J. W. CUTLER.

MAIL CHUTE.

APPLICATION FILED SEPT. 24, 1906.

899,157.

Patented Sept. 22, 1908.

3 SHEETS—SHEET 1.

Fig. 1.

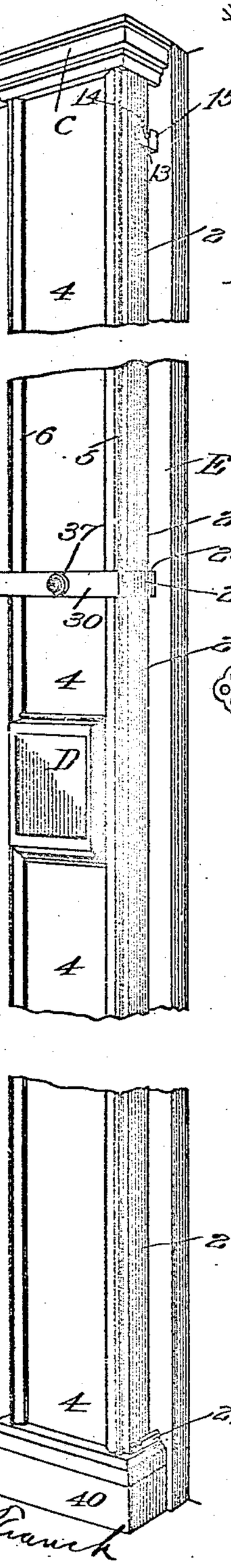

Fig. 2.

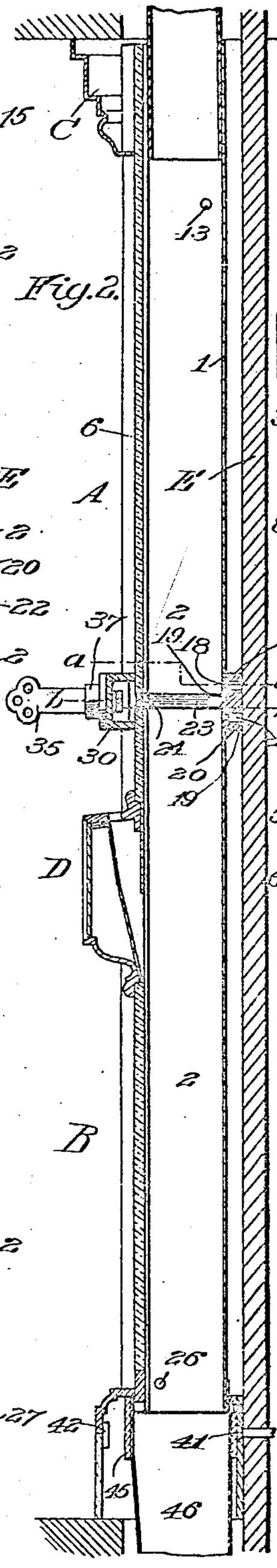

Fig. 3.

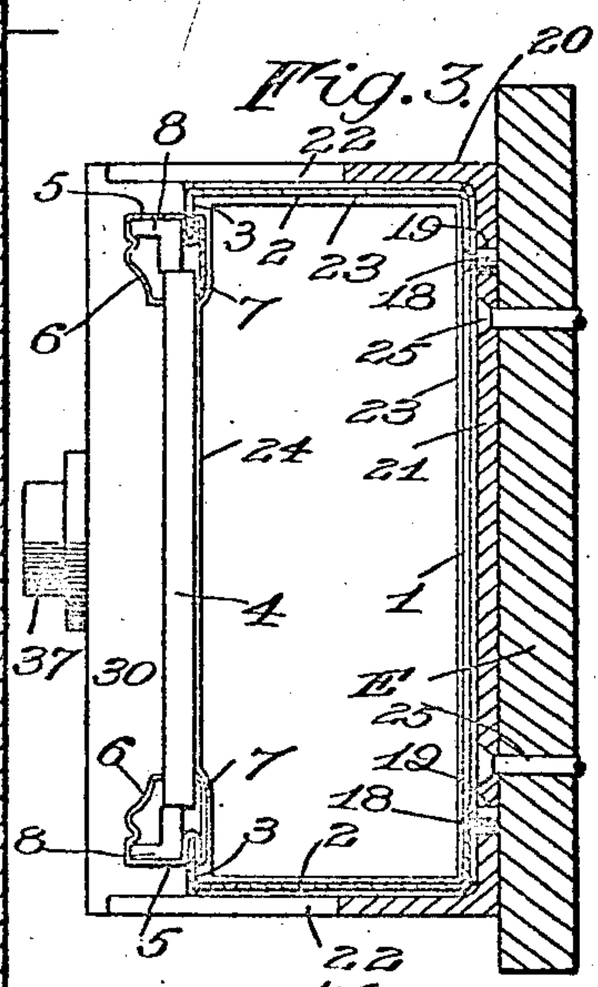

Fig. 5.

