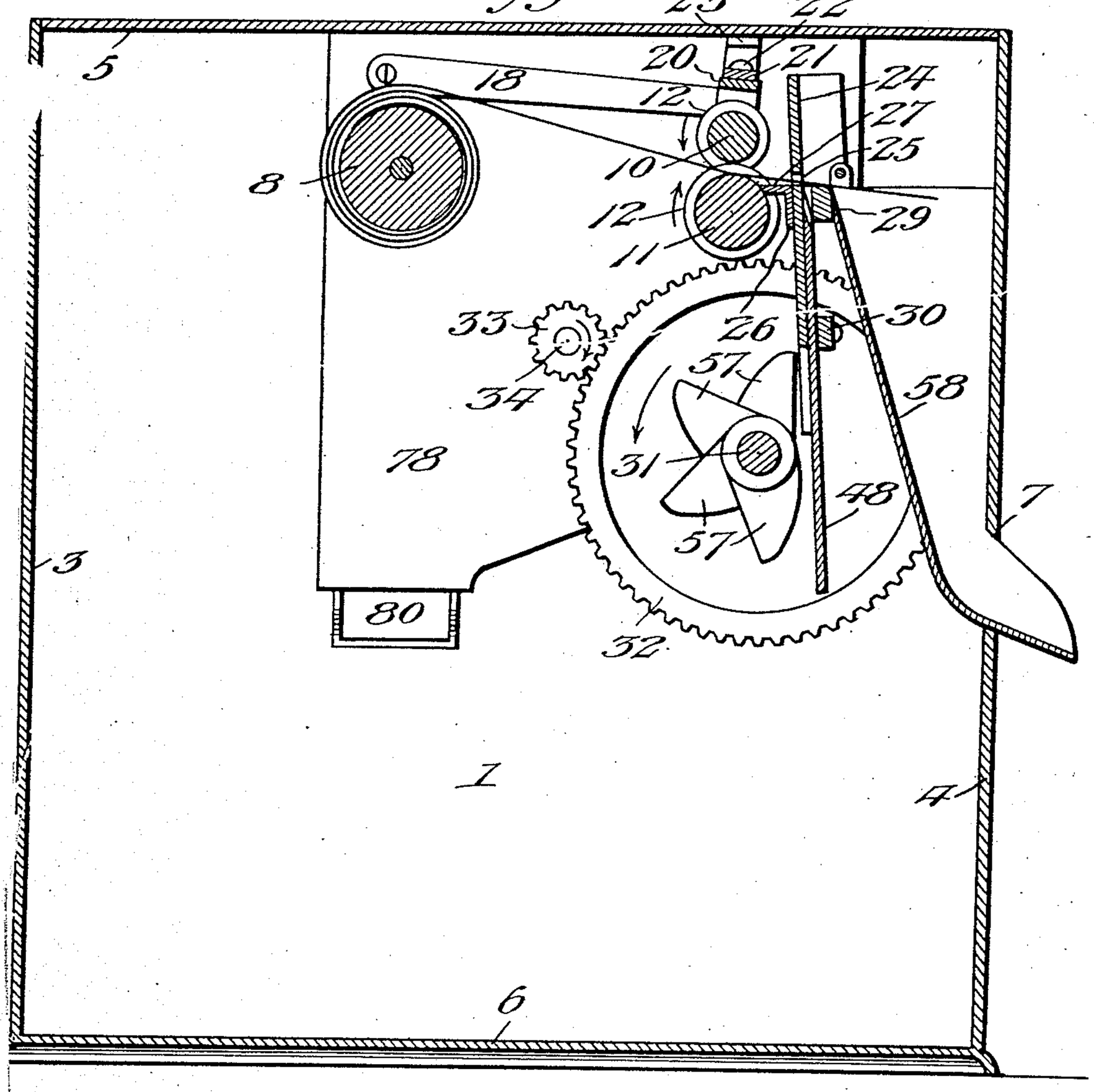
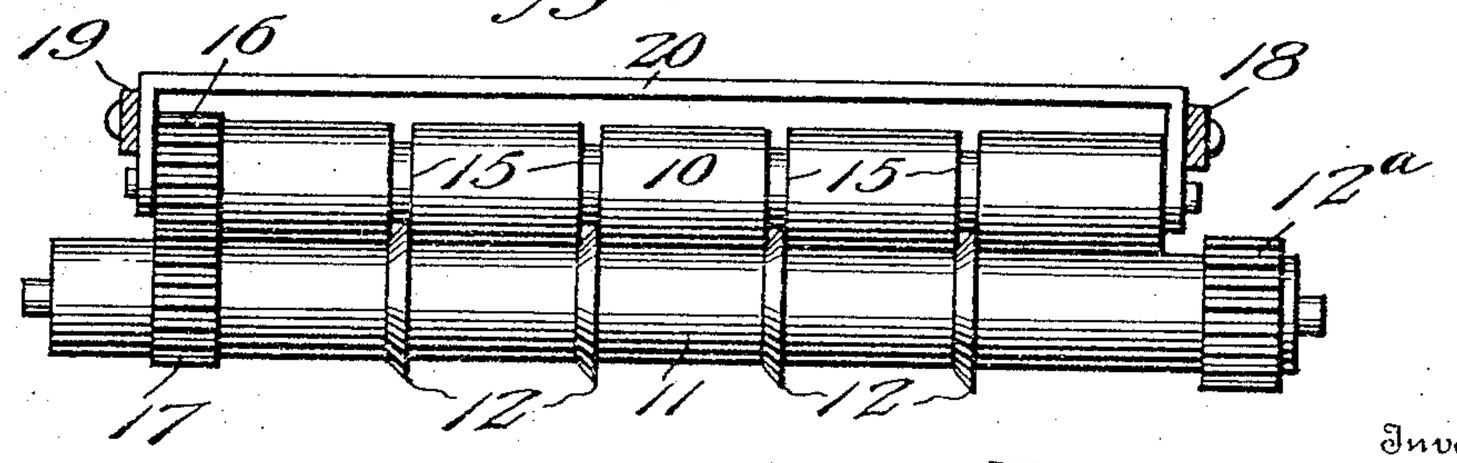


