

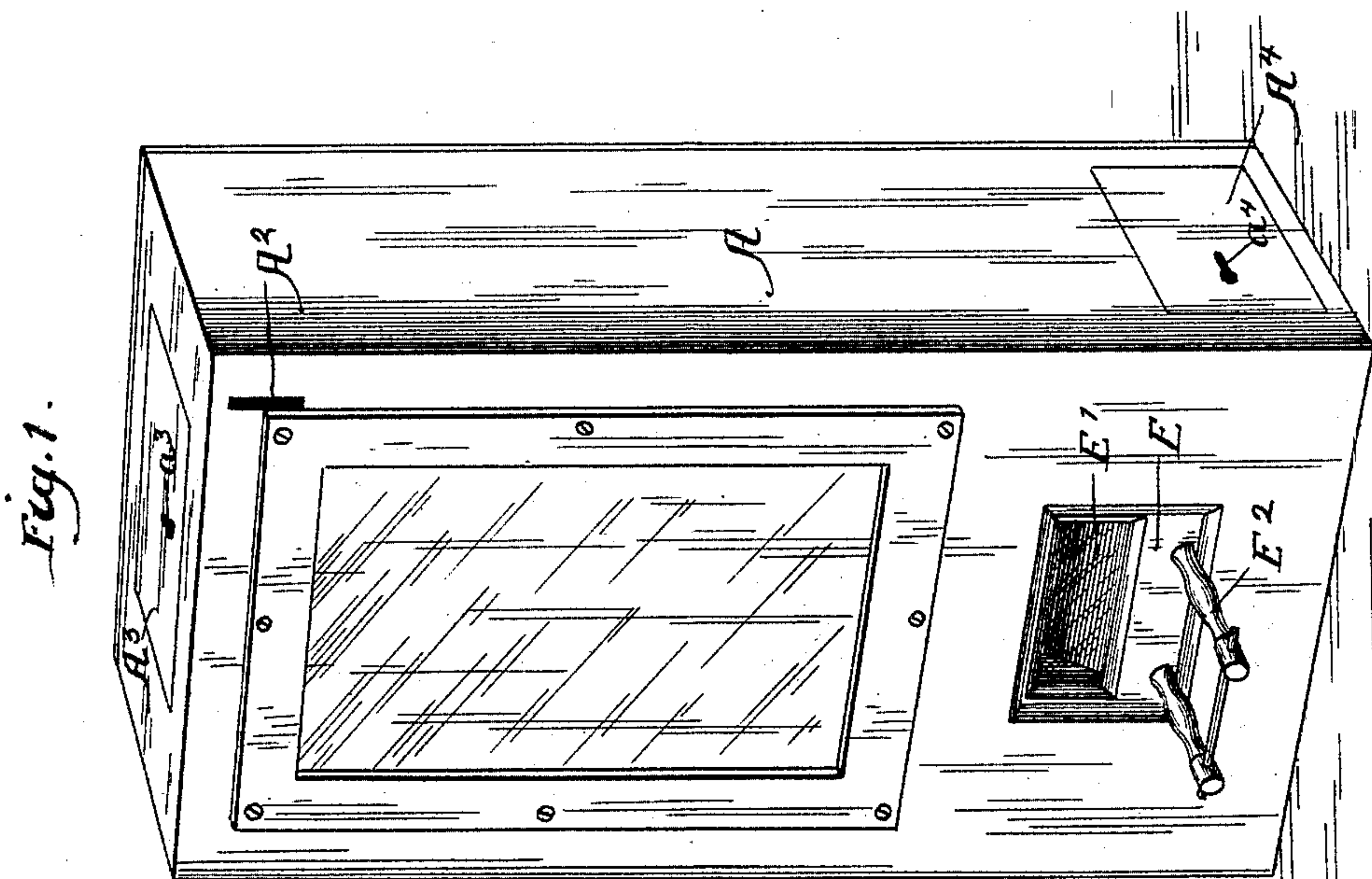
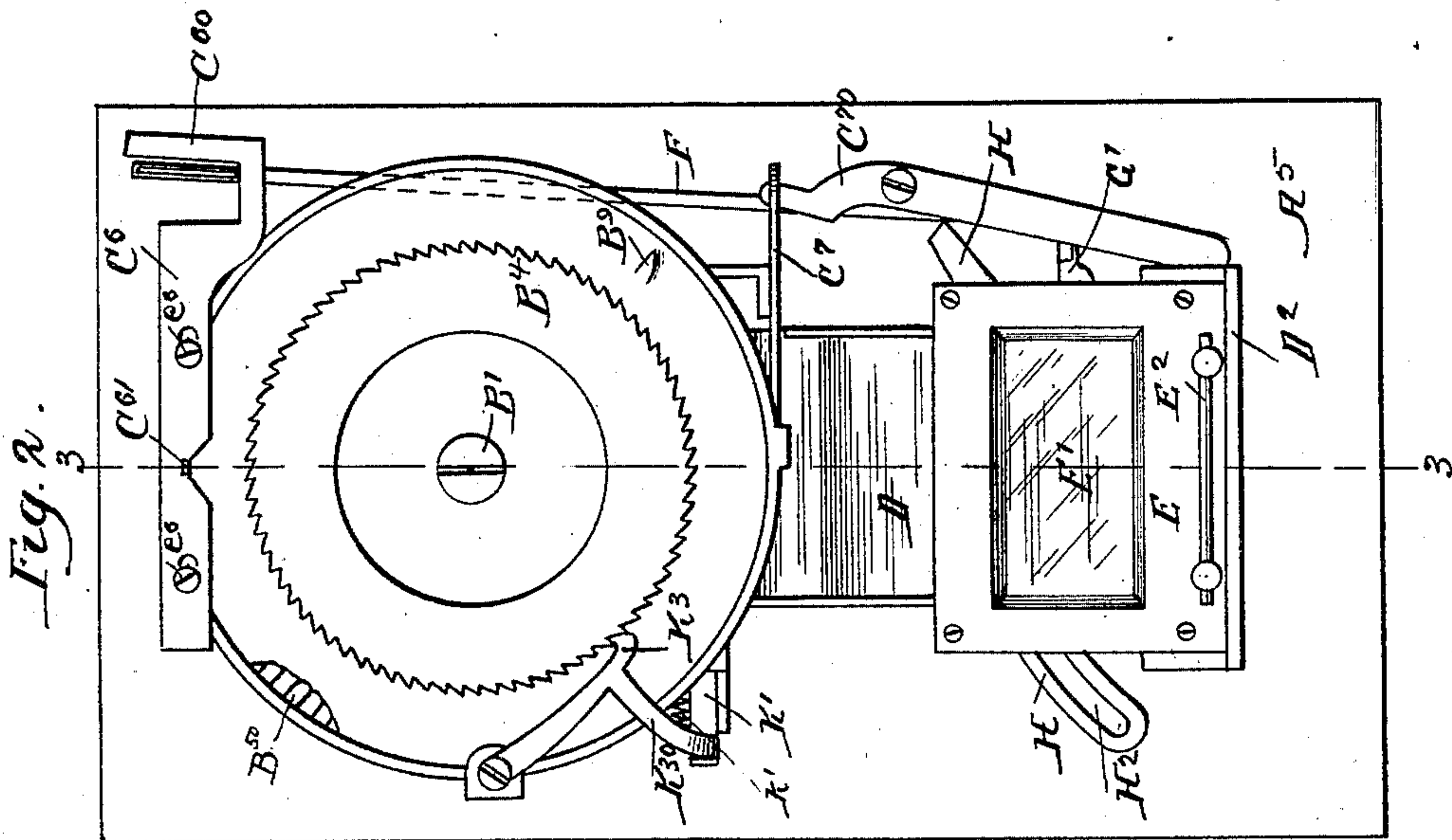
(No Model.)