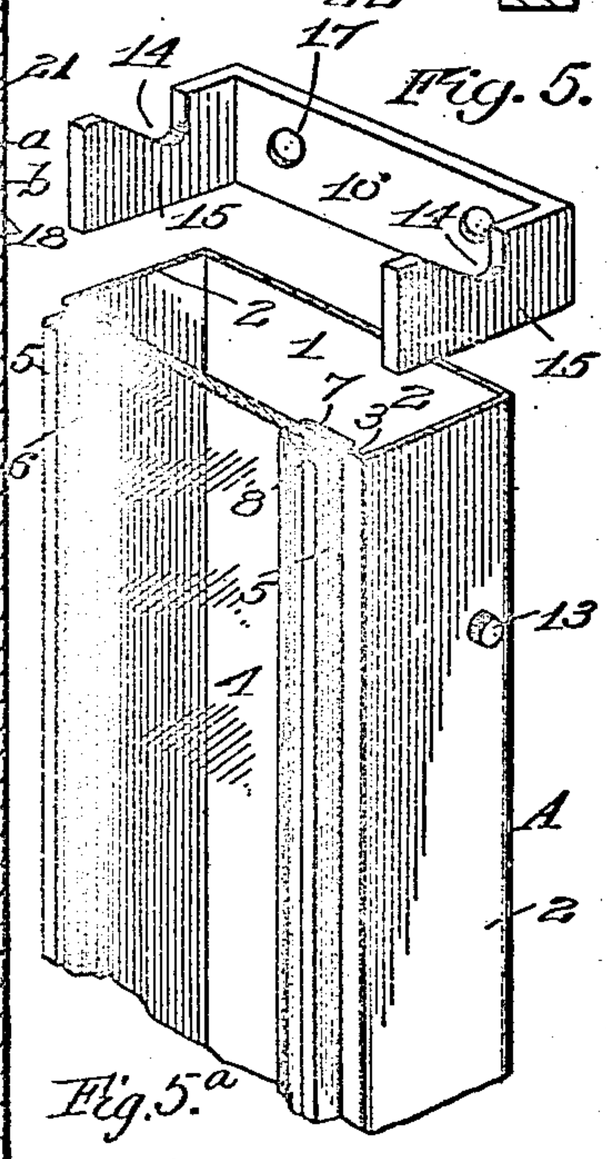

Fig. 5.a

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3 SHEETS—SHEET 2.

Fig. 6

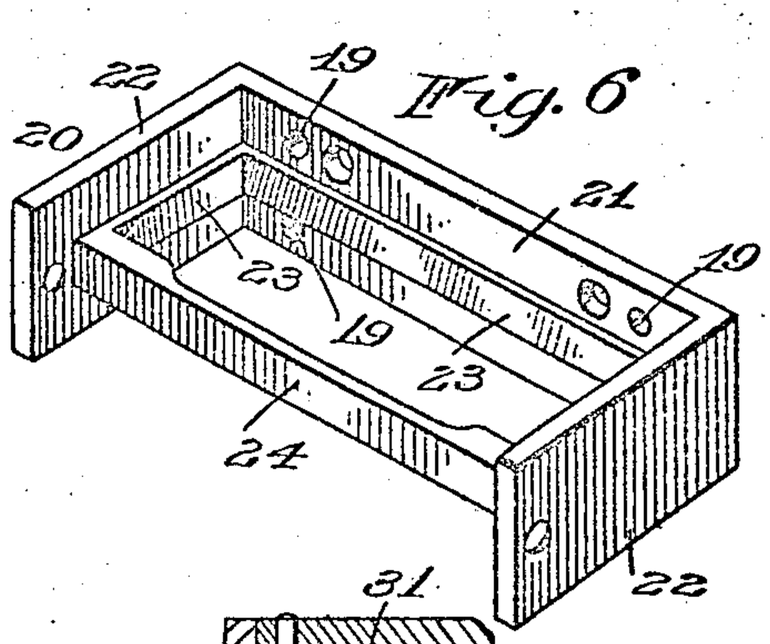


Fig. 4.