Fig. 6.



Inventor
James C. Copeland

Witnesses
Edwin G. McKee
L. A. King

By Victor J. Evans
Attorney

BEST AVAILABLE COPY

No. 771,767. PATENTED OCT. 4, 1904.

J. C. COPELAND.

STAMP VENDING MACHINE.

APPLICATION FILED SEPT. 4, 1903.

NO MODEL. 4 SHEETS—SHEET 3.

Fig. 3.

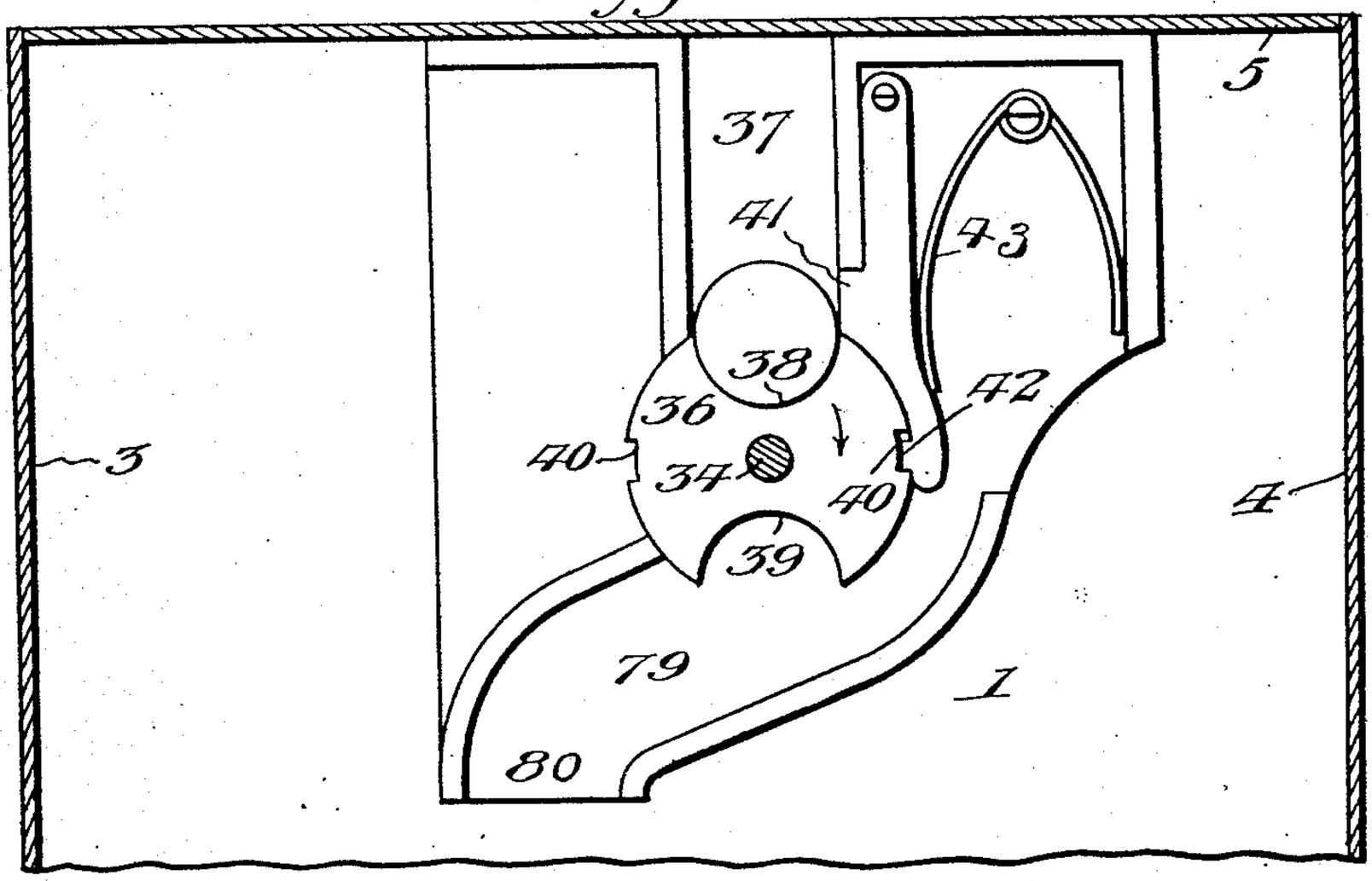
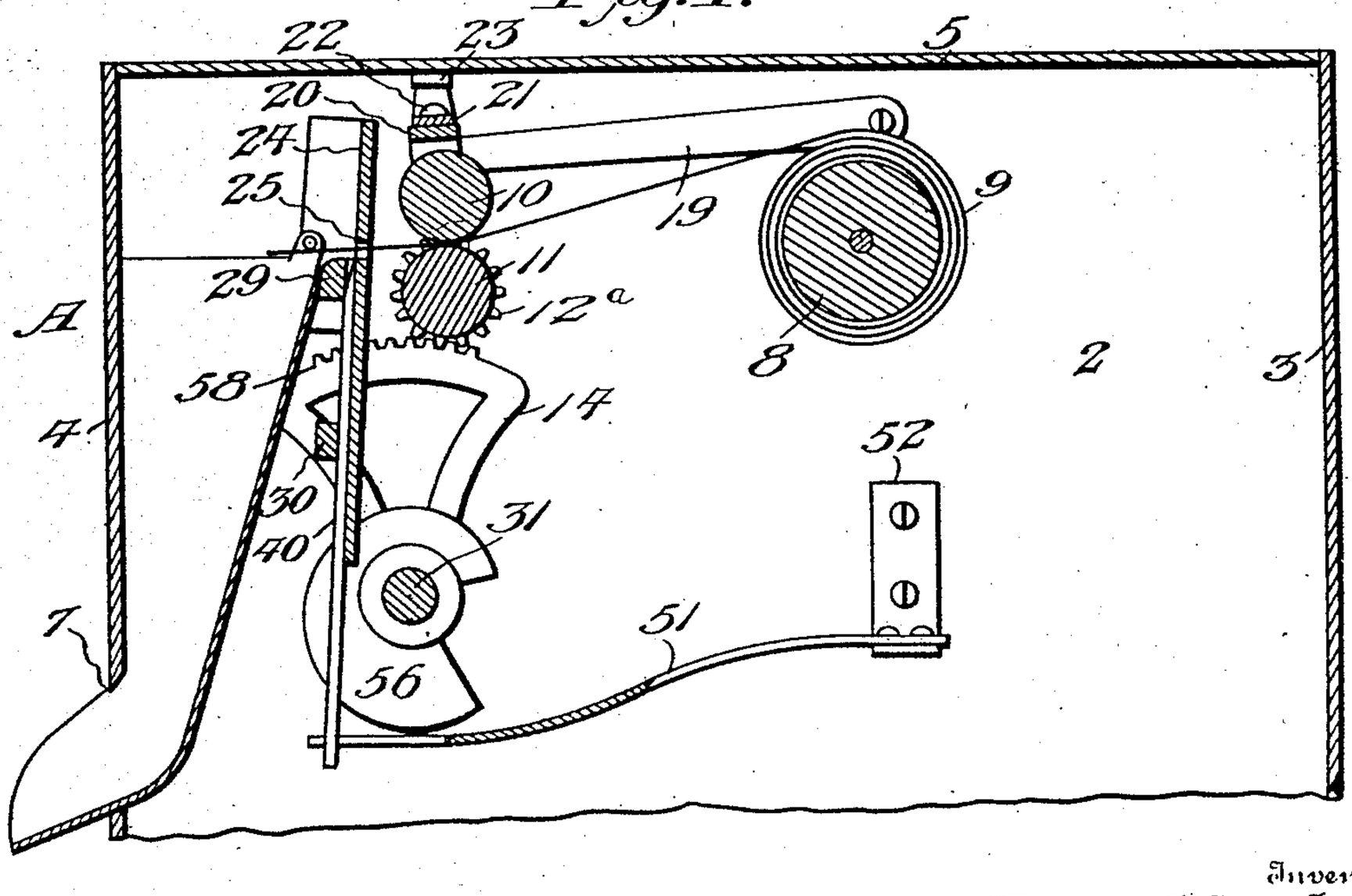