3 Sheets—Sheet 1.

S. M. & C. O. DOWST.
COIN CONTROLLED STAMP DELIVERY MACHINE.

No. 440,698.

Patented Nov. 18, 1890.



Witnesses:

Jean Elliott.
Julia Usher.

Inventor:

Samuel M. Dowst
Chas. O. Dowst
By Burton & Burton.
Attorneys.

(No Model.)

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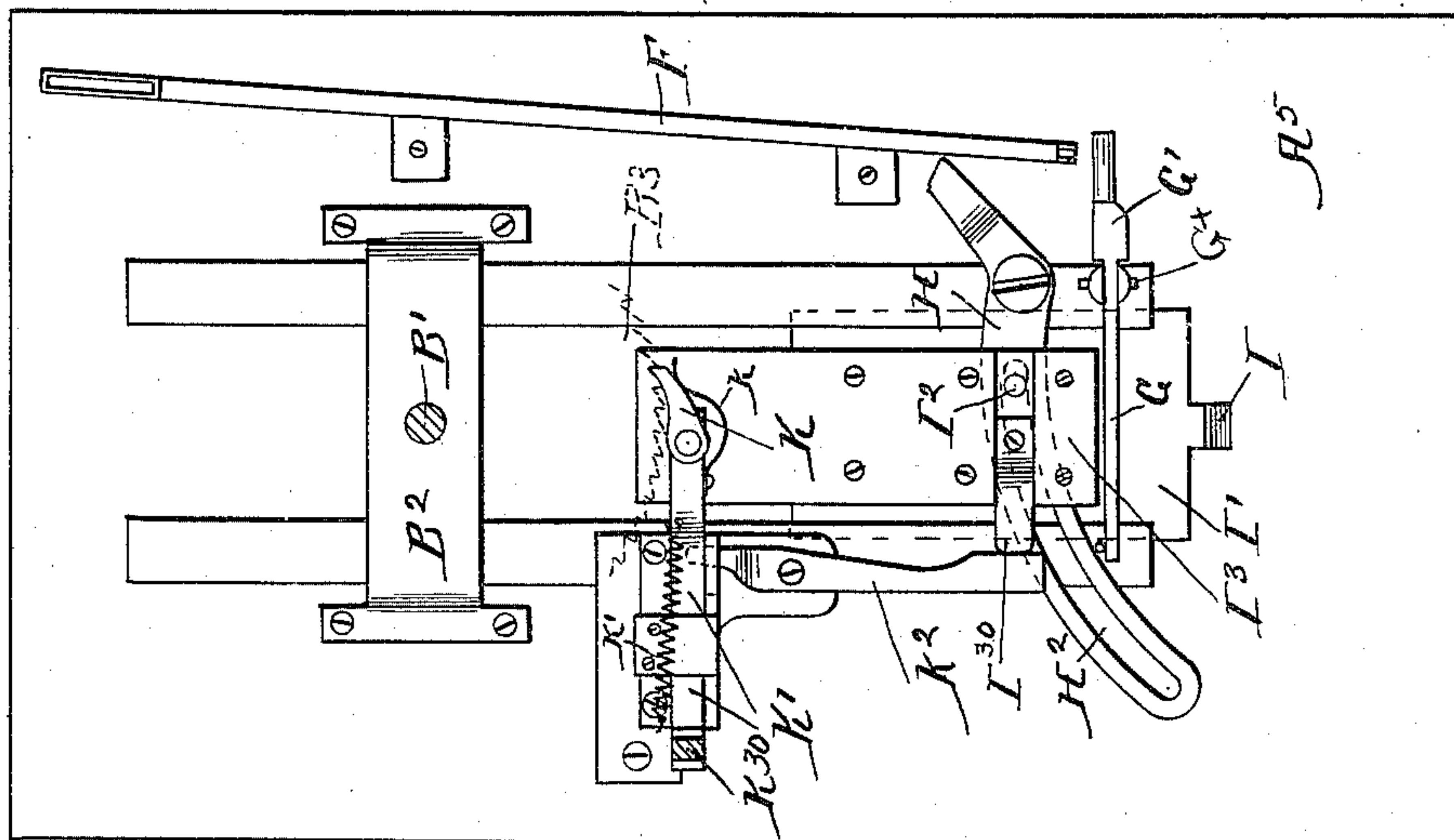
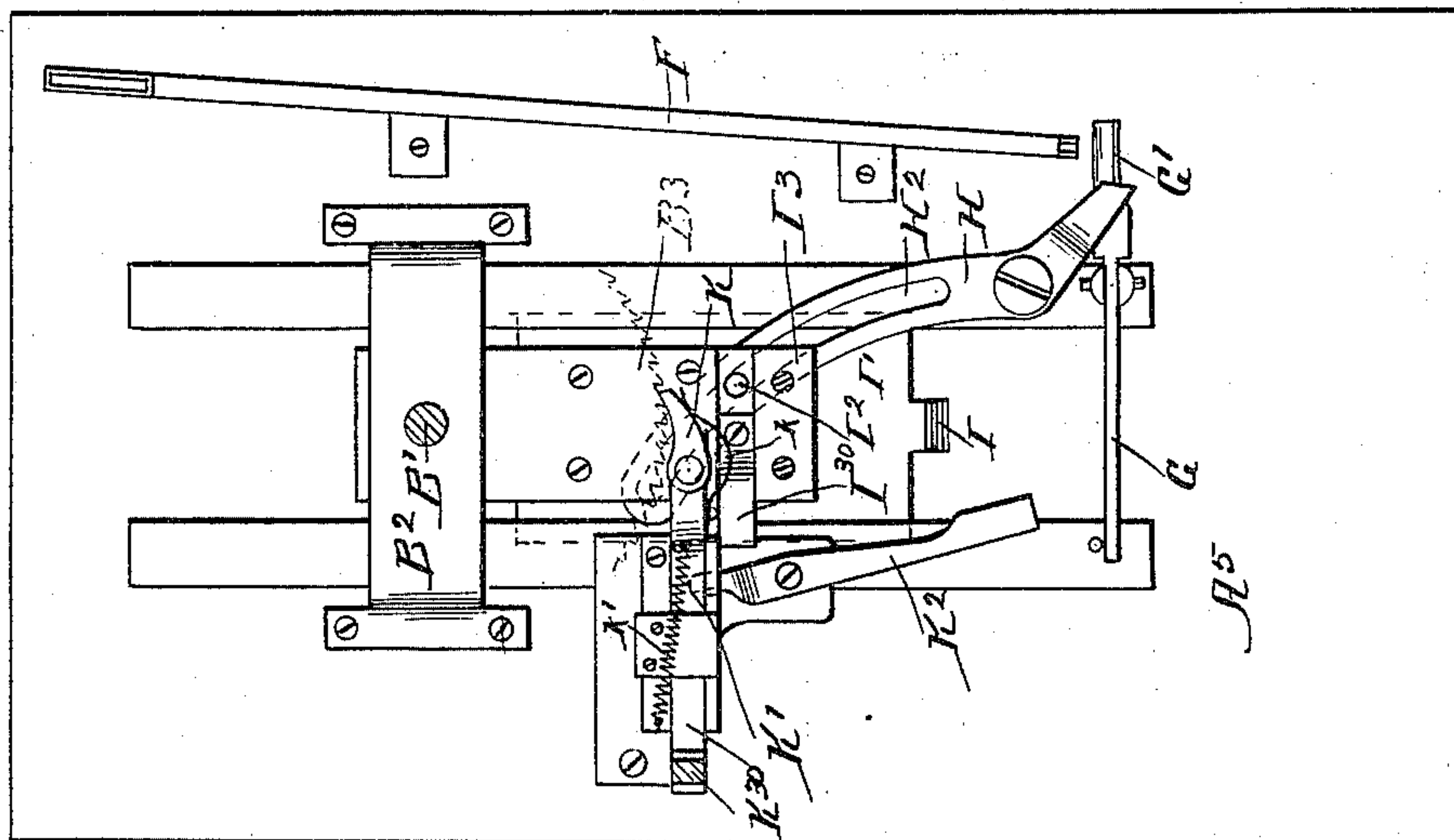
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Inventor:

