

(No Model.)

3 Sheets—Sheet 1.

H. BENHAM.
LETTER BOX.

No. 575,048.

Patented Jan. 12, 1897.

Fig. 1.

Fig. 7.

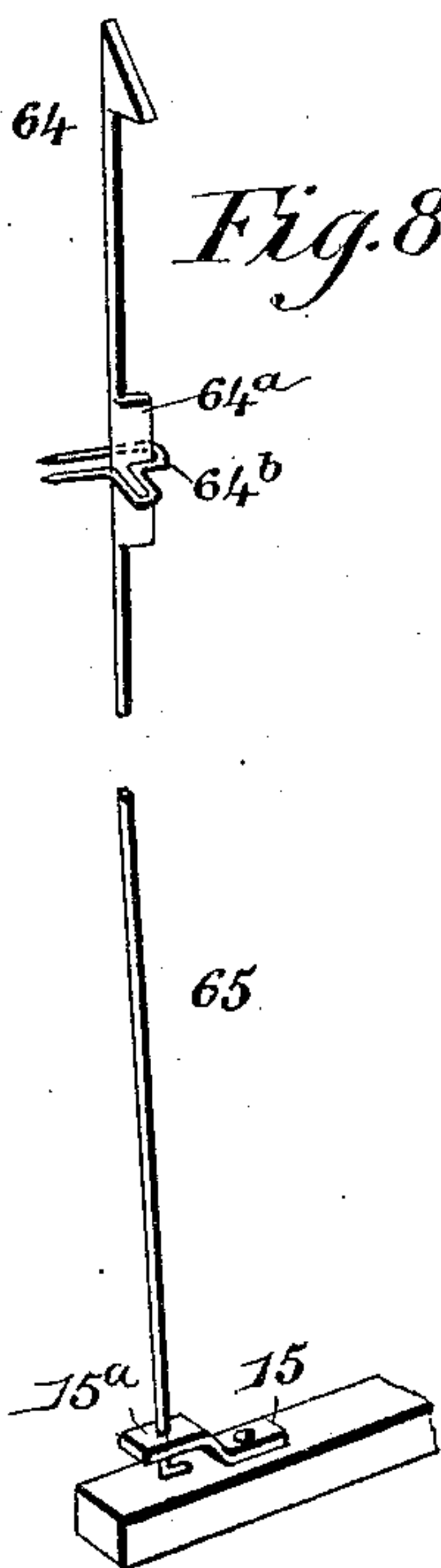
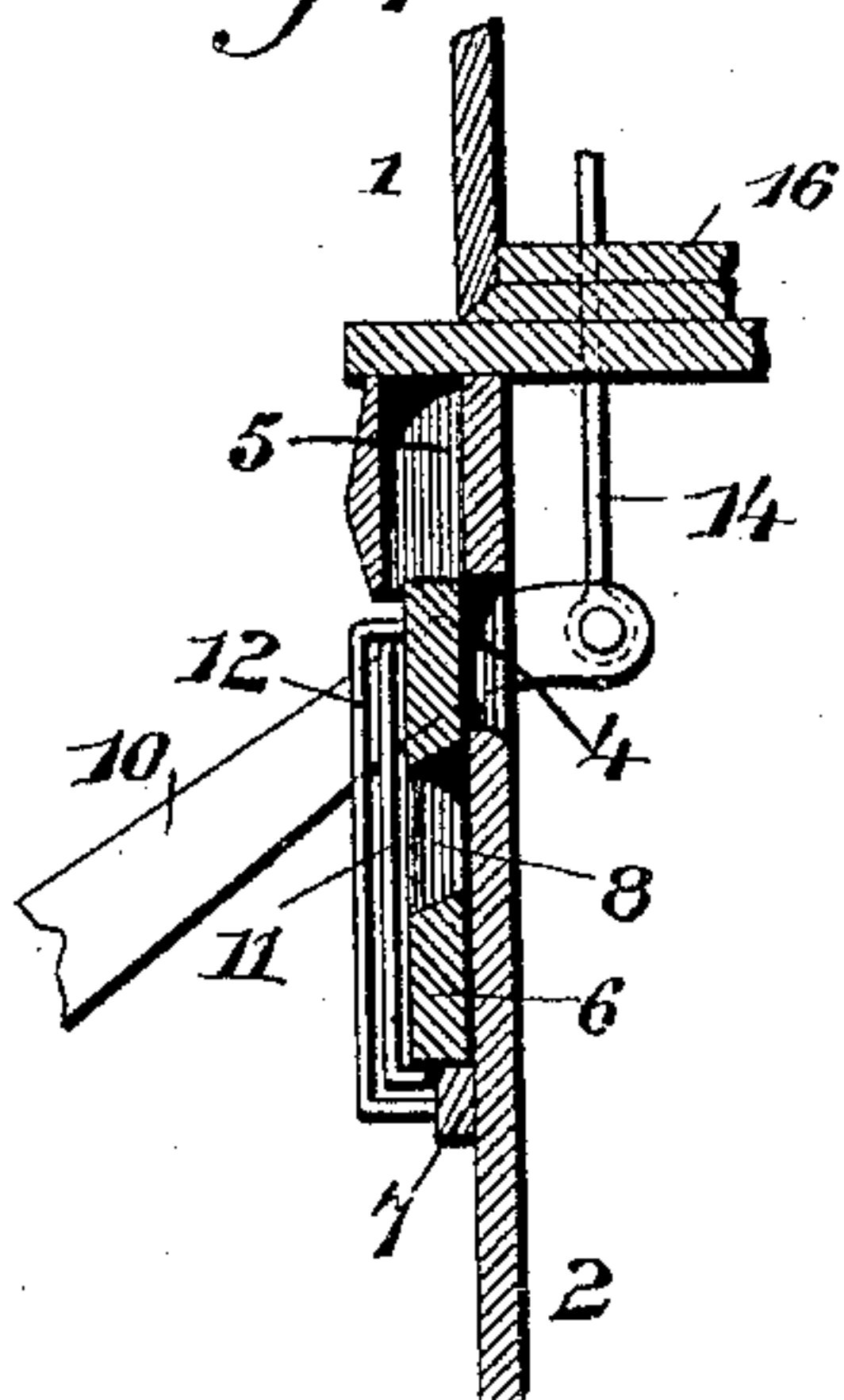
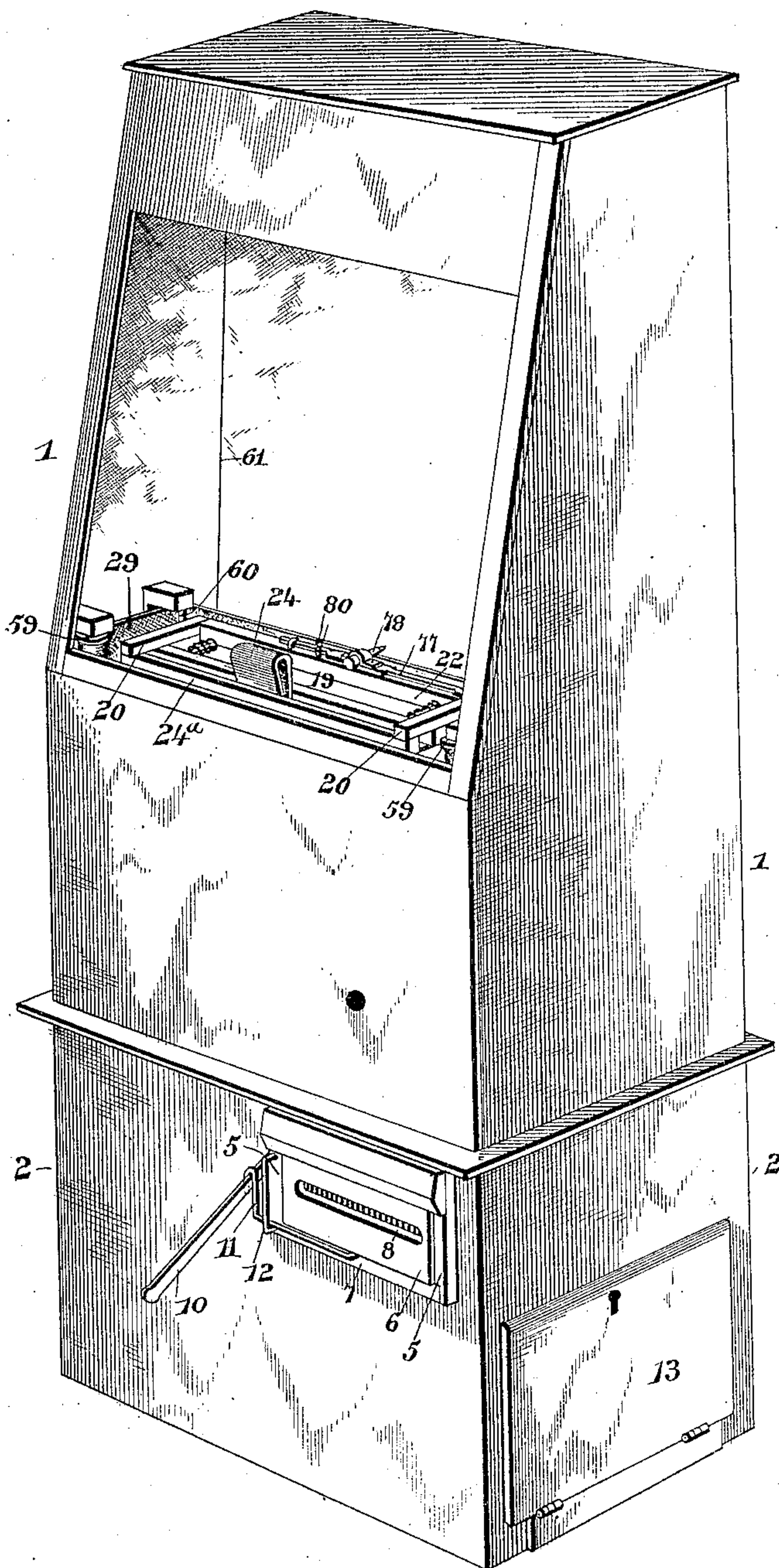