Fig. 4.



Witnesses

Edwin F. McKee

J. A. King

Inventor

James C. Copeland

By Victor J. Evans

Attorney

BEST AVAILABLE COPY

No. 771,767. PATENTED OCT. 4, 1904.

J. C. COPELAND.

STAMP VENDING MACHINE.

APPLICATION FILED SEPT. 4, 1903.

NO MODEL. 4 SHEETS—SHEET 4.

Fig. 5.

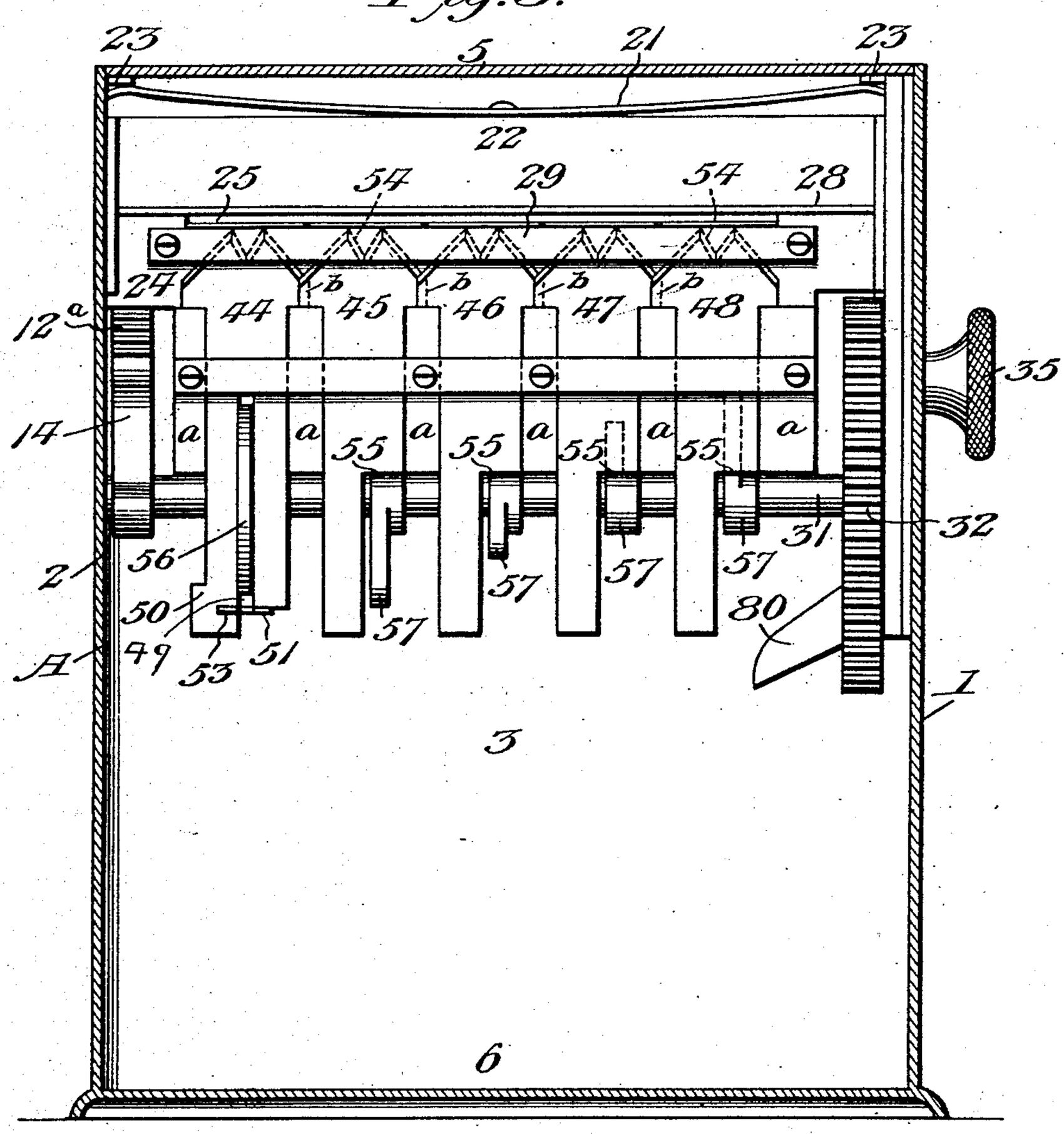
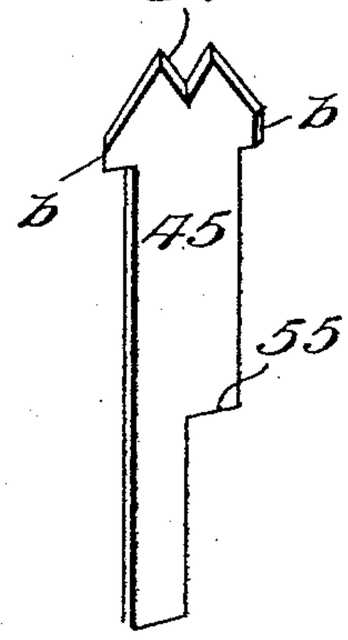