Samuel M Dows
Chas. Q. Dows
By Burlington Burlington
Attorneys

UNITED STATES PATENT OFFICE.

SAMUEL M. DOWST AND CHARLES O. DOWST, OF CHICAGO, ILLINOIS, ASSIGNORS
TO THE AUTOMATIC MACHINE COMPANY, OF SAME PLACE.

COIN-CONTROLLED STAMP-DELIVERY MACHINE.

SPECIFICATION forming part of Letters Patent No. 440,698, dated November 18, 1890.

Application filed July 3, 1890. Serial No. 357,596. (No model.)

To all whom it may concern:

Be it known that we, SAMUEL M. DOWST and CHARLES O. DOWST, citizens of the United States, residing at Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in a Coin-Controlled Stamp-Delivering Machine, which are fully set forth in the following specification, reference being had to the accompanying drawings, forming a part thereof.

The purpose of this invention is to provide reliable and convenient means for delivering stamps and other like articles of inappreciable or slight weight and thickness upon the deposit of a suitable coin to pay for the same.

Figure 1 is a perspective of our machine. Fig. 2 is a front elevation with the front plate removed. Fig. 3 is a section at the line 3 3 on Fig. 2. Fig. 4 is a section at the line 4 4 on Fig. 3, showing, however, in dotted lines certain parts in front of the plane of the section, the position of the parts shown in this view being that occupied when the device is closed and locked. Fig. 5 is a detail side elevation of the parts with which the coin cooperates in unlocking, the same being shown with the coin in position to perform that function, the other parts being in the position shown in Fig. 4. Fig. 6 is a sectional elevation similar to Fig. 4, but showing the parts in the position occupied when the sliding door is open. Fig. 7 is a detail front elevation of the locking mechanism only in the position occupied after the first deposit of the coin and the partial lifting of the door to bring into operation the locking mechanism to unlock the door by the assistance of the coin. Fig. 8 is a sectional plan of the same parts shown in Fig. 7, section being made at the line 8 8 on Fig. 9. Fig. 9 is a detail side elevation of the same parts in the position shown in Fig. 8. Fig. 10 is a section at the line 10 10 on Fig. 3. Fig. 11 is a perspective of a stamp-case used with my machine.

A is the exterior case. It has at the forward side the opening A', through which access is obtained when the door which closes it is withdrawn into the delivering-receptacle, hereinafter described. It has at the upper right-hand corner the slot A², which leads into

the coin-chute. It has in the upper end the door A³, by which access is obtained to charge or fill the magazine with the stamps or other articles to be delivered. It has at the lower end of the right-hand side the door A⁴, by which access is obtained to the coin-drawer. Each of the doors A³ and A⁴ is fastened by a suitable secure lock operated by a key, as indicated by the key-holes a³ and a⁴, respectively.

B is the magazine, adapted to contain the stamps or articles to be delivered. This magazine is journaled on the stud-bolt B', which is inserted through the center of the cylinder and screwed into the standard B², which is made fast to the back A⁵ of the case A. The cylinder has the radial partitions B⁵, said partitions dividing the exterior portion of the cylinder into receptacles or pockets b⁵, each pocket being adapted to receive the number of stamps which it is designed to deliver at each action of the mechanism—that is, upon each deposit of the selected coin. These partitions need not extend, and as illustrated do not extend, entirely across from disk to disk of the cylinder, each partition being, as illustrated, made up of two pieces secured, respectively, to the two disks and to the hub B⁶ of the cylinder, thus leaving the space B⁷ for convenience of handling the stamps in inserting or removing them, a small pair of pinchers being the most convenient tool with which to handle them, such tool being inserted in the space B⁷ to seize the contents of any one pocket without the inconvenience which would be experienced if it were necessary to reach down into the pocket between the two partition-walls in order to grasp the stamp. Upon the back of the cylinder B is fixed a ratchet-plate B³, having as many teeth as there are pockets b⁵, by means of which the cylinder is actuated, as hereinafter described. A similar ratchet-plate B⁴, but with its teeth pointing in an opposite direction, is secured on the front side of the cylinder, though it is not material that the two plates should be at opposite sides, but only that they should be adapted to operate or be operated by a pawl in opposite directions.