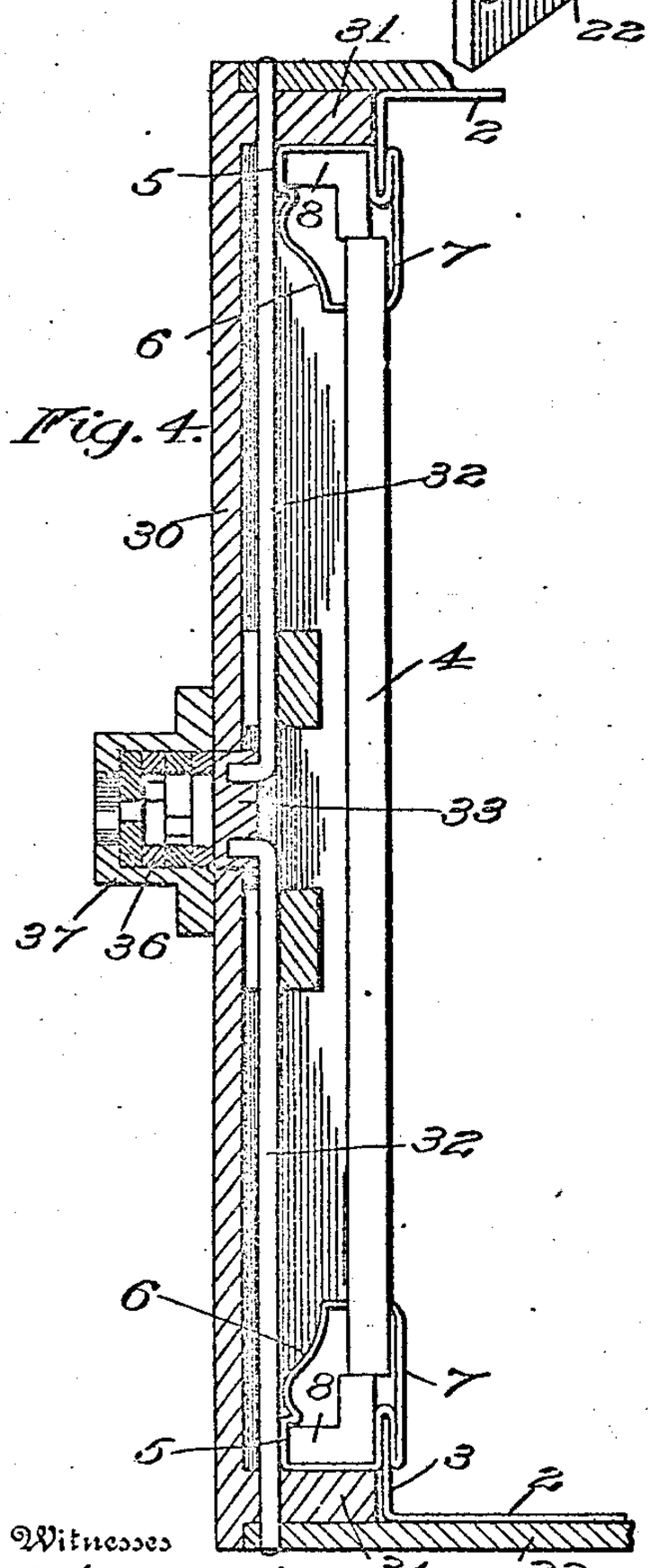
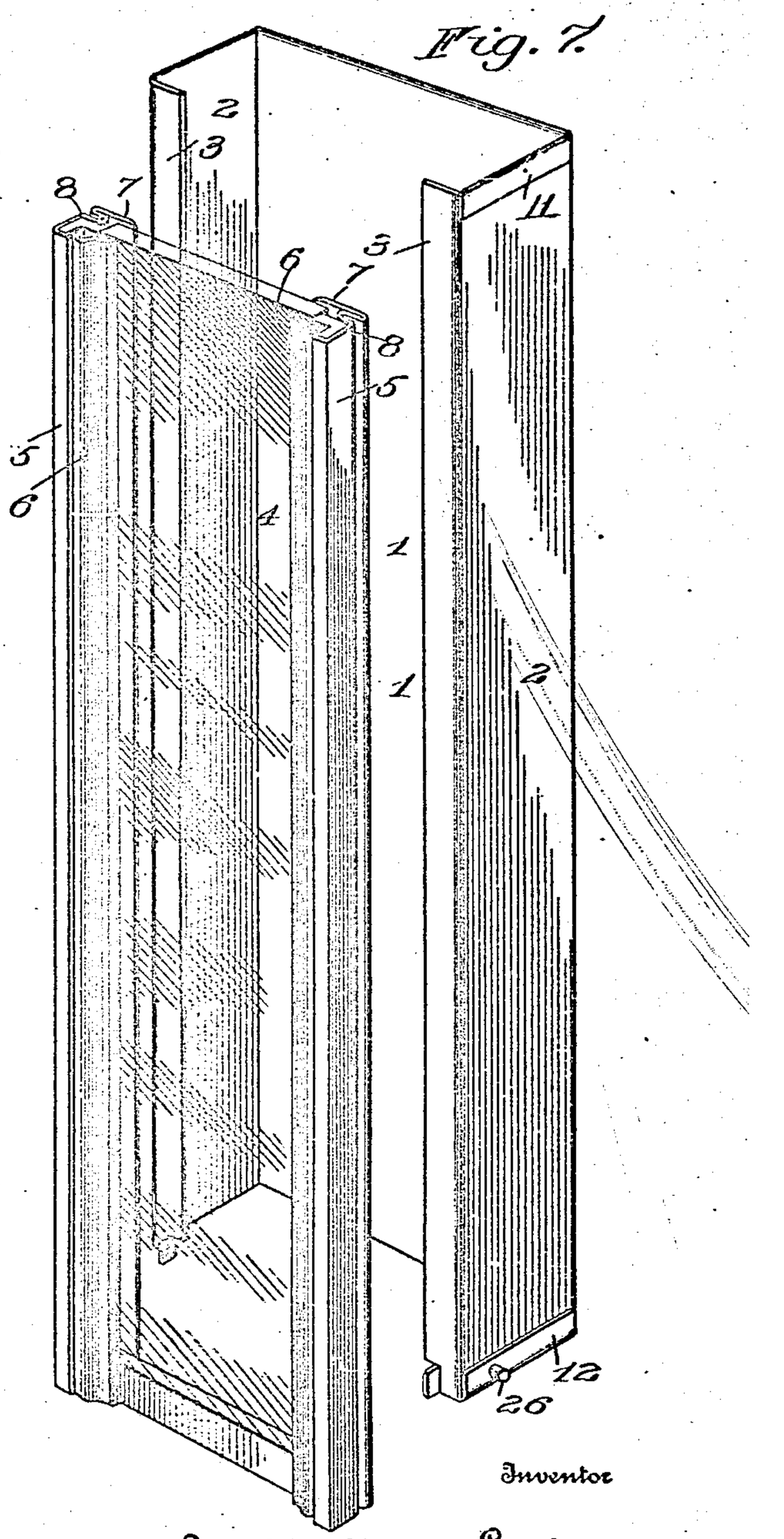


