J. W. CUTLER.

MAIL CHUTE.

APPLICATION FILED SEPT. 24, 1906.

899,158.

Patented Sept. 22, 1908.

3 SHEETS—SHEET 1.

Fig. 1.

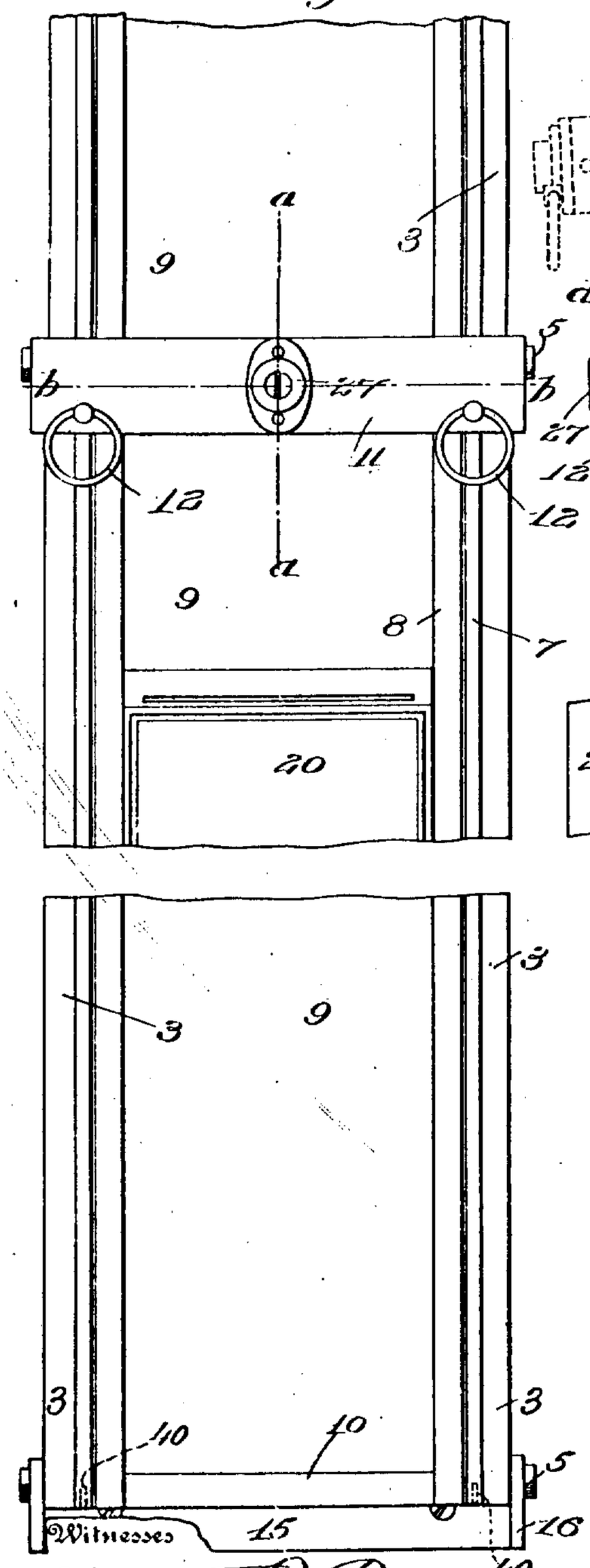

Fig. 2.

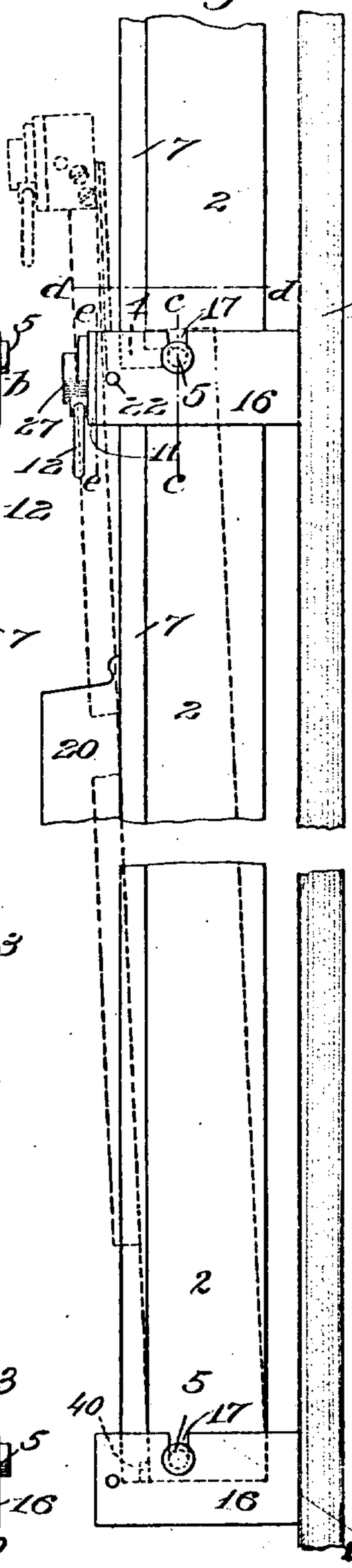

Fig. 9.