C is the magazine-case, which is a cylinder

dricial band which incloses the magazine B, fitting it snugly, but not so as to prevent the magazine from turning readily within such case. This magazine-case is supported upon the back A⁵ of the outer case A in any convenient manner. As illustrated, it has four feet C' C' C' C' extending to the back of the case and made fast thereto. At the upper side the case C is open for a distance of sixty degrees, exposing the open ends of the magazine-pockets for that distance, said opening being directly below the door A³, so that when that door is open access to the magazine is obtained through said opening C² in the magazine-case to charge the magazine.

The case C has at the lower side an opening C³ equal in extent to the end opening of each of the pockets b⁵, so that the contents of any pocket that may coincide with that opening may be delivered by gravity out of said pocket and through said opening into the delivery-receptacle, which is located immediately below the magazine.

D is the delivery-receptacle. It is open at the top and at the forward side. It opens immediately underneath the magazine, whose case C closes it at the top, except as to the access, which is obtained from the magazine into the delivery-receptacle at the opening C³ in said magazine-case. At the forward side the opening in said delivery-receptacle faces the opening A' in the outer face A, so that access into the delivery-receptacle may be obtained from outside of the entire case through said opening A'. The delivery-receptacle is supported by being provided with a foot D', which extends back from its lower end to the back of the case A and is made fast thereto, leaving a space between the back of the delivery-receptacle and the back of the case, in which certain of the mechanism is located, as hereinafter explained. To the delivery-receptacle at the lower end of the forward side there is secured the angle-bar D², whose vertical lip has a width corresponding to the vertical movement necessary in certain of the operating mechanism, hereinafter described, and whose horizontal lip affords support and lodgment for the sliding door which closes the opening A' in the case A, the forward edge of said horizontal lip being in contact with the front plate of the case A below the lower margin of said opening.

E is a sliding door adapted to close the opening A' and obstruct entrance into the delivery-receptacle D. It is larger in vertical and horizontal dimensions than the opening A', so that placed in position within the case it obtains bearing on all four sides beyond the margin of said opening. It is provided with an opening which is filled with a transparent pane E', and it has a handle E², which projects through the opening A' and by which the door may be operated from outside of the case when properly unlocked. It is provided with a yoke E³, whose two lateral arms are secured to the back side of the door, said yoke

extending around and embracing within it the delivery-receptacle D, the rear bar of said yoke affording means for connecting the same and thereby the door to the locking mechanism, which is located behind the delivery-receptacle.

It will be observed from the description already given that if the magazine is charged with stamps—one in each of its pockets—and if it be alternately rotated and halted to bring one pocket at a time in line with the discharge-aperture C³ of the magazine-case, the contents of said pockets will be delivered one by one from the magazine into the delivery-receptacle, and that if the door which closes said receptacle in front be opened, permitting access through the outer case into the receptacle, the stamps thus delivered into the delivery-receptacle may be removed from the case.

We will now describe the mechanism by which the door is locked and unlocked and by which the magazine is rotated by sliding the door up and down. To the back plate there is secured the coin-chute F, which extends forward and terminates at the slot A² in the front plate. At the lower end said coin-chute terminates just above the arm G' of the lever G, which rocks horizontally on a vertical pivot G^x on the back of the case and has the upper side of the end of the arm G', which is at the delivery end of the coin-chute, beveled to adapt it to be actuated by the curved edge of the coin delivered upon it, so that when such coin is pushed downward that arm of the lever will be crowded backward, carrying forward the other arm, which operates as a latch to lock the sliding door closed, as shortly hereinafter explained.

H is a lever rocking vertically on a horizontal pivot on the back plate and having its shorter arm protruding across the path of the coin through the coin-chute, which is slotted to admit said arm, said lever, however, at its lowest position having its said shorter arm entirely out of the path of the coin, but adapted, when the lever is rocked, to pass into said path, as stated, so that if in the meanwhile a coin had been dropped into the chute and lodged upon the lever-arm G' the shorter arm of the lever H, upon said lever being rocked, will descend upon the upper edge of the coin and push the coin down, causing it to crowd the lever-arm G' back and withdraw the opposite arm out of the path of the catch, which it is adapted to engage to lock the door shut. This catch consists of a nose I at the lower end of the slide I', which moves in vertical slide-bearings upon the back of the case and has its shoulder facing upward to engage under the lever G and its tapering face adapted to crowd said lever back as the nose descends from above it, so that the nose can pass the lever and be stopped below it. The slide I', which carries said nose, carries also the stud-pin I², which engages in the slot H² of the lever H, and as the slide is vertically operated in its bearings said stud, by means of its en-

gagement in said slot, rocks the lever H to cause it to protrude its shorter arm into the coin-chute and force it down onto the coin to cause the latter to operate the lever G to dis-