Fig. 7.



Witnesses

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3 SHEETS—SHEET 3.

Fig. 8.

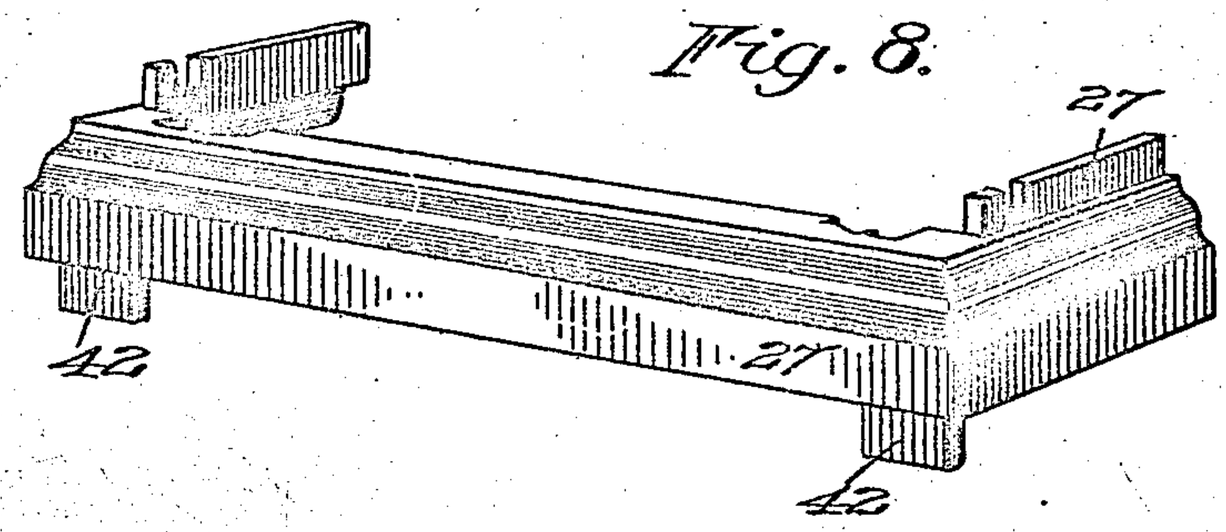


Fig. 9.