Fig. 8.



Inventor

Witnesses

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By His Attorneys,

Harvey Benham
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(No Model.)

3 Sheets—Sheet 2.

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Fig. 2.

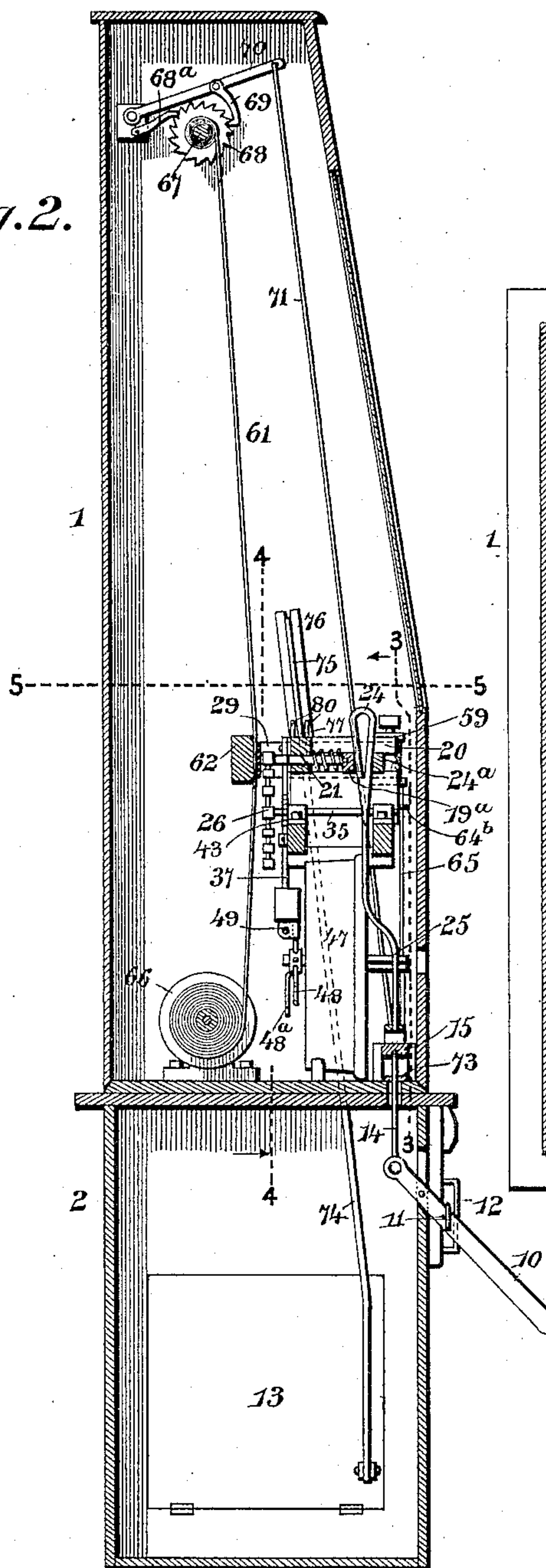


Fig. 5.