engage it from the nose I, as before described. The mechanism just described is the same as that which is more particularly described in Letters Patent No. 430,569, dated June 17, 1890, granted to us as assignees of the applicants, Samuel M. Dowst and Frank H. Hos-

mer. The slide I' has the block I³ secured to it in front to afford means for connecting it to the cross-bar of the yoke E³, and thereby caused to move with the door E. It will be observed that, as in said former patent, the nose I at the lowest position of the slide to which it is attached stands some distance below the latch or lever G, which prevents the door from being fully opened—that is, that the door can be lifted some distance before the obstruction offered by said latch is encountered—the construction being in this respect similar to that set forth in that patent, some portion of the play thus obtained being necessary to give opportunity to the lever H to cause it to actuate the latch or lever G before the nose reaches that lever. In the present structure the distance which the slide and nose and door can move before the latch is encountered by the nose is somewhat greater than is necessary for the purpose last stated, and this play in this construction serves an additional purpose, which will be apparent from the further description.

K is a pawl adapted to engage the ratchet-disk B³ of the magazine B, said pawl being pivoted upon the sliding arm K', which is supported in horizontal slide-bearings on the back of the case A, the pawl being provided with the spring k, adapted to hold it against the rim of the ratchet-disk, and the slide being provided with the spring k', adapted to hold it at the outer limit of its sliding movement and to move it in a direction to retract the pawl over the ratchet-disk.

K² is a lever pivoted on a horizontal pivot in the back of the case and engaging at its upper end the slide-bar K'. The block I³ has a projection I³⁰, which extends laterally far enough to contact with the lateral edge of the lever K² below the pivot of the latter, said lever being held against the said projection by the action of the spring k'. Said lever-arm on the side which contacts the projection I³⁰ is cut back from the line of the path of the contacting end of said projection I³⁰, so that as said projection travels vertically with the slide I' said lever-arm, being held against the projection by the spring k', is caused to swing back and forth and so to move or permit the motion of the slide K' back and forth at proper time, according to the form of the edge of the lever K², for the purpose of causing the pawl K to actuate the ratchet-wheel and thereby the magazine at the proper time in the vertical movement of the slide and of the door, which

moves with the slide. It will be observed that the trailing or returning of the pawl occurs during the upward movement of the door, and that the actuating movement of the pawl will occur during the downward movement of the door, and it should be further noted that the said lever K² is cut away at such point that the extent of the returning or trailing movement of the pawl occasioned while the slide is moving upward as far as it can move before the nose I engages the latch or lever G is not sufficient to withdraw the pawl past the point of a ratchet-tooth, so that such action is inoperative to actuate the magazine or prepare the pawl to actuate it upon the return or downward movement of the door through the same distance. It will be observed, also, that the door E at its lowest position extends down in front of the vertical lip D²⁰ of the angle-bar D², so that the upward movement of the door does not uncover the opening into the receptacle D until such movement has equaled the entire distance that the door laps in front of said lip D²⁰. This distance is as great as the distance from the shoulder of the nose I to the latch G. It will be seen, therefore, that such movement of the door as can be given without the deposit of a coin to cause the latch to be released will be ineffectual either to gain access into the delivery-receptacle or to actuate the magazine to cause the delivery of the stamps into said receptacle. If, however, after the deposit of a coin the door be lifted, the movement at first communicated to the parts will cause the coin to withdraw the latch out of the path of the nose I and prevent it from stopping the upward movement, and the door can be fully opened, giving access to the receptacle D and retracting the pawl K past the point of a ratchet-tooth on the disk B³, and the door descending after being thus raised and carrying the projection I³⁰ downward causes it to actuate the lever K², forcing it outward and drawing the slide-bar K' inward, causing the pawl to engage a ratchet-tooth and actuate the magazine, rotating it a distance equal to the space occupied by one pocket. The edge of the lever K is cut away in such form toward the projection I³⁰ that very little motion is communicated to the lever and to the pawl by the downward movement of the door during the portion of that movement which occurs before the nose I is engaged under the latch G, the intention being that such movement as may be given the magazine during this portion of the descent of the door shall not be sufficient to remove the pocket of the magazine which has been in line with the aperture and bring the next one into such position that its contents can be discharged through the aperture, the entire effective actuation of the magazine occurring during the portion of the downward movement of the door which occurs after the nose has passed below the latch and become engaged thereby, so that the return upward is impossible. This is not inconsistent with the