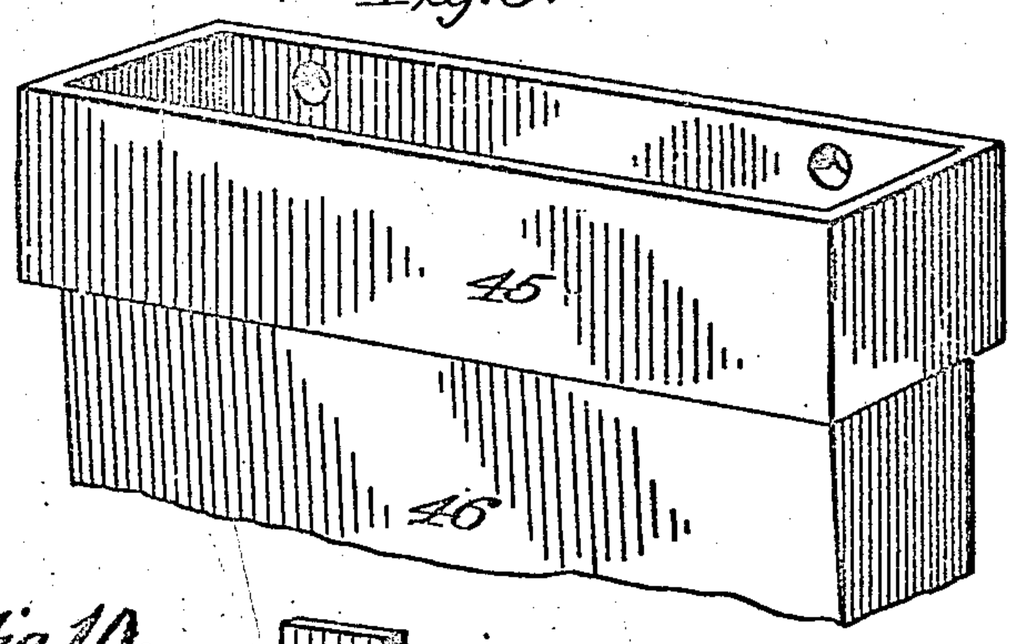
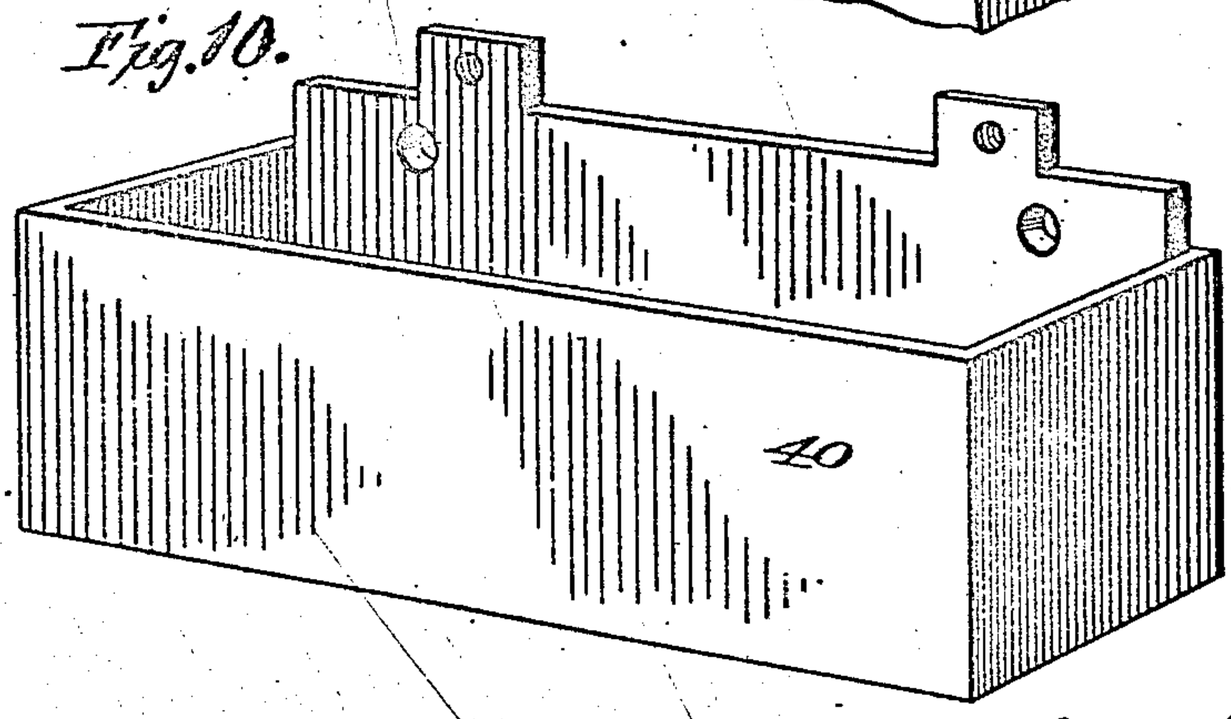


Fig. 10.



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UNITED STATES PATENT OFFICE.

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MAIL-CHUTE.

No. 899,157. Specification of Letters Patent. Patented Sept. 22, 1908.

Application filed September 24, 1906. Serial No. 336,069.

To all whom it may concern:

Be it known that I, JOSEPH WARREN CUTLER, of Rochester, in the county of Monroe and State of New York, have invented certain new and useful Improvements in Mail-Chutes; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, and to the reference-numerals marked thereon.

My present invention relates to chutes or conduits for mail matter and has for its object to provide an improved chute in which the mail-conducting sections, or tubes proper, are formed of parts readily made and assembled, without the employment of securing rivets or screws projecting through the sides so that the interior of those sections are smooth and are also free from angles or joints in which descending mail matter might catch.