Fig. 7.



Witnesses:

Edwin L. McKee

J. A. King

Inventor

James C. Copeland

By Victor J. Evans

Attorney

BEST AVAILABLE COPY

No. 771,767. Patented October 4, 1904.

UNITED STATES PATENT OFFICE.

JAMES C. COPELAND, OF POTTSVILLE, PENNSYLVANIA, ASSIGNOR OF ONE-HALF TO BENJAMIN W. CUMMING, JR., AND BURTON E. KINGSLEY, OF POTTSVILLE, PENNSYLVANIA.

STAMP-VENDING MACHINE.

SPECIFICATION forming part of Letters Patent No. 771,767, dated October 4, 1904.

Application filed September 4, 1903. Serial No. 171,985. (No model.)

To all whom it may concern:

Be it known that I, JAMES C. COPELAND, a citizen of the United States, residing at Pottsville, in the county of Schuylkill and State of Pennsylvania, have invented new and useful Improvements in Stamp-Vending Machines, of which the following is a specification.

My invention relates to improvements in mechanisms for severing a single stamp or a multiple of stamps from a sheet of stamps perforated in right-angular lines in the usual manner; and the object is to provide improved mechanism whereby a single stamp or a multiple of stamps may be cut off without mutilation. The improvements are particularly designed to be used in connection with or in combination or association with stamp-vending mechanisms of that kind or style used in connection with coin-controlled stamp-vending machines.

The object is to construct an improved mechanism whereby a stamp or a plurality of stamps may be cut and severed from the sheet on the lines of the transverse and longitudinal perforations.

Another object is to construct the severing mechanism so that it will stand normally locked subject to the action of mechanism or to the introduction of coins to release the severing and delivering mechanism and then when the stamp has been severed and delivered to automatically lock against further movement.

The invention will be hereinafter described, as prescribed by the statutes, and the parts, improvements, and combinations which embody the invention will be particularly pointed out and distinctly claimed.

I have fully and clearly illustrated the invention in the accompanying drawings, to be taken as part of this specification, and reference being thereto had Figure 1 is a top plan view of the mechanism, showing a sheet of stamps arranged subject to its action, the top plate of the casing being removed. Fig. 2 is a vertical longitudinal section taken on the line 2 2 of Fig. 1, showing the stamp-slitting rollers and one of the knives or cutters and the stamp-delivering chute in vertical section. Fig. 3 is a section taken on the line 3 3 of Fig. 1, showing the coin-released mchanism in elevation, the inner plate being removed to show the construction. Fig. 4 is a vertical section taken on line 4 4 of Fig. 1, showing the stamp-slitting rollers, the spring-actuated knife, and the cam for depressing the spring and operating the knife, and the sector for operating the stamp-slitting rollers. Fig. 5 is a transverse vertical section through the casing and a front elevation of the vertically-reciprocating knives. Fig. 6 is a detail view of the stamp-slitting rollers and end view of the pivotally-supported yoke which carries the upper slitting-roller. Fig. 7 is a detail perspective of one of the knives, showing the chamfered edge to permit the sharpened edge of the preceding knife to operate behind it and to nick or cut the next succeeding stamp.