fact that the upward movement of the door through the same distance—that is, through the distance which it can move before the nose collides with the latch—is ineffectual to actuate or bring the pawl in position to actuate the magazine, for in said upward movement the pawl may be retracted almost to the point of a ratchet-tooth and yet not far enough to become engaged with it, and in the downward movement it may be advanced almost to the base of a ratchet-tooth, and yet not far enough to actuate it, the very slight interval between the end of the ineffectual upward movement and the ineffectual downward movement being simply enough to permit the pawl when actually engaged with the tooth to rotate the magazine a distance equal to the thickness of the partition-wall between consecutive pockets without, therefore, uncovering the next pocket, even to the very slight extent necessary to permit the discharge of a stamp; but in order to even more effectually prevent the delivery of the stamp from the magazine into the receptacle D by the rotary movement of the magazine caused during the downward movement of the door to an extent not sufficient to latch it, as well as for other purposes which may be hereinafter stated, we prefer to provide the stamp-case N, made of sheet metal folded together in a simple form, leaving sufficient space between the folded leaves of metal to receive loosely the number of stamps which it is designed to deliver at each actuation of the magazine, such stamp-case N being of sufficient thickness, including the thickness of its two walls of sheet metal and the space between them for the stamps, to require considerable space for their delivery out of the pockets of the magazine and through the aperture C³, and when the magazine is charged, not with loose stamps, but with these stamp-cases containing stamps, it becomes necessary that the magazine should revolve far enough to expose at the aperture C³ enough of the width of the mouth of the pocket to allow the escape of the case N before delivery will be effected. This enables us to give plenty of range of movement to the dog to avoid the necessity of too accurate fitting of the parts without danger of causing too early delivery of stamps into the receptacle. In order to prevent accidental overfeeding of the receptacle by the pawl K, which might result from the momentum imparted to the receptacle by a very sudden downward movement of the door, we provide the second ratchet-disk B⁴, having its teeth facing in the opposite direction from the teeth of the ratchet-disk B³, and on the case C we pivot the dog K³, adapted to engage said ratchet-disk, and having the arm K³⁰ extending through the slide K', so that the dog is actuated by the slide and carried into engagement with the ratchet-disk B⁴ by the same movement of the slide which caused the pawl K, engaging the ratchet-disk B³, to rotate the magazine. The said dog K³ is ad-

vanced far enough so that it will engage the tooth of the disk B⁴ to arrest the movement of said disk and of the magazine by the least movement of the slide, which is sufficient to cause the pawl K to carry the magazine far enough to take the tooth of the disk B⁴ last engaged by the dog K³ out of range of the dog—that is, a movement of the pawl K which will not throw the magazine farther than one tooth brings the dog K³ in position to arrest the movement of the magazine.

C⁶ is a slide attached to the forward edge of the magazine-case C at the upper side, having a range of movement horizontally on its supporting-screws c⁶ sufficient to permit its finger C⁶⁰, which in one position closes the slot A² in the front plate, to be removed aside from said slot, so as to uncover it. This slide has a tooth C⁶¹ projecting back toward the face of the magazine, and the magazine has on said forward side a tooth B⁹ in position to engage the tooth C⁶¹ when the rotation of the magazine has brought the said tooth B⁹ into proper position, and when said teeth are thus engaged the rotation of the magazine a distance corresponding to one pocket operates the slide C⁶, actuating it horizontally and moving the finger C⁶⁰ into position such that it closes the slot A². The tooth B⁹ is located on the magazine at such position that it will be engaged and actuate the slide to close the slot when a certain pocket, being one approximately opposite the tooth, at the lower side of the magazine is coincident with the aperture C³. In filling the magazine it is designed to place in this pocket, (marked for distinction B⁵⁰), instead of a case containing a stamp a special case marked with the word "Empty" or with a word indicating that the magazine is emptied, and when the device has been operated as many times as there are pockets in the magazine, so that the latter has been rotated once and the pocket B⁵⁰ has been brought to the aperture C³ and has delivered the case marked "Empty," the same movement which caused that delivery will operate the slide C⁶ and close the slot, thus providing double means for preventing the deposit of coin in the slot at a time when the magazine is not charged so as to deliver stamps, the intending user being warned by the presence of the empty card in the receptacle from attempting to operate the device, and being further prevented from depositing a coin by the closing of the slot.

C⁷ is a slide having bearings provided for it on the case C, adapted to close the aperture C³.

C⁷⁰ is a lever pivoted on the case, engaging the protruding end of the slide C⁷ to actuate it at will. This lever extends down past the delivery-receptacle D and has its handle within reach of the operator through the door A⁴, which gives access to the coin-drawer. The purpose of this aperture is to close the aperture C⁵ while the magazine is being charged, it being necessary to rotate it by hand for that purpose, the absence of such a

prevention causing danger of delivering the contents of half the magazine while the other half is being filled.

We claim—

5 1. In combination with the exterior case, the magazine adapted to discharge its contents when rotated, a receptacle within the exterior case into which the magazine discharges, a door which closes such receptacle, mechanism for rotating the magazine, connected to and operated by the door, and coin-controlled mechanism which locks the door and thereby locks the rotating mechanism, substantially as set forth.

15 2. In combination with the exterior case, the magazine having peripheral pockets, the magazine-case inclosing the magazine and having an opening through which the pockets may discharge successively as the magazine revolves, the receptacle located in position to receive the contents discharged through said opening, the door which closes such receptacle, mechanism for rotating the magazine, connected to and operated by the door, and coin-controlled mechanism which locks the door and thereby locks the rotating mechanism, substantially as set forth.