The invention further consists in so constructing and arranging the sections and parts and the support or supports that not only may the parts be readily assembled and secured in position in erecting the chute, but the parts of the chute, or such of them as may be necessary, can be removed for the purposes of cleansing, clearing stoppages or otherwise by authorized persons only, the removal of such parts and of the chute from its ultimate support being controlled by a lock operable only by keys in the hands of authorized persons.

To these and other ends the invention consists in certain features and improvements hereinafter described, the novel features being pointed out in the claims at the end of the specification.

In the accompanying drawings: Figure 1 is a perspective view of a chute embodying my improvements, the extremities of two sections and their coöperating parts adapted for a single floor of a building being shown, the intermediate portions representing indefinite length being broken away. Fig. 2 is a vertical sectional view of the same taken at one side of the center. Fig. 3 is a horizontal sectional view on the line *a*—*a* of Fig. 2. Fig. 4 is a similar view taken on the line *b*—*b* of Fig. 2. Fig. 5 is a perspective view of the bracket for the upper end of the upper section. Fig. 5ª is a perspective view of the upper end of the upper chute section. Fig. 6 is a perspective view of the intermediate securing bracket. Fig. 7 is a perspective view of the body or channel and the front panel separated. Fig. 8 is a perspective view of the base plate with portions broken away. Fig. 9 is a perspective view of the floor tube. Fig. 10 a similar view of the sub-base.

These mail chutes or conduits extending through the various floors of buildings and provided at each floor with a mail-receiving aperture are deemed a part of the mail box or receptacle and being under the supervision of the department, should be of such nature that they may be secured from being opened or removed, excepting by authorized persons, and their construction should be such that when necessary to have access to the interior it may be readily accomplished by unskilled persons. From the manufacturers' and purchasers' standpoints it is desirable that the parts of the chute be simple, relatively inexpensive in construction and arranged and adapted to each other to facilitate their manufacture and ready erection in the building. All of these desirable features are provided for and attained in a high degree in the present structure.

I have shown in the drawings the parts adapted to extend between the floor and ceiling of a single story of a building and to contain a suitable mail-receiving aperture, such for instance as shown in one of my prior patents, it being understood that the portions on other floors are the same and that the mail box or receptacle located at the lower floor may be of the usual or any desired construction.

In the present embodiment there are but two removable chute sections A and B to a floor, the upper end of section A coöperating with the floor section of the portion of the chute above and having a finishing molding C thereon, with the lower end of the section B, which latter contains the mailing aperture, coöperating with the base inside of which latter a coupling or floor section extends through the floor into the upper end of the portion of the chute on the next lower floor.

The chute as a whole is attached to a suitable support or upright E which may be a separate structure extending from top to bottom of the building or form a part

of the wall thereof, but is the part to which the brackets or parts holding the chute are fastened by whatever name it may be called. The sections or parts of the chute or conduit proper are each composed of a channel preferably made of a single piece of sheet metal bent up to form the back 1 and the sides 2 having at their forward edges the narrow inwardly-extending flanges 3. The ends of the channel are also reinforced and thickened for securing pins and rivets hereafter described by turning back the flanges 11 and 12 as shown in Fig. 7. The front of the sections consists of a narrow panel preferably composed in whole or in part, of a plate of glass indicated by 4, to the sides of which are secured moldings 5 coöperating with the glass and with the flanges 3 on the channel. These moldings are each formed of a single piece of sheet metal having the front flange 6 engaging the outer surface of the glass and the rear flange 7 engaging the rear surface thereof, this flange being brought down to a sharp edge forming a tight joint not only securing the glass firmly but preventing the formation of cracks or crevices in which the descending mail matter might catch. The sheet metal of which the moldings are formed is doubled as shown, to form the narrow recess or slot for the reception of the flanges 3 of the channel which extend into them from the outer sides and the inner portion or wall of this slot is formed by the two thicknesses of metal rendering it rigid and insuring a uniform way or recess for the said flanges. The portion of the molding which extends within the chute is relatively thin and the joint between the flanges 3 and the molding is protected by the doubled portion which forms an abutment preventing thin pieces of mail matter such as postal cards descending the chute from reaching the abutting edges. In order to properly position the glass and to strengthen and reinforce the moldings and prevent the corners being dented or crushed, I prefer to reinforce them with the strips 8 of angle irons, one of the flanges thereof abutting the glass, and the other filling out the outer corner. In assembling these parts the moldings containing the reinforce or filling are slid lengthwise on the edges of the glass, the spring of the flanges making tight joints, and the glass and moldings are then slid lengthwise on the flanges 3 of the channels, the thickness and rigidity of the material of the sides 2 of the channel being sufficient to hold the parts firmly together, though in the present arrangement these sides are braced and held by the supporting and locking brackets on the support. This construction of chute sections in which the longitudinal grooves in the panel moldings are made smooth and true also enables the panel to be removed to permit access to the interior of the chute, if this should be desired, by sliding the panel longitudinally on the flanges 3 when the section is freed from the parts above or below it, and whether or not the channel is bodily removable from its support or only movable far enough to free one end of the panel and permit the free movement of the glass.