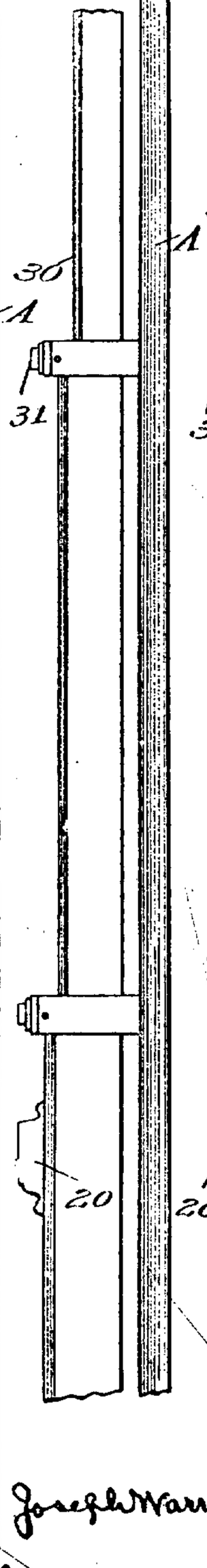

Fig. 10.

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3 SHEETS—SHEET 2.

Fig. 5.

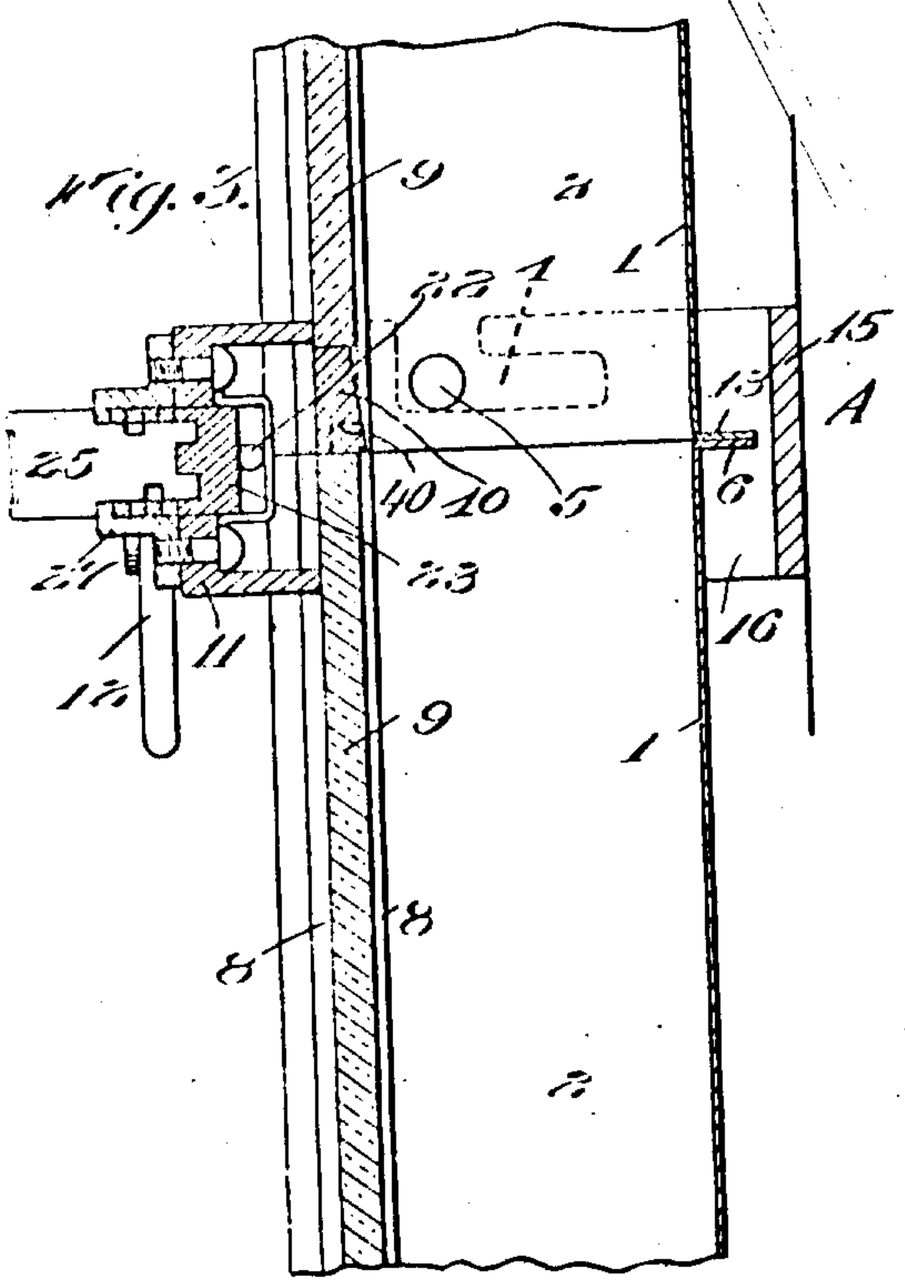
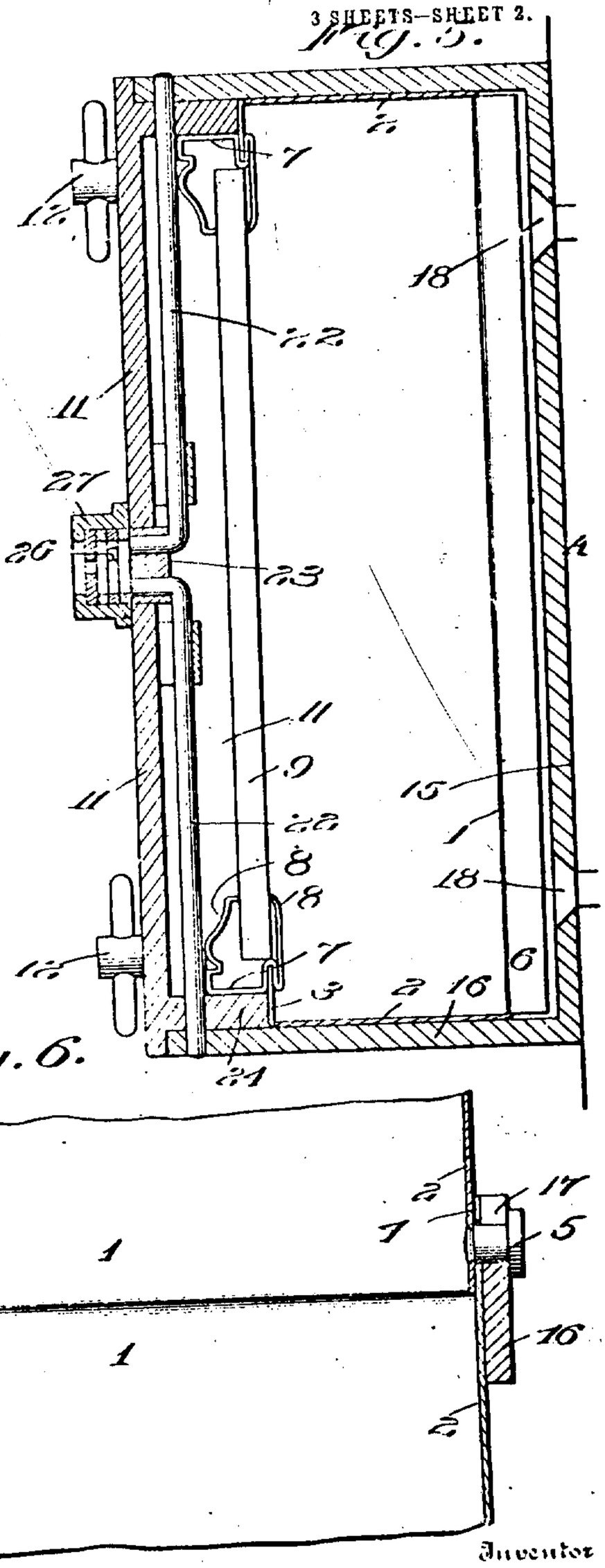


Fig. 6.



Witnesses

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3 SHEETS—SHEET 3.

Fig. 7.

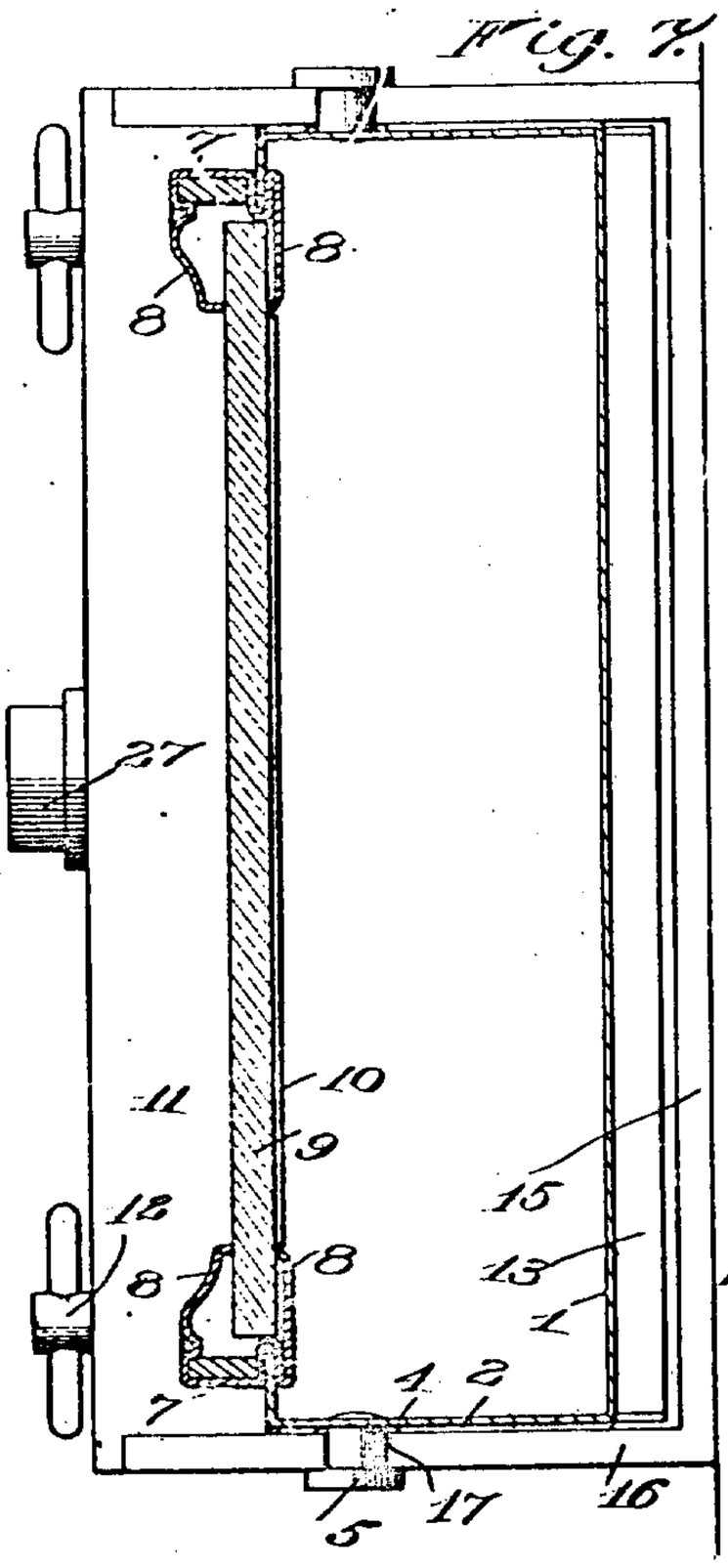


Fig. 4.

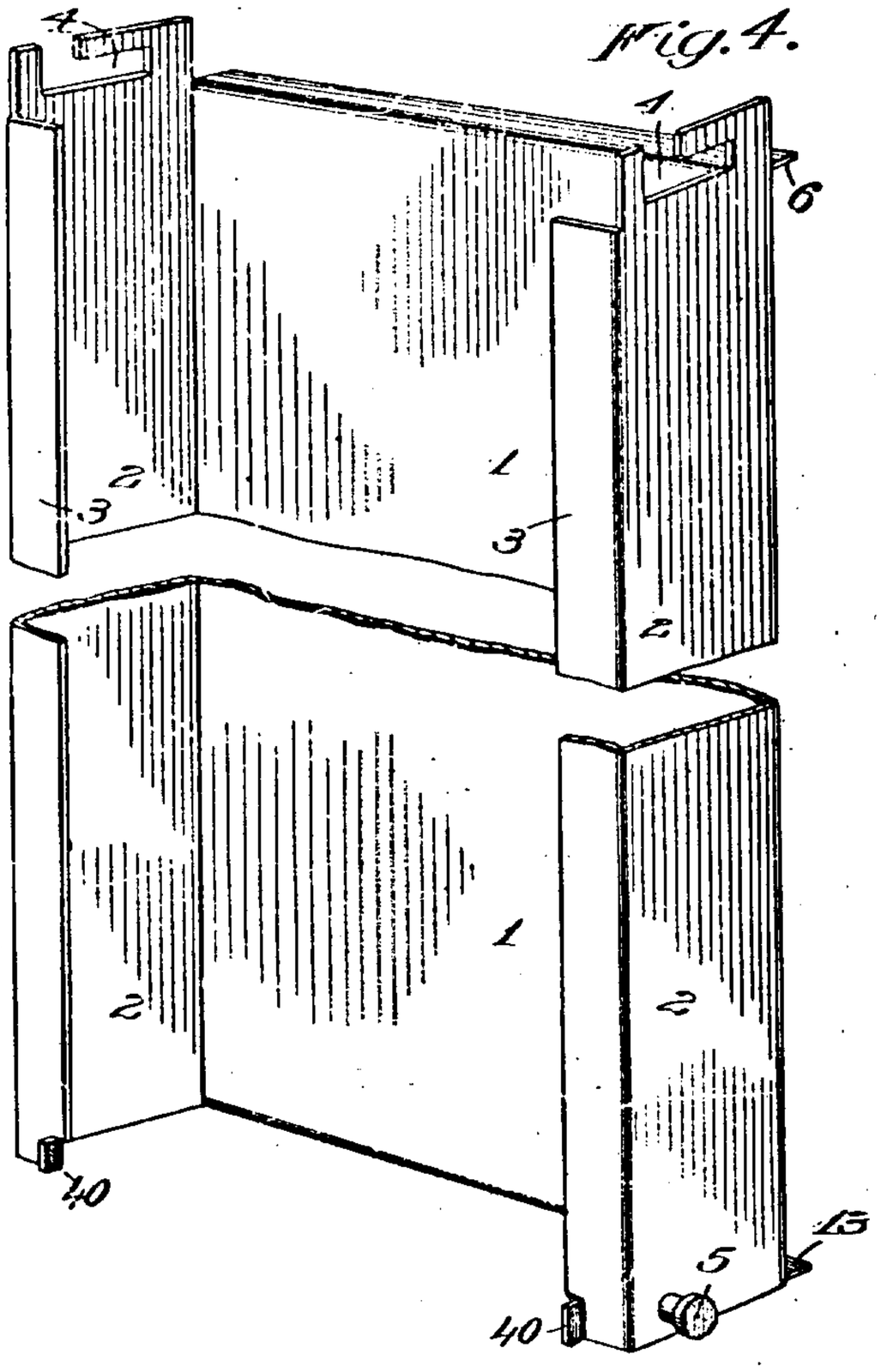
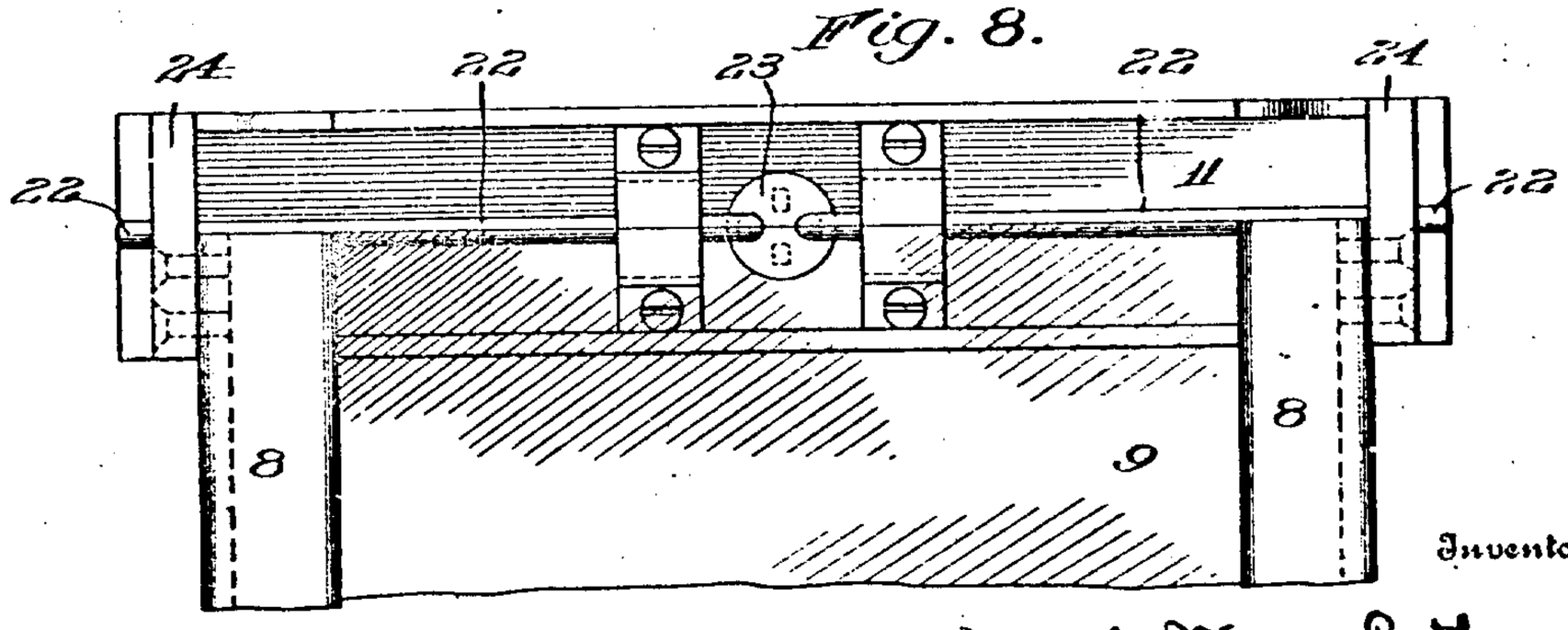


Fig. 8.



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UNITED STATES PATENT OFFICE.

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MAIL-CHUTE.

No. 899,158. Specification of Letters Patent. Patented Sept. 22, 1908.

Application filed September 24, 1906. Serial No. 336,070.

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 mail chutes and has for its object to provide an improved apparatus so constructed and arranged that access may readily be had to the interior thereof by authorized persons only, for the purpose of removing mail matter which may have become clogged therein, for cleansing the same or other purposes, and in which the parts or sections may be independently removed and replaced when desired in thus facilitating the erection and repairs if necessary.

To these and other ends the invention consists in certain improvements and combinations of parts, all as will be hereinafter more fully explained, the novel features being pointed out in the claims at the end of the specification.

In the drawings: Figure 1 is a front elevation of two sections of a chute embodying my improvements, portions being broken away to indicate sections of indefinite length. Fig. 2 is a side elevation of the same showing in dotted lines, one section tilted forward. Fig. 3 is a vertical sectional view taken on the line *a*—*a* of Fig. 1. Fig. 4 is a perspective view of the rear portion of a chute section. Fig. 5 is a sectional view taken on the line *b*—*b* of Fig. 1. Fig. 6 is a vertical sectional view taken on the line *c*—*c* of Fig. 2. Fig. 7 is a horizontal section on the line *d*—*d* of Fig. 2. Fig. 8 is a vertical sectional view taken on the line *e*—*e* of Fig. 2. Figs. 9 and 10 represent modified forms of chutes to which my invention is capable of application.

Similar reference numerals in the several figures indicate similar parts.

Although these chutes extend from the upper floor of a building to the box or receptacle at the lower floor and contain at intervals, mailing apertures, I have deemed it necessary to illustrate only two adjacent sections as these are typical of the others, and chutes may be made of any desired length by duplicating these parts, and the connections between the different floors may be of the usual or any preferred construction.

The support or backing A upon which the chute is mounted, may be a separate structure extending the full length of the chute, or be formed by one of the walls of the building if desired, and this support carries brackets or frames upon which the chute sections are directly mounted.

The sections from which the chute is built up, each embody a rear channel preferably of sheet metal, and a longitudinally movable sliding panel at the front which is preferably composed largely of glass and is adapted to be locked in position to prevent opening of the chute by unauthorized persons, and in chutes having a substantially uniform interior diameter it is desirable that the sections be capable of a slight tilting movement to cause the end of the sliding panel of one section to clear the adjacent section and permit its withdrawal. In order that these results may be accomplished and to facilitate the construction and assemblage of the parts, the rear channel or body of the section is preferably formed of a single piece of sheet metal of the form shown in Fig. 4, and embodying the back 1 and sides 2 having the inwardly-turned parallel flanges 3 between and upon which the front panel of the section slides. The sides 2 are provided at their upper ends with the elongated slots 4 opening upwardly at their forward portions and also with headed pins 5 at their lower ends, and the back is provided with rearwardly-extending flanges 6 and 13 at the upper and lower ends respectively, for coöperating with flanges on adjacent sections. The front panel of the sections embodies the two side moldings 7, 7 each formed of a single piece of sheet metal with the grooves in their outer sides to coöperate with and slide upon the flanges 3 of the channel and with the inwardly-extending flanges 8 firmly grasping the edges of the glass plate 9 which forms the front of the chute and permitting inspection of the interior thereof. The glass plate is prevented from downward movement relatively to the moldings by the cross piece 10 secured to the lower ends of the latter and to the upper end of the moldings is secured a cross bar or shell 11 having at the front, oper-

ating handles 12 and carrying a locking device adapted to coöperate with a suitable support or bracket.

The panel as a whole is supported when in its lowermost position by lugs or projections 40 struck out from the flanges 3 of the rear channel which enter small recesses formed in the lower cross bar 10 so that the latter may come in close proximity to the upper end of the panel beneath it as shown in Fig. 3. The flanges 3 of the rear channel extending into the grooves in the outer sides of the moldings not only form ways which guide and hold the panel but also the inner doubled flanges of the moldings constitute portions of the panel extending within the chute and in rear of the front edges, thus forming joints or connections which are not open toward or readily accessible from the center of the chute, so that there is no liability of the edges or corners of descending mail matter catching therein. The character of the joints between a movable or removable panel and the sides or coöperating parts of a mail chute is a matter of considerable moment and the provision of such joints, which permits the parts to be separated, is quite a different problem from making tight joints that are always preserved intact, as for instance, those between the inner sides of the glass and the flanges on the moldings.

15 indicates brackets mounted on the support A at intervals represented by the length of the sections, one being arranged at the coöperating ends of the sections and each embodying a back plate and forwardly-extending arms 16, having in their upper edges near the front recesses or bearings 17 adapted to receive the studs on the lower ends of the sections. The brackets are secured to the support by screws or headed fastenings 18 passed through them and into the support A from the inside so that when the chute is in position, it covers them and prevents their removal.

One of the chute sections is provided with a mail-receiving opening preferably in a mailing section 20 constructed as shown in several of my prior patents, and which is secured in the front panel in substantially the same way as the glass, that is by having flanges at the edges clamped between the flanges of the moldings.

The locking device at the top of the movable front panel may be of any desired construction, but I prefer to make it in the form shown, embodying the two outwardly-movable bolts 22, pivoted at their inner ends to a rotatable disk 23 and guided to move in flanges 24 of the plate 11 and when projected outwardly by the movement of the disk to enter corresponding apertures in the forward arms of the brackets. The disk is adapted to be actuated by a removable key 25 inserted from the front to engage the disk and operate it, the operation of the lock otherwise than by the appropriate key being prevented by the wards 26 in a casing 27 with which the appropriate slots in the edges of the key coöperate.

The specific construction of the lock and key is immaterial, though I prefer that form shown in my prior patent No. 758,128.

When the parts are in the position shown in full lines in Figs. 1 and 2, a continuous passage for mail matter is provided, the lower ends of the channels of the upper sections extending between the upper ends of the side flanges of the lower sections and the lower ends of the channel and the front panels extending slightly over the corresponding parts of the adjacent sections to prevent the formation of ledges or crevices liable to catch and detain falling mail matter. The sections are held firmly in the position shown by the locking device holding the upper ends of the panels rigid with the brackets.

When it is desired to obtain access to the interior of the chute, it is only necessary to insert the key in the lock, withdraw the bolts from engagement with the brackets and tilt the section forward pivoting upon the studs 5 at the lower ends, the horizontal slots at the upper ends, through which the pins of the next upper section pass, permitting this and also limiting the forward tilting movement of the section. When the section is tilted forward, and the upper end of the panel clears the upper section, said panel may be moved up on the flanges 3 as ways, and removed entirely if it is desired to clean the glass, or may be moved only part way if to remove an accumulation of mail matter. The section may be removed entirely if desired by lifting the upper section or sections, and the pins removed from the slots, and until sufficient room is provided to allow the lower section to be tilted out until its rear upper corner clears it. By reason of the interlocking connection between the sections and the brackets formed by the pivot studs and the slots, it is necessary in order to entirely remove a section, to lift those above it, but as there are usually only two or at most three sections between the floors of a building and more or less elastic or telescoping joints between the ceiling of one room and the floor of the next, this does not involve great labor, but by reason of the fact that the panels are removable, it is practically never necessary to bodily remove a section after the chute is installed. In case it is not desirable to tilt the chute section to remove the front panel, these sliding panels may be applied to chutes such as shown in Figs. 9 and 10 in which the ends of the panels are out of line with the next succeeding ones above them, the former gradually increasing in width from top to bottom, and the lower panels being offset bodily in vertical planes forwardly of

the one above, and the latter having the slightly inclined panels with their ends offset only. In both these instances the panels indicated by 30 slide on flanges or ways at the sides of the chute whether the latter is sectional or otherwise, and are secured by locking devices indicated by 31, essentially the same as those previously described.

I claim as my invention:

1. A mail chute open at one side and having ways at the edges of the opening, in combination with a covering panel held and guided to move on said ways and means for locking the panel in position.

2. A mail chute open at the front and having ways at the front edges in combination with a covering panel held and guided to move longitudinally on said ways and a key lock for securing said panel in position over the opening.

3. A mail chute open at the front and having ways thereon extending longitudinally of the chute, in combination with a covering panel held and guided upon said ways and having portions extending within the chute and in rear of the front edges of the sides thereof and means for locking said panel in position.

4. A mail chute embodying a channel having the flanges at the sides in combination with a longitudinally movable panel having the grooves with which the flanges coöperate to hold and guide the panel.

5. In a mail chute the combination with a plurality of tubular sections each having a movable panel held and guided to move vertically thereon for permitting access to the interior, said panels having portions extending within the section and in rear of the front edges thereof and means for securing said panels in position.

6. In a mail chute, the combination with a plurality of tubular sections, each having a removable panel held and guided to slide vertically at the front for permitting access to the interior thereof, and means for separately locking said panels in position.

7. In a mail chute, the combination with a plurality of pivoted tubular sections, each having a vertically-sliding panel at the front and means for securing said sections in vertical alinement.

8. In a mail chute, the combination with a plurality of pivoted tubular sections, each having a vertically-sliding panel at the front and means for separately and independently securing each of said sections in vertical alinement.

9. In a mail chute, the combination with a plurality of pivoted tubular sections, each having a vertically-sliding panel at the front and a locking means for each panel adapted to prevent its longitudinal movement, and also preventing tilting the section on its pivot.

10. In a mail chute, the combination with a support, of a plurality of pivoted tubular sections each having a vertically-sliding panel at the front and a locking device for each panel adapted to connect it to the support and thereby prevent its sliding movement and also the movement of the section on its pivot.

11. In a mail chute, the combination of a support, a plurality of pivoted tubular sections, each having a vertically-sliding panel at the front and a locking device mounted on each panel adapted to connect it to the support and thereby prevent its sliding movement and also the movement of the section on its pivot.

12. In a mail chute, the combination with a support, a chute section having the open front and the inwardly-extending flanges at the sides thereof, of the panel for closing said front composed of the side moldings having the grooves coöperating with the flanges on the chute section, the inwardly-extending flanges, the glass plate clamped between said flanges, the cross bar at the end of said panel and the locking device carried thereby and coöperating with the support to lock the panel in position.

13. In a mail chute, the combination of a support, a pivoted chute section having a sliding panel at the front, the bracket on the support having the arms, and a locking device on the panel embodying the laterally-movable projections for engaging the arms of the bracket.

14. In a mail chute, the combination with a support, of a pivoted chute section having a sliding panel at the front and means for limiting the tilting movement of the section on its pivot.

15. In a mail chute, the combination with a support, of a chute section pivoted to tilt forwardly and open at the front, a vertically-sliding panel for covering the opening and a locking device for securing the panel over the opening and the section in vertical position.

16. In a mail chute, the combination with the bracket having the notches and the upper chute section having the studs arranged in the notches, of the lower chute section pivoted at its lower end and open at the front and having the slots engaging the studs on the upper chute section, the longitudinally sliding panel for closing the front of the section and locking devices between the panel and bracket.

17. A section for mail chutes having the open front, the pivot studs at its lower end, and the open slots at its upper end, and the sliding panel for covering the front of the section.

18. The combination with a bracket having the forwardly-extending arms provided with the notches, of a mail chute section having the open front, the pivot studs at one

end and the open slots at the opposite end, a sliding panel for covering the front of a section and locking devices for securing the panel to the arms of the bracket.

19. The combination with a bracket having the forwardly-extending arms provided with the notches, of a mail chute section pivoted at one end, the vertically-sliding panel mounted thereon having the cross bar at one end provided with the laterally-projecting bolts adapted to engage the bracket and a removable key for actuating said bolts.

20. In a mail chute, the combination with a stationary member, a tubular chute section having the vertically-movable panel at the front, and a locking device embodying the laterally-movable bolts for engaging the stationary member, the rotary member to which they are connected, and wards in front of said member, and a removable key adapted to coöperate with said member and the wards.

21. In a mail chute, the combination with the channel having the inwardly-extending flanges on the sides, of the panel having at the sides the moldings, each composed of a single piece of sheet metal having the free inwardly-extending flanges overlapping the edges of the panel at the front and rear and doubled to form the grooves in the outer sides into which the flanges of the channel extend.

22. In a mail chute, the combination with the channel having the inwardly-extending flanges at the sides, of the panel