A designates a rectangular casing made of such dimensions and capacity as will fit it to accommodate the mechanism. The casing is preferably made of metal plates and consists of side plates 1 2, end plates 3 4, and top and bottom plates 5 6, secured together in any suitable manner. In the end plate 4 is made a transverse opening 7, through which the lower end portion of the stamp-delivering chute extends to deliver the severed stamps to the purchaser.

8 designates a roller journaled across the casing, and on this roller the sheet of stamps 9 is wound. The roller is of such length as to project at the ends beyond the edges of the stamp-sheet, so that the edges will not crimp or turn down when moving between the slitting-rollers.

10 11 designate the stamp-slitting rollers which sever the stamps on the lines of the longitudinally-disposed perforations. The lower slitting-roller 11 is journaled in bearings in walls of the casing and is provided at determined distances with annular cutters or knives 12, set at the proper distances to agree with the lines of longitudinal perforations in the stamp-sheet. On one end of the roller 11

BEST AVAILABLE COP

is a pinion 12, which is intermittently engaged by the teeth or cogs of the sector 14 on the cam-shaft hereinafter described. The roller 10 is formed with annular grooves 15, in which the annular cutters engage and in conjunction therewith slit the sheet of stamps longitudinally. It will readily be perceived that the plain sections of the rollers between the grooves and knives operate in contact, and thus carry the stamps forward between the rollers for the action of the knives. The rollers 10 11 are formed or provided at one end with equal intermeshing pinions 16 17, which are proportioned to turn the rollers to move the stamp-sheet the width of a stamp at each traverse of the teeth of the sector with the pinion 12. The roller 10 is journaled in the free ends of arms 18 19, pivotally supported on the walls of the casing, as indicated, and connected at their free ends by a cross-bar 20, and to keep the roller 10 in engagement with the roller 11 a flat spring 21 is pivotally secured at its middle, as at 22, to the cross-bar 20 and has its ends detachably lodged under lugs 23 at opposite sides of the casing. The roller 10 is thus made liftable from its position on the roller 11, so that it may be swung or lifted on its supports when it becomes necessary to place a new supply of stamps on the stamp-roller and extend the sheet in preliminary engagement between the rollers.

Across the casing is secured a knife-holding plate 24, arranged at a moderately-inward incline from bottom to top, so as to give the knives an inwardly-shearing pitch in their contact with the stamps. In the plate 24 is a transverse slot 25, through which the stamp-sheet is moved into position for action of the knives, and to guide the stamps through the slot a guide-piece 26 is secured to the inner face of the plate 24, the guide-piece being formed with a horizontally-extending flange 27, the plane of which is in alinement with the lower edge of the slot 25 and the free edge of which bears against the face of the roller 11, so as to prevent the stamps from following the roller and to carry them into the slot. In front of the plate 24 and above the slot 25 is a round bar 28, which prevents the protruding stamps from curling upward and also holds them, so that the action of the knives will be insured. On the front face of the plate 24 at determined distances apart corresponding to the width of the bodies or shanks of the knives are secured vertical knife-guide strips *a*, their lower ends being in horizontal alinement and the upper ends of the intermediate strips being in alinement to afford seats for the shoulders of the knives. Across the face of the plate 24 are secured upper and lower horizontal bars 29 30, between which and the face of the plate 24 the knives freely slide and are guided by the mechanism.

31 designates a shaft journaled across the casing and having mounted thereon a plurality of cams for actuating the knives, as will be hereinafter more fully specified. On the shaft 31 is mounted a gear-wheel 32, the circumference of which is gaged to actuate the knives in sequence to consecutively cut five stamps from the sheet when moved forward to the action of the knives. The gear-wheel 32 is rotated the determined distance to cause the severance of a single stamp by a pinion 33 on a short shaft 34, having a bearing in the wall of the casing and carrying on its outer end a thumb-piece 35. On the short shaft 34 is mounted a coin-disk 36, positioned at the lower end of a coin-slot 37 and is formed with diametrically-opposite coin-seats 38 39, and at opposite points midway between the coin-seats are formed locking-notches 40, which are engaged by a pawl or detent 41, pivotally hung in the casing and formed with a lug 42 somewhat shorter than the length of the notches, so that sufficient play will be given to the disk to start the coin and permit the one-half of a revolution, which being accomplished the disk is again locked by the detent against further movement until another coin is inserted and the disk thereby made subject to releasement. The detent 41 is pressed into engagement with the disk by a spring 43. (Substantially shown in Fig. 3 of the drawings.) Except as associated in combination with my improved stamp-severing mechanism the coin-released mechanism is not herein claimed as a part of this invention, because it forms the subject-matter of prior applications made by me involving stamp-vending devices.