The two chute sections shown are, in the present embodiment, attached to the backing or support E through the medium of brackets, with which the outer ends are detachably engaged, and their proximate ends are locked together and to the support E, or a part attached thereto by a key-controlled locking device in the manner to be described.

The upper end of the channel forming the upper chute section A is provided with laterally-extending pins or studs 13 adapted to rest in notches 14 in the forwardly-projecting arms 15, of a bracket 16, secured by screws 17 to the support E, said securing screws being covered by the chute section when in position, to prevent their removal. The forward sides of the notches 14 in the bracket arms are inclined as shown to permit the upper end of the section to be tilted forwardly as will be explained. The chute section A is provided at the rear side of its lower end with two studs or dowels 18 adapted to extend into corresponding recesses or sockets 19 in a bracket 20 fastened to the support E.

The bracket or frame 20 embodies a rear bar or plate 21, and the forwardly-extending arms 22, and is provided on both these parts with the inwardly-extending flange or web 23 which is continued across between the arms at the front in the form of a narrow bar 24, this flange and web being slightly beveled and thicker at its lower side than the doubled thickness of the material of the lower chute section so that it will overlap the lower channel and the bar 24 will extend inwardly beyond the glass of the lower section preventing the lodgment of mail matter thereon when the sections are assembled. The flanges 23 on the inner sides of the arms 22 are inclined slightly downwards toward the rear as the lower end of the upper section and the upper end of the lower section are adapted to swing forward and the web fills the space between their adjacent ends. This bracket 20 is secured to the support E by screws 25 which are covered by the chute sections when in position.

The upper end of the lower section B is provided with the flanges and the dowel pins 18 at the rear similar to those at the lower end of section A, adapted to fit corresponding sockets 19 below the flange 23 and at its lower end it is provided near the forward edges with the side studs or pins 26, fitting in open sockets or notches in the upper flanges of a base plate 27, the construction being such that when the section is in position its upper end is beneath the flange and web on the

bracket 20 and the pins 18 are in their sockets preventing the upward movement and the disengagement of the pins 26 from the base. This section B contains the casing D in which the mailing aperture is arranged, this casing being constructed as shown in several of my prior patents, the casing being held by the moldings at the edge in the same manner as the glass panel, for a portion of which it is substituted.

The ends of the arms 22 of the bracket or frame 20 extend forwardly of the web or cross bar 24, and are adapted to receive and hold a bar 30 secured in position by a key lock, and in the present arrangement this bar has arms 31 fitting between the arms of the bracket and its inner surface fits over and against the moldings on both the upper and lower chute sections preventing the forward movement of their proximate ends and consequently their disengagement from the support. In the present embodiment the bar is locked to the bracket by the bolts 32 adapted to be projected from its ends and entering corresponding apertures in the arms 22, the operating means consisting of a rotary disk 33 pivoted centrally of the bar having recesses for receiving the lugs on the end of a removable key 35. The preferred means for preventing the operation of the disk otherwise than by the appropriate key carried by an authorized person, is the slotted ward plates 36 arranged in the casing 37, the key having notches therein for fitting said wards, all as shown in my Patent No. 758,128. The support for the lower end of the lower chute section and the floor connection are shown particularly in 1, 2 and 8, the sub base or frame 40 being secured to the support E by screws 41 accessible only from the inside, and upon this sub-base rests the base 27 having lugs 42 extending down behind the front of the sub-base and preventing forward movement. From this it will be seen that as the base 27 covers the screws 41 and is held down in position by the chute section B which is in turn locked by the key lock. The connection between the lower end of the section B and the upper end of the section on the floor below, is formed by the usual collar 45 engaging the lower end of the former and having the tube 46 extending into the latter. The upper end of the chute at the ceiling is covered by a finishing molding 47 secured to the support or to the chute in any suitable manner.

From the above it will be seen that all parts of the chute are secured by a single key lock and that until this is unlocked, not only is access to the interior prevented, but none of the holding screws can be manipulated to remove any part of the chute from its support.

When it is desired to remove either chute section the lock is operated by the key and the bar 30 removed, then to take down the upper section A, its lower end is swung forward on the pins 13 at its upper end until the dowels 18 at the lower ends are disengaged, and then it is lifted to disengage the pins 13 from their notches. When the lower section B is to be removed, its upper end is tilted forward from beneath the bracket, and it is then lifted out as will be understood.

While the specific construction of the various parts described has been found in practice to be admirably adapted to the purpose, I do not desire to be confined to this as various modifications in construction will readily occur to those skilled in the art, without departing from the spirit of my invention.