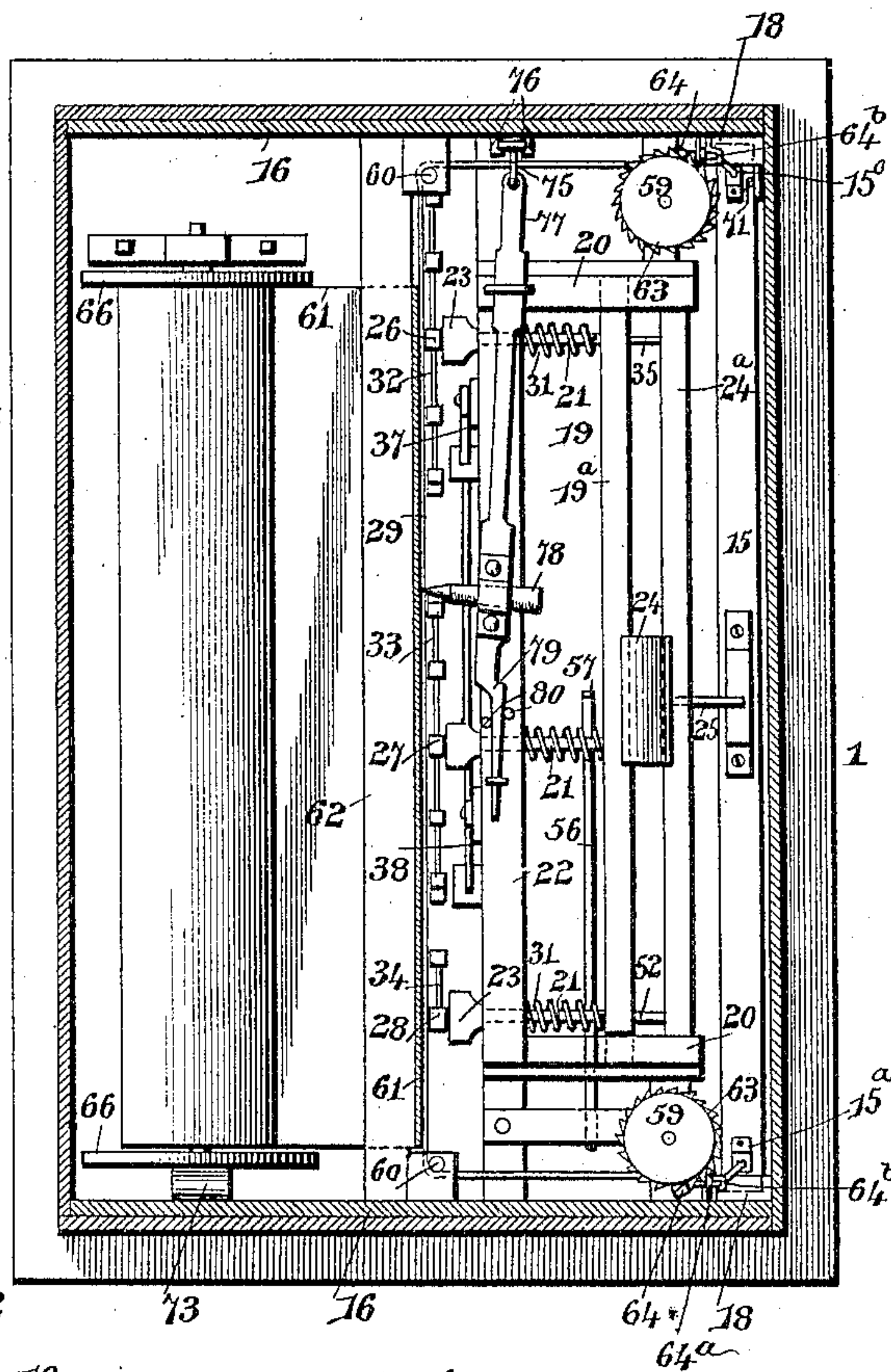
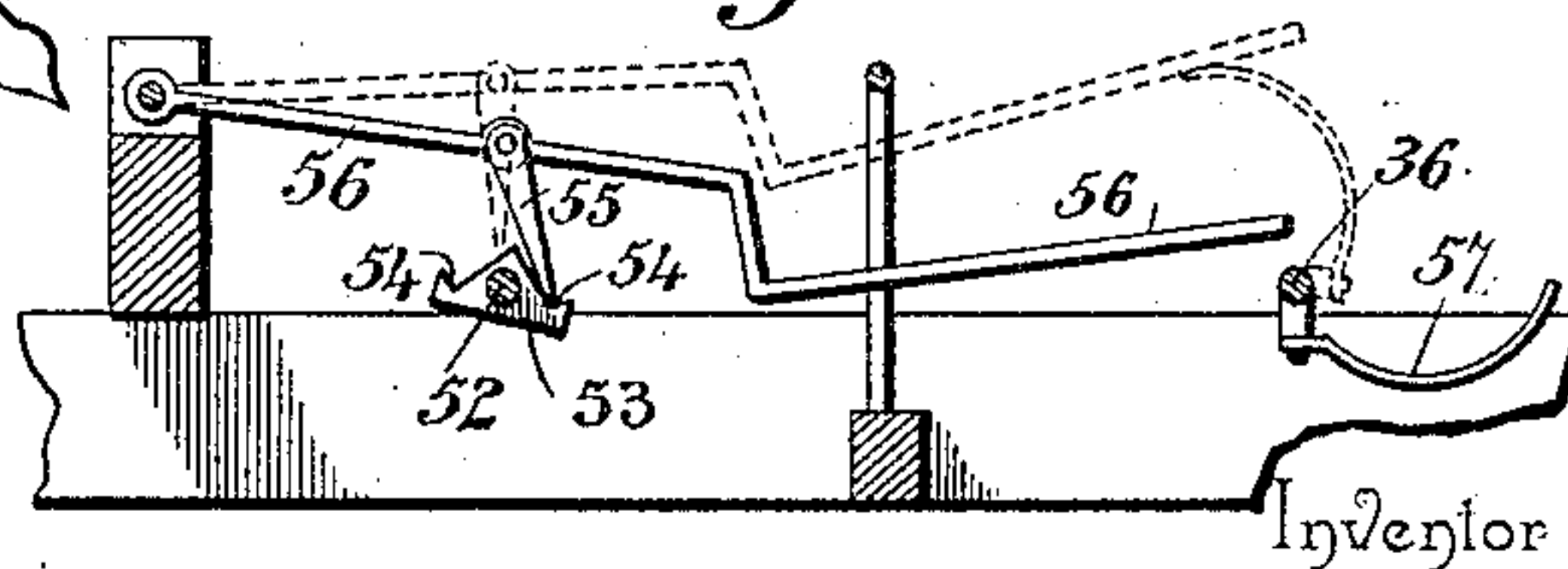


Fig. 6.



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(No Model.)

3 Sheets—Sheet 3.

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Fig. 3.

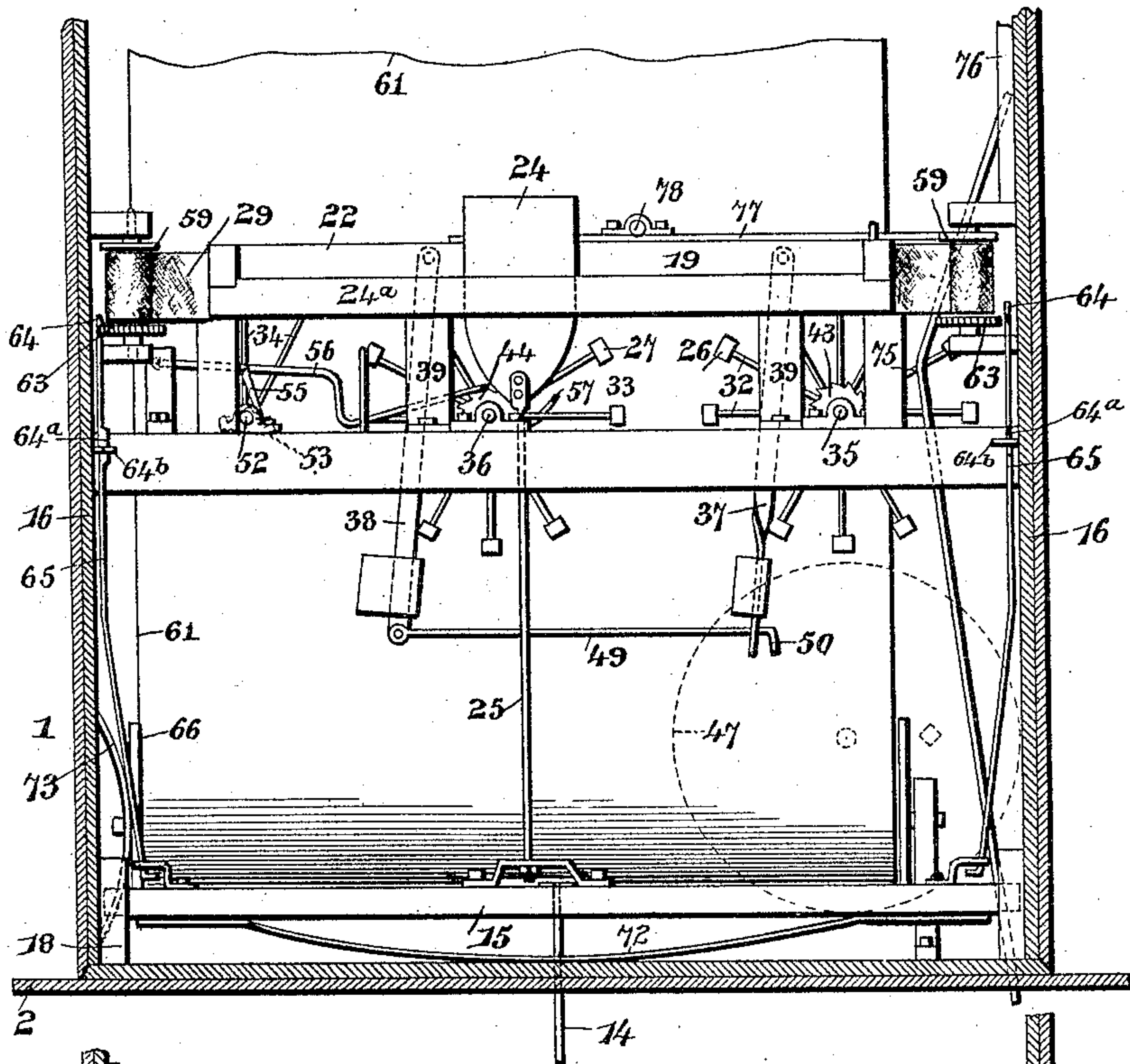
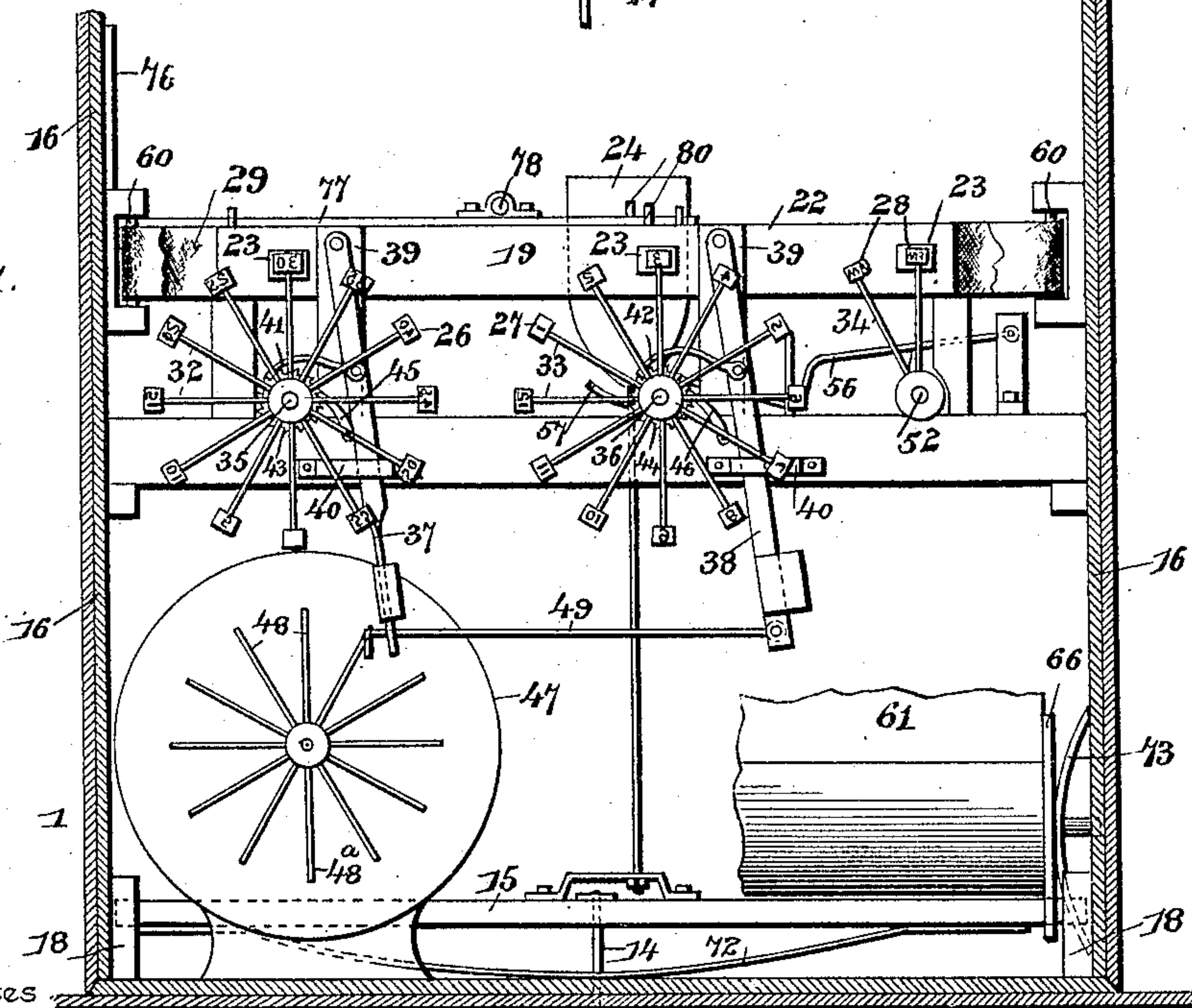


Fig. 4.



Witnesses

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Inventor

UNITED STATES PATENT OFFICE.

HARVEY BENHAM, OF PLUMMER, INDIANA.

LETTER-BOX.

SPECIFICATION forming part of Letters Patent No. 575,048, dated January 12, 1897.

Application filed June 19, 1896. Serial No. 596,188. (No model.)

To all whom it may concern:

Be it known that I, HARVEY BENHAM, a citizen of the United States, residing at Plummer, in the county of Greene and State of Indiana, have invented a new and useful Letter-Box, of which the following is a specification.

The invention relates to improvements in letter-boxes.

The object of the present invention is to provide a letter-box which will record the time each letter is deposited in it and the time of each collection by a letter-carrier, and thereby provide a check on letter-carriers to prevent them from neglecting any letter-boxes, by enabling their negligence or omission to be readily ascertained at a glance.

A further object of the invention is to enable a letter-carrier to ascertain readily without opening a letter-box if any letters have been deposited therein, and thereby avoid any unnecessary opening of letter-boxes and consequent loss of time.

The invention consists in the construction and novel combination and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended.

In the drawings, Figure 1 is a perspective view of a letter-box constructed in accordance with this invention. Fig. 2 is a central vertical sectional view. Fig. 3 is a vertical sectional view on line 3 3 of Fig. 2. Fig. 4 is a vertical sectional view on line 4 4 of Fig. 2. Fig. 5 is a horizontal sectional view on line 5 5 of Fig. 3. Fig. 6 is a detail view of the mechanism for indicating the time, whether "A. M." or "P. M." Fig. 7 is a detail sectional view illustrating the construction of the opening of the letter-box and the sliding cover for the same. Fig. 8 is a detail perspective view of one of the ribbon-actuating devices.

Like numerals of reference designate corresponding parts in all the figures of the drawings.

1 designates a casing, comprising a lower rectangular portion 2 and an upper portion 3. The lower portion 2 forms a receptacle for letters and is provided with a slot or opening 4 for the introduction of letters into it, and the upper portion forms a housing or recep-

tacle for the registering or recording mechanism, which indicates the time when letters are deposited into the lower portion, or the letter-box proper, and the time of each collection. The lower portion or letter-receptacle 2 is provided at the ends of the slot or entrance-opening 4 with suitable ways 5, in which is arranged a vertically-movable sliding cover 6, normally resting at the bottom of the ways 5 upon a cross-piece 7 and provided with a slot or opening 8, which is adapted to register with the slot or opening 4 when the sliding cover is raised.

The sliding cover is connected with an operating-lever 10 by a substantially L-shaped rod 11, arranged in a vertical keeper or guide 12, having one arm attached to the operating-lever and connected at the outer end of its other arm with the lower edge of the sliding cover 6, whereby, when the operating-lever is swung upward, it will carry with it the cover and cause the slot or opening 8 to register with the slot or opening 4. The slot or opening 4 is arranged at the front side of the letter-receptacle, and the latter is provided at one end with a door 13, hinged at its lower edge, adapted to swing downward and upward to afford access to the interior of the letter-receptacle and enable a letter-carrier to remove the contents thereof, and it is designed to be secured, when closed, by any suitable locking device. This door is connected with registering mechanism hereinafter described for recording the time when it is opened to indicate when each collection is made.

The operating-lever is fulcrumed intermediate of its ends on the lower portion of the casing and extends through a slot thereof and has its inner end connected by a rod 14 with a vertically-movable horizontally-disposed reciprocating bar 15, which is connected with and actuates the mechanism for recording the time each letter is deposited in the box or receptacle 2, whereby, when the operating-lever is swung upward to open the box or receptacle 2 to deposit a letter therein, the time when such letter is deposited will be simultaneously recorded. The rod 14, which is vertically disposed, is centrally arranged and passes through a perforation of the top of the box or receptacle 2 and the bottom of

a supporting-frame 16, which is mounted upon the box or receptacle 2 and arranged within the upper portion 3 of the casing.

The horizontally-disposed vertically-movable bar 15 is located at the front of the casing at a point above the bottom of the supporting-frame 16. Its ends are arranged in vertical guides 18, and it is centrally connected with and adapted to operate a stamping-frame 19, disposed horizontally, mounted in suitable ways 20 of the supporting-frame and provided with plunger-rods 21. The stamping-frame 19, comprising a horizontally-disposed bar 19^a, and the plunger-rods 21, extending inward or rearward from the bar 19^a, guided in perforations of a bar 22 and provided at their rear ends with heads 23.

A vertically-movable wedge 24 is interposed between the bar 19^a of the stamping-frame and a horizontal bar 24^a of the supporting-frame, which is located in advance of the bar 19^a, and the wedge 24 is connected with the vertically-movable bar 15 by a rod 25, whereby, when the vertically-movable bar is drawn downward by the operating-lever, the wedge will force the stamping-frame 19 rearward to carry stamps 26, 27, and 28 rearward against a ribbon 29 and print the time on a movable sheet. The stamping-frame is returned to its initial position when the outer portion of the operating-lever is lowered by spiral springs 31, disposed on the plunger-rods 21 and interposed between the bar 22 of the supporting-frame and the rear face of the bar 19^a of the stamping-frame.

The stamps 26 indicate the minutes and are carried by a minute-wheel 32. The stamps 27, which indicate the hours, are carried by an hour-wheel 33, and the stamps 28, which are two in number and which indicate "A. M." and "P. M.," are carried by an oscillating frame 34, which is shifted every twelve hours to change the time from "A. M." to "P. M.," and vice versa.

The minute-wheel 32, which is mounted on a horizontal shaft 35, is provided with twelve spokes carrying the stamps 26, which range from "5" to "55," the twelfth spoke being a blank. The hour-wheel 33, which is constructed similar to the wheel 32 and which is mounted on a horizontal shaft 36, is provided with twelve spokes and carries stamps ranging from "1" to "12," and these wheels are actuated by depending oscillating levers 37 and 38, fulcrumed at their upper ends on suitable supports 39 of the supporting-frame, arranged in suitable guides 40 and carrying actuating-pawls 41 and 42, engaging, respectively, ratchet-wheels 43 and 44 of the horizontal shafts 35 and 36. The oscillating levers are provided at their lower ends with weights and are adapted to be swung laterally by means hereinafter described, and when thus actuated the weights carry them back to their initial position and impart sufficient force to them to enable them to actuate the time-wheels through the pawls and the ratchet-

wheels, and the ratchet-wheels are engaged by check-pawls 45 and 46 to prevent retrograde rotation.

The mechanism for actuating the time-wheels comprises a clock mechanism 47 and a vertically-disposed wheel 48, which is provided with twelve spokes, eleven of which are arranged to engage and actuate the oscillating lever 37, while the twelfth spoke 48^a is offset from the vertical plane of the other spokes and is adapted to engage a rod 49, which connects the lower ends of the oscillating levers. The rod 49 is pivoted at one end to the oscillating lever 38 and its other end extends through a perforation of the lower end of the lever 37 and is bent downward at 50 to form a head, and when the head is engaged by the outwardly-bent spoke 48^a both of the time-wheels will be simultaneously operated. The hour-wheel is actuated one tooth each time the minute-wheel makes one complete revolution, and the hour-wheel, which is provided with twelve spokes or arms, makes one revolution every twelve hours.

The oscillating frame 34, which carries the stamps 28, is substantially V-shaped, consisting of a pair of arms which are connected with a horizontal shaft 52 and which carries a substantially triangular shifting device 53. The triangular shifting device 53 has its apex arranged at its top and is provided at opposite ends of its base with shoulders 54, adapted to be engaged alternately by an oscillating finger 55, which is carried by a lever 56. The lever 56 is fulcrumed at its outer end on a suitable support of the frame 16, and its inner end is arranged to be engaged by a curved arm 57, which forms a cam and which is mounted on the shaft of the hour-wheel in order that the oscillating stamp-carrying frame will be operated at the end of each revolution of the hour-wheel, or once in every twelve hours.

When the lever 56 swings downward, the pivoted finger 55 engages one of the shoulders of the shifting device 53, swinging the latter downward and tilting its apex to one side of the vertical plane of the shaft 52, and as the finger is pivoted directly above the vertical shaft and as it assumes a perpendicular position when the lever 56 is swung upward it will engage the opposite side of the shifting device the next time it is carried downward by the lever 56. The finger is lifted clear of the shifting device and is perfectly free to assume a vertical position, and in moving downward it engages the shifting device below the apex and slides down the inclined edge until it engages the adjacent shoulder. By this construction the oscillating stamp-carrying frame is shifted once every twelve hours to change the time of "A. M." to "P. M." The lever 56 is arranged in a vertical guide 58 of the supporting-frame. The ribbon, which is inked similar to a type-writer ribbon, is arranged on vertically-disposed spools 59, journaled in suitable bearings at

opposite sides of the casing, and the ribbon extends rearward at opposite sides of the casing, passing around guides 60 and extending across the casing from one side of the same to the other at a point directly in rear of the stamps. A record-sheet 61, of paper or other suitable material, extends upward from the bottom of the top of the supporting-frame and is arranged back of the ribbon, being interposed between the same and a bar 62, which forms a backing for the sheet.

The spools which carry the ribbon are provided at their bottoms with ratchet-wheels 63, which are engaged by actuating devices 64, located at opposite sides of the supporting-frame and adapted to be alternately used, so that the ribbon can be reversed after it has been unwound from one spool. Each actuating device consists of a wedge-shaped tooth operating between the teeth of the ratchet-wheel of the adjacent spool and connected by a rod 65 with the bar 15, and when the latter is drawn downward the wedge-shaped tooth of the ribbon-actuating device is carried beneath the ratchet or gear wheel 63 in position for its inclined edge to engage a tooth of the wheel 63, when the bar 15 moves upward, whereby the spool will be partially rotated. The lower end of each rod 65 is swiveled to the bar 15 by means of a plate 15^a, which is provided with a perforation for the reception of the rod, and the latter is provided with a stop to prevent it from being withdrawn from the perforation. By swiveling the rod 65 to the bar 15 it is adapted to be partially rotated to turn the wedge-shaped tooth out of engagement with the adjacent ratchet or gear wheel 63, so that one actuating device may be thrown out of operation while the other is being used. The rod 65 is provided at a point intermediate of its ends with a flange 64^a, arranged to reciprocate in a guide 64^b, mounted on the adjacent portion of the casing and provided with openings arranged at right angles to each other. One of the openings of the guide 64^b is disposed longitudinally of the casing, and the other is arranged transversely of the casing. One receives the flange when the tooth is in position for engaging the wheel of the ribbon-spool, and the flange is arranged in the upper opening or way of the guide by forcing it downward into the same and rotating the tooth 64.

The record-sheet 61 is unreeled from a lower roll 66 and is wound around an upper shaft or roll 67, which is connected with and actuated by the bar 15. The upper roll 67 carries a ratchet-wheel 68, located at one side of the supporting-frame and engaged by an actuating-pawl 69, which is carried by an oscillating lever 70. The oscillating lever 70 is fulcrumed at its rear end on the supporting-frame, and its front end is connected by a rod 71 with the horizontal bar 15, and when the latter moves upward the pawl 69 engages the

ratchet-wheel 68 and actuates the roll 67 to advance the record-sheet and carry a fresh portion thereof opposite the stamps. The ratchet-wheel 68 is engaged by a check-pawl 68^a to prevent it from being rotated backward by the downward movement of the lever 70.

The lower roll 66 is engaged by a spring 73, which operates as a brake, and which prevents the record-sheet from being unreeled too rapidly.

In order to assist the upward movement of the bar 15, a curved spring 72 is employed. The spring is centrally secured to the supporting-frame at the bottom thereof, and its ends are curved upward and engage the ends of the bar 15, and the weight of the sliding cover and the outer portion of the operating-lever also assists the upward movement of the bar 15. The door 13 of the letter box or compartment is connected with a vertically-movable rod 74, which is drawn downward when the door is opened and moved upward when the door is closed. The upper portion of the rod 74 is inclined in the direction of the adjacent side of the supporting-frame and is guided in a way 76, and the inclined portion of the rod 74 passes through a perforation of a reciprocating indicator 77, slidingly mounted on the bar 22 and arranged in suitable guides. The upper end of the rod 74 is provided with a cross-head which operates in suitable grooves of the way 76 to prevent the upper end of the rod from becoming disengaged therefrom.

The reciprocating indicator, which carries a pencil 78, has an angularly-bent portion 79, arranged between guides 80, whereby, when the reciprocating indicator is drawn outward by the opening of the door 13, the pencil will be carried rearward into engagement with the record-sheet and will be drawn across the same a short distance beneath the record of the last operation of the sliding cover of the letter box or receptacle, thereby indicating, approximately, the time of the collection. When the door is closed, the reciprocating indicator is moved backward, and the pencil is carried out of engagement with the record-sheet.

The upper portion of the casing is detachably secured to the lower portion by means of any suitable fastening device, and it is provided at its front with an upper transparent portion to enable the record-sheet to be readily examined, and a suitable opening is provided opposite the clock mechanism to permit the introduction of a key for winding the same.

It will be seen that the mechanism for recording the time the letters are deposited in the box or receptacle is positive and reliable in operation, that each time the operating-lever is raised to open the sliding cover the time of such operation will be accurately printed on the record-sheet, and that each time a collection is made the pencil or other marking device employed will draw a line

under the time-record of the letter last deposited, thereby approximately indicating the time of the collection.

It will also be apparent that if a box be neglected by a letter-carrier the length of time letters are allowed to remain in the box will be accurately indicated and can be readily ascertained at a glance, as the oscillating stamp carrier or frame will be operated every twelve hours to bring the parts in position to shift the stamps.

Changes in the form, proportion, and minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

What I claim is—

1. In a device of the class described, the combination of a casing provided with a letter-box and having an entrance-opening, a movable cover arranged at the entrance-opening, a permanent record-sheet, movable stamps arranged to engage the record-sheet mechanism for actuating the stamps, and connections between the stamps and the movable cover and the latter and the record-sheet, whereby the stamps will be operated and the record-sheet advanced to bring a fresh portion opposite the stamps, when the cover is opened, substantially as and for the purpose described.

2. In a device of the class described, the combination of a casing provided with a letter-box and having an entrance-opening, a movable cover arranged at the entrance-opening, a record-sheet, movable stamps arranged to engage the record-sheet, mechanism for actuating the stamps, connections between the stamps and the movable cover, whereby the former will be operated when the latter is opened, a door for the letter-box, and an indicating device connected with the door, operated by the same and provided with a marking device arranged to engage the record-sheet when the door is opened, substantially as and for the purpose described.

3. In a device of the class described, the combination of a casing having a letter-box provided with an opening, ways arranged at the opening, a sliding cover mounted in the ways, an operating-lever fulcrumed on the casing at one end of the cover, a connecting-rod extending from the lever to the cover, a guide or keeper receiving the connecting-rod, and recording mechanism connected with the lever, whereby the latter will be operated when the cover is opened, substantially as and for the purpose described.

4. In a device of the class described, the combination of a casing having a letter-box and provided with a door, a reciprocating indicator provided with a marking device, and a rod capable of upward and downward movement connected with the door and having an inclined portion slidingly connected with the indicator, whereby the latter will be reciprocated when the rod is moved upward and downward, substantially as described.

5. In a device of the class described, the combination of a casing, a horizontally-disposed reciprocating indicator provided with an angularly-disposed portion arranged in suitable guides and adapted to shift the indicator laterally when the same is moved longitudinally, a marking device carried by the reciprocating indicator, and a rod capable of upward and downward movement and provided with an inclined portion slidingly connected with the reciprocating indicator, substantially as and for the purpose described.

6. In a device of the class described, the combination of a casing provided with a letter-box having an entrance-opening, a movable cover arranged over the opening, a reciprocating stamping-frame, movable stamps located adjacent to the stamping-frame, clock mechanism connected with and operating the stamps, and connections between the movable cover and the stamping-frame, whereby the latter is reciprocated, substantially as described.

7. In a device of the class described, the combination of a casing having a letter-box, a movable cover, an operating-lever connected with and adapted to open the cover, a horizontally-disposed reciprocating stamping-frame, movable stamps, clock mechanism for actuating the stamps, and a vertically-movable wedge connected with the operating-lever and arranged to engage and actuate the stamping-frame, substantially as and for the purpose described.

8. In a device of the class described, the combination of a casing having a letter-box and provided with a movable cover, an operating-lever connected with and adapted to open the movable cover, a reciprocating stamping-frame, movable stamps arranged to be engaged by the stamping-frame, a wedge connected with the operating-lever and arranged to engage the stamping-frame, and springs for returning the stamping-frame to its initial position, substantially as described.