44, 45, 46, 47, and 48 designate the knives which sever the stamps from the sheet on the transverse lines of the perforations and are slidably disposed in the ways formed by the plate 24, the vertical strips *a*, and the bars 29 and 30, as seen in the drawings. The knife 44 differs in construction from the others of the series and consists of a shank or body having a vertical slot 49 extending well up therein to afford sufficient space for the cam to work in which draws it down. The outer limb of this knife 44 is formed with a lateral extension or shoulder 50, which lodges against the lower end of the first strip *a* when the knife is released from the action of the cam and is carried up by the force of the spring 51. This spring 51 has its one end firmly secured to a support 52, secured to the wall of the casing, and extending forward has its movable end secured in a notch 53 in the lower end of the shank of the knife 44, as indicated in Fig. 5 of the drawings. The heads or blades of all the knives are shouldered, the shoulders resting on the upper ends of the strips *a* when the knives are in their lower positions, as seen in Fig. 5 of the drawings. The cutting portions of the knives consist of two sharp and pointed teeth 54, the cutting

T ST AVAILABLE COP

edges of which extend the full length of a stamp and a short distance beyond, so as to fully and completely cut off the stamp, which severance is insured by having the vertical cutting edge of the first moving knife underlap the first cutting edge of the next succeeding knife, as shown in dotted lines in Fig. 5 of the drawings and indicated by reference *b*. The knives 45, 46, 47, and 48 are duplicates of one another, consisting of straight shanks or bodies slidably disposed between the strips *a* and having shouldered heads and cutting-teeth, as described, and having their lower portions cut away to form shoulders 55, which ride on the cams on the shaft 31. The knife 44 in its cutting stroke is thrown upward by the force of the spring 51 and drawn down by cam action depressing the spring. On the shaft 31 is mounted a cam 56, positioned to move in the slot 49 and bear on the spring 51 to depress and carry the knife 44 down with its cutting-teeth below the stamp-slot 25. The tread of the cam 56 is of such length and disposition that it will carry the spring down rather quickly and hold it stationary, with the knife depressed or lowered below the stamp-slot until the last knife of the series has cut its stamps off, at which time the cam will have reached or about have reached the step end of the tread and slip off the end of the spring, which will then drive the knife up and sever the stamp at that end of the strip.

On the shaft 31 are mounted a plurality of cams 57, so arranged and positioned relatively as to push up the knives they operate in proper consecutive order. When the cams have pushed the knives up to the limit of their vertical movement and pass off the shoulders, the knives drop by gravity to their normal position. At the front portion of the machine is arranged and secured a stamp-chute 58, having its delivery end projected through the slot or opening 7, as seen in Figs. 1, 2, and 4 of the drawings. The stamps as they are severed from the sheet drop down the chute and are delivered to the purchaser.

The operation may be stated as follows: The stamp-roller is supplied with a sheet of stamps of the desired number in length and of the required number in width. The upper stamp-slitting roller is then lifted free from its mate and the sheet of stamps drawn forward and arranged with its edge on the proper line on the lower roller. The upper roller is then swung back into place on the lower roller with the edge of the stamp-sheet between them. The spring 21 is then arranged in position and the apparatus is ready for the uses intended. Normally the knives stand with their cutting-points in alinement with the lower edge of the stamp-slot 25 and in position to avoid interference with the initial progress of the row of stamps being moved or to be moved into position to be severed from the previously-slit strips, as indicated in Figs. 4 and 5, wherein the sector has partially engaged the pinion 12 of the slitting-rollers, and the cam 56 has but a short distance to travel to drop off the spring and permit the latter to force the knife up and sever the stamp. The mechanism being in the position thus stated a person can drop one cent into the coin-slot, and thus release the detent from the disk, which may then be turned one-half around and again locked by the detent. This movement has made the sector engage the slitting-rollers and the row of stamps has been projected one-half distance from the slitting-rollers. The customer then deposits another cent in the slot, which enables the disk to be turned one-half revolution, thus carrying the row of stamps through the stamp-slot and in proper position to be severed. When the row of stamps has thus been positioned, the sector has passed from engagement with the slitting-roller pinion and the rollers stand idle and the row of stamps ready for severance in consecutive order. In the meantime and during the last half-revolution of the disk the cam 56 reaches a position to step off the spring 51, and the spring then forces the knife 44 up and the stamp is severed and drops down the chute into possession of the customer. The sector is now free and will not be again brought into requisition until all the remaining stamps of the projecting row have been severed and disposed of. Now one stamp, the first of the row, having been disposed of the next in order is ready to be acted on by the knife 45. To get possession of this second stamp, the purchaser drops the cent in the slot and then turns the knob one half-rovolution, which causes the cam of knife 45 to carry the knife partly through the stamp. The second cent is then dropped in the slot, and the revolution of the disk may then be completed and the knife raised to its upper limit and the stamp cut entirely free to drop down the chute. The cam 57 of the knife 45 then passes free of the knife, which then drops down by gravity to its lower position. The knives 46, 47, and 48 are operated in consecutive order, and when the last stamp of the row has been severed the knives have all assumed their normal positions and the sector has been returned to a position to engage the pinion of the slitting-roller and cause another row of stamps to be projected subject to the action of the knives in sequential order, as specified. It will be observed that the coins discharged from the disk 36 descend through a coin slot or channel 79 and are carried by a chute 80 into the interior of the casing.

Having thus fully described the invention, what is claimed as new is—

1. In a stamp-vending apparatus, a means to slit a sheet of stamps longitudinally, and means in advance of the first-named means to sever the stamps transversely, the transverse

BEST AVAILABLE COP

severing means operating with the individual stamps.

2. In a stamp-vending apparatus, a means to slit a sheet of stamps longitudinally, and a means to sever the stamps transversely consecutively one at a time.

3. In a stamp-vending apparatus, slitting-rollers to sever the strips of stamps longitudinally of the sheet, knives to sever the stamps transversely from the strips, and means to actuate the knives consecutively.

4. In a stamp-vending apparatus, a pair of slitting-rollers to slit the sheet of stamps longitudinally, knives to sever the stamps transversely and consecutively, and means to actuate the knives one at a time, and a locking device to lock the stamp-vending mechanism.

5. In a stamp-vending apparatus, a pair of slitting-rollers to slit the sheet of stamps longitudinally, knives to sever the stamps transversely and consecutively, means to actuate the knives one at a time, and a chute to deliver the stamps to a purchaser.

6. In a stamp-vending mechanism, a pair of stamp-slitting rollers to slit the sheet of stamps longitudinally, a means to move the stamp-sheet between the slitting-rollers the width of a stamp at one time, a plurality of knives to cut off the stamps consecutively, means to operate the knives, and a means to lock the stamp-vending mechanism.

7. In a stamp-vending mechanism, a pair of slitting-rollers to slit the sheet of stamps longitudinally, means to move the stamp-sheet intermittently a determined distance, a spring-actuated knife to cut the first stamp from a projecting line of stamps, a cam to draw down and release said knife, a series of stamp-severing knives acting consecutively and returned to normal position by gravity, and cams to lift and release the knives in succession.

8. In a stamp-vending mechanism, a pair of slitting-rollers to cut the stamp-sheet longitudinally, a plate secured in front of the slitting-rollers and formed with a horizontal stamp-slot through which a row of stamps is projected by the said rollers, vertical knife-ways in the plate, a plurality of vertically-movable knives slidingly arranged in the ways, a shaft, cams on the shaft to consecutively move the knives, a spring to actuate the first knife of the series, and a sector on the cam-shaft to rotate the slitting-roller after a row of stamps has been cut from the sheet.

9. In a stamp-vending mechanism, a pair of slitting-rollers to cut the stamp-sheet longitudinally, a plate secured in front of the slitting-rollers and formed with a horizontal stamp-slot, a guide-flange to direct the stamps through the said slot, a guide-bar in front of the plate to hold the stamps to the action of the knives, vertically-movable knives to sever the stamps one at a time, cams to actuate the knives consecutively, a spring to lift the first knife, and means to intermittently operate the slitting-rollers and project a row of stamps into the path of the knives, substantially as described.

10. In a stamp-vending apparatus, a rotary slitting means to sever sheets of stamps longitudinally, and vertical reciprocating cutting devices to sever the individual stamps transversely consecutively one at a time.

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

JAMES C. COPELAND.

Witnesses:
A. H. ROSENGARTEN,
HORACE B. MCCOOL.