3. In combination with the exterior case, a magazine, the delivery-receptacle within the case adapted to receive articles from the magazine, mechanism for delivering the articles successively from the magazine into the delivery-receptacle, a door which when opened affords access into the delivery-receptacle from outside the case, mechanism by which the door actuates the delivery mechanism, and coin-controlled mechanism for such door, substantially as set forth.

4. In combination with the exterior case, a magazine therein, the delivery-receptacle within the case adapted to receive articles from the magazine, mechanism for delivering the articles successively from the magazine into the delivery-receptacle, a door which when opened affords access into the delivery-receptacle from outside the case, mechanism by which the door actuates the delivery mechanism during the closing movement of the door, and coin-controlled locking mechanism for the door, substantially as set forth.

5. In combination with the exterior case, a magazine, the delivery-receptacle within the case adapted to receive articles from the magazine, mechanism for delivering the articles successively from the magazine into the delivery-receptacle, a door which when opened affords access into the delivery-receptacle from outside the case, coin-controlled locking mechanism for such door, and connections from the door by which it actuates the delivering mechanism during the closing movement of the door and after the latter is locked, substantially as set forth.

6. In combination, substantially as set forth, the rotary magazine having peripheral pockets, the case which closes the discharge-mouth of said pockets, having an opening at one

point to permit the discharge of the pockets as they successively revolve past said opening, the delivery-receptacle into which said opening leads, the sliding door which closes said receptacle, and mechanism actuated by the door as the latter slides to rotate the magazine, and coin-controlled mechanism for locking such door, whereby upon the deposit of proper coin the door may be opened and caused to actuate the magazine to cause the delivery from it into the receptacle of the contents of one pocket, substantially as set forth.

7. In combination with the magazine having pockets for packages and the receptacle having an aperture at the top in position to coincide successively with the discharge-mouths of the pockets as the magazine revolves, the door which closes said receptacle and mechanism connected to and actuated by the door in the latter part of its closing movement to rotate the magazine, said door having a range of movement after it reaches a position where in it fully obstructs access to the receptacle sufficient to so actuate said mechanism, substantially as set forth.

8. In combination with the case and the delivery-receptacle having its delivery-opening coinciding with an opening through the case, the magazine having pockets for packages, revolving above the delivery-receptacle to bring the discharge-mouths of said pockets successively into position to discharge into the receptacle, a sliding door for said receptacle, which when closed obstructs access into it from outside the case, pawl-and-ratchet mechanism connected to the door and actuated by the sliding movement thereof to rotate the magazine, the pawl of said mechanism being retracted over the ratchet-wheel during the opening movement of the door and engaging its ratchet and actuating said magazine during the latter part of the closing movement only, said actuation being sufficient to cause the delivery of the contents of a pocket into the receptacle only after the door has closed far enough to obstruct access into the receptacle, whereby access from outside the case into the magazine through the receptacle is prevented, substantially as set forth.

9. In combination with the magazine having pockets, a delivery-receptacle with which said pockets successively communicate as the magazine revolves, a door which closes said receptacle, mechanism operated by the door to rotate the magazine during the closing movement of the door, and coin-controlled mechanism which locks the door shut, adapted to engage and so lock the door during the closing of the latter before said movement has actuated the magazine, substantially as set forth.

10. In combination with the magazine having peripheral pockets, the case inclosing said magazine, and an aperture through which said pockets can discharge successively as they reach the same in the rotation of the maga-

zine, mechanism adapted to be operated from outside the case to rotate the same, coin-controlled locking mechanism for said magazine-operating mechanism, an exterior case which
5 incloses said magazine and magazine-case, having a slot through which a coin may be introduced to operate said coin-controlled mechanism, and a slide adapted to close said slot, the magazine having a projection which
10 engages said slide at one point in the rotation of the magazine to operate the same to close the slide, substantially as set forth.

11. In combination with the magazine having the ratchet-disk B^3 , the pawl K, and the
15 slide-bar which supports it, the lever K^2 , which operates said slide-bar, the sliding door having the projection I^{20} , which contacts the side of the lever K^2 to operate said lever and the
20 pawl K as the door reciprocates, the edge of said lever being shaped at the edge which said projection contacts, substantially as described, to cause the projection to move the lever to drive the pawl into operative engage-

ment with the ratchet B^3 during the latter part only of the descending movement of the
25 door, substantially as set forth.

12. In combination with the magazine having the ratchet-disks B^3 and B^4 , having their teeth facing in opposite directions, the actuating-pawl K, and the mechanism which op-
30 erates it, the detent-dog K^3 , connected to and actuated by the mechanism which actuates the pawl K, substantially as set forth, whereby said detent-dog is protruded into the path of
35 the teeth of the ratchet B^4 by the first feeding movement of the pawl K to prevent over-feeding of the magazine, substantially as set forth.

In testimony whereof we have set our hands, in the presence of two witnesses, at Chicago,
40 Illinois, this 28th day of June, A. D. 1890.

SAMUEL M. DOWST.
CHARLES O. DOWST.

Witnesses:

CHAS. S. BURTON,
JEAN ELLIOTT.