9. In a device of the class described, the combination of minute and hour wheels capable of rotation and provided with a series of stamps, a record-sheet arranged to be engaged by the stamps, a stamping-frame arranged to engage a stamp of each wheel and carry the same against the record-sheet, clock mechanism connected with and adapted to actuate the said wheels, and operating mechanism connected with and actuating the stamping-frame, substantially as described.

10. In a device of the class described, the combination of a supporting-frame, hour and minute wheels having their faces arranged in the same plane and provided with spokes, stamps mounted on the spokes and arranged on the faces of the wheels, a record-sheet arranged adjacent to the faces of the wheels in

position to be engaged by the stamps, an ink-carrying ribbon interposed between the record-sheet and the stamps, and a movable stamping-frame arranged to engage a stamp of each of the wheels to cause the same to engage the ribbon and the record-sheet, substantially as described.

11. In a device of the class described, the combination of a supporting-frame, hour and minute wheels carrying stamps and provided with ratchet-wheels, oscillating levers, actuating-pawls connected with the levers and engaging the ratchet-wheels, a horizontal rod pivotally connected with one of the oscillating levers, passing through a perforation of the other lever and provided with a head, an actuating-wheel having a series of spokes arranged to engage the lever adjacent to the head of the rod, one of the spokes being offset from the plane of the other spokes and being arranged to engage the head of the rod, whereby both levers will be operated, substantially as described.

12. In a device of the class described, the combination of vertically-disposed hour and minute wheels carrying stamps, the substantially vertically-disposed oscillating levers 37 and 38 connected with and adapted to actuate the said wheels, a connecting-rod pivoted at one end to the lever 38 and passing through a perforation of the lever 37, an actuating-wheel having a series of arms or spokes arranged to engage the lever 37, one of the spokes being bent out of the plane of the other spokes and arranged to engage the adjacent end of the connecting-bar, whereby both levers will be oscillated, substantially as described.

13. In a device of the class described, the combination of a supporting-frame, the vertically-disposed hour and minute wheels provided with stamps, clock mechanism for operating the wheels, an ink-carrying ribbon arranged adjacent to the wheels and mounted on spools, a horizontally-disposed stamping-frame arranged to engage a stamp of each of the wheels, a vertically-movable horizontal bar, a vertically-movable wedge connected with the horizontal bar and arranged to engage the stamping-frame and adapted to actuate the same when the horizontal bar is drawn downward, and an actuating device connected with the horizontal bar, operated by the same and adapted to rotate the spools, substantially as described.

14. In a device of the class described, the combination of a vertically-disposed spool provided with a toothed wheel, and a vertically-movable wedge-shaped tooth arranged to engage the teeth of the wheel, whereby the spool is rotated, substantially as described.

15. In a device of the class described, the combination of a supporting-frame, vertically-disposed spools located at opposite sides thereof and provided with toothed wheels, an ink-carrying ribbon extending across the frame and having its ends arranged on the spools, a horizontal bar extending across the

frame and capable of upward and downward movement, rods extending upward from the ends of the bar, and wedge-shaped teeth carried by the rods and arranged to engage the teeth of the spools, said wedged-shaped teeth being swiveled to the rods and adapted to be turned out of engagement with the toothed wheels to permit the ribbon to be reversed, substantially as and for the purpose described.

16. In a device of the class described, the combination of a letter-box having an opening, a permanent record-sheet mounted within the letter-box, time-controlled stamps, a movable cover arranged over the letter-box and opening and connected with and adapted to operate the stamps, whereby the time of deposit of a letter will be recorded, and connections between the record-sheet and the movable cover, adapted to advance the said sheet to bring fresh portions of the same opposite the stamps, substantially as described.

17. In a device of the class described, the combination of a casing having a letter-box and provided with a movable cover, a horizontal bar capable of vertical movement, an operating-lever connected with the cover and with the horizontal bar, stamp-carrying wheels, clock mechanism for operating the wheels, vertically-disposed spools provided with toothed wheels, a ribbon arranged on the spools and extending across the casing in position to be engaged by the stamps, a stamping-frame adapted to engage a stamp of each of the wheels, a wedge engaging the stamping-frame and connected with the horizontal bar, vertically-movable rods provided with actuating devices engaging the toothed wheels of the spools, a substantially vertically-disposed record-sheet, upper and lower rolls carrying the record-sheet, and an actuating device for rotating the upper roll, and a rod connecting such actuating device with the horizontal bar, substantially as described.

18. In a device of the class described, the combination of an oscillating stamp-carrier having a pair of arms, a substantially triangular shifting device connected with the oscillating stamp-carrier and provided at opposite sides with shoulders, a lever located above the shifting device, a pivoted finger depending from the lever and arranged to engage the shifting device, and means for operating the lever, substantially as described.

19. In a device of the class described, the combination of an hour-wheel provided with stamps, a cam-shaped arm connected with the hour-wheel, an oscillating stamp-carrier provided with a pair of arms, a triangular shifting device provided at opposite sides with shoulders a lever fulcrumed at one end and having its other end arranged to be engaged by the cam-shaped arm, and a pivoted finger depending from the lever and arranged to engage the shifting device, substantially as described.

20. In a device of the class described, the

combination of a minute-wheel provided on its face with stamps, an hour-wheel carrying similarly-arranged stamps, operating mechanism for actuating the wheels and for rotating the hour-wheel one point at each complete revolution of the minute-wheel, an oscillating stamp-carrier provided with a pair of arms arranged to swing back and forth and carrying two stamps, and connections between the oscillating stamp-carrier and the hour-wheel, whereby the former will be shifted at the end of each complete revolution of the latter, substantially as described.

21. In a device of the class described, the combination of a supporting-frame, vertically-disposed spools located at opposite sides thereof and provided with toothed wheels, an

ink-carrying ribbon arranged on the spool, guides mounted on the supporting-frame at opposite sides thereof and provided with openings or ways disposed longitudinally and transversely of the frame, wedge-shaped teeth, and swiveled rods carrying the teeth and provided with vertical flanges arranged in said ways and adapted to reciprocate in either of the openings thereof, substantially as and for the purpose described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

HARVEY BENHAM.

Witnesses:

ALLEN WILLIAMS,
HARVEY L. DONEY.