The broad invention of pivoting the chute sections and the construction of the channel with flanges and of the panel with moldings of the construction are claimed in my application of even date Serial No. 336,070, and the bracket with the forwardly extending arms and removable cross bar, is claimed in my application Serial No. 347,397, filed Dec. 12, 1906.

I claim as my invention:

1. In a mail chute, the combination with a support, of two tubular sections pivotally supported at opposite ends and a locking means for securing the adjacent ends of said sections in alinement.

2. In a mail chute, the combination with a support, of two tubular chute sections pivoted at opposite ends in open bearings and means for securing the adjacent ends of said sections in alinement.

3. In a mail chute, the combination with a support, of a tubular chute section supported at its upper end in upwardly-opening bearings, stops for preventing the disengagement of the chute from its bearings when in vertical position, and locking means controlled by a key for securing the section in locked position.

4. In a mail chute, the combination with a support, of a tubular chute section supported at its upper end in upwardly-opening bearings and having locking studs at its lower end adapted to coöperate with corresponding recesses on a support when the section is in vertical position, and locking devices for securing the section with the studs engaged.

5. In a mail chute, the combination with a support, of a tubular chute section having the bearing studs at the sides of one end, and locking projections at the other, and bearings and recesses on the support with which said studs engage.

6. In a mail chute, the combination with a support, a bracket thereon having bearing notches in its upper side, and a second bracket having a recess therein, of a tubular chute section having bearing and locking studs at opposite ends for engaging said notches and recesses, and means for locking said section

in vertical position with the locking studs in engagement.

7. In a mail chute, the combination with a support, of the tubular chute section having sheet metal back and sides, and reinforced at the ends by doubling over the metal. studs or pins secured to said reinforced portions and a part mounted on the support having recesses with which said studs cooperate.

8. In a mail chute, the combination with a support and a bracket thereon having the forwardly - extending arms, of the tubular chute arranged between the bracket arms and an independently removable bar for confining the front of the chute having a portion located between and coöperating with said arms, a bolt carried by said bar engaging the arms and a removable key for actuating it.

9. In a mail chute, the combination with the support and a bracket thereon having the forwardly-extending arms, of the tubular chute arranged between the arms, the independently removable securing bar, the movable locking bolts thereon adapted to engage the arms of the bracket, the removable warded key for operating said bolts, the lock casing and the wards therein with which the key coöperates.

10. In a mail chute, the combination with the chute sections having the studs on their adjacent ends, of the bracket having recesses with which the studs coöperate to prevent longitudinal movement of the sections, the locking bar extending across the chute sections and a lock for said bar controlled by a removable key.

11. In a mail chute, the combination with the chute sections having the studs on their adjacent ends, of a support, a bracket secured thereto by fastenings accessible from the inner side thereof, and provided with the recesses and the forwardly-extending arms between which the chute sections extend, the bar coöperating with the bracket arms and a key lock for securing it in position.

12. In a mail chute, the combination with the support, a removable chute section, brackets on the support arranged at opposite ends of the section, one of said brackets being loosely mounted upon and held from vertical movement on the support by the section, and means for locking the opposite end of the section to the other bracket.

13. In a mail chute, the combination with the support, a sub-base frame and means for securing it to the support, a removable base frame secured to the sub-base by fastening devices engaged and disengaged by a vertical movement, of a movable chute section pivotally engaging the base and holding it when said section is in vertical position, and means for securing said section.

14. In a mail chute, the combination with two adjacent chute sections, supports therefor and vertically open connections between the sections and supports engaged and disengaged by tilting and longitudinal movement of the sections and a locking device between and engaging adjacent ends of the sections to prevent their disengagement.

15. In a mail chute, the combination with the support, a bracket secured thereto by fastening devices accessible from the inner side only and having the forwardly-projecting portions provided with upwardly-opening bearings, of a movable chute section covering the fastening devices and having studs arranged in said bearings, means for preventing upward movement of said chute section when in vertical position and key-controlled locking devices for preventing tilting of the section on its bearings.

16. In a mail chute, the combination with the support, the sub-base secured thereto by fastening devices accessible from the inner side only, the base frame having the projections engaging the sub-base for preventing forward movement thereon and having the open bearings in its upper portion, of the chute section having studs arranged in the bearings on the base and locking devices for preventing the tilting and vertical movements of the chute section.

17. In a mail chute, the combination with the support and the bracket thereon, of a chute section and coöperating portions between the section and bracket adapted and arranged to prevent the forward movement of one end and to be disengaged by a forward tilting of the opposite end and a longitudinal movement of the section.

18. In a mail chute, a movable section hinged at one end, and means for locking said section in position, substantially as described.

19. In a mail chute, a movable section hinged at its upper end, and means for locking said section in position; substantially as described.

20. In a mail chute, a vertically movable section hinged at one end, and means for locking said section in position; substantially as described.

21. In a mail chute, a section movable vertically and outwardly, said section being hinged at one end, and means for locking said section in position; substantially as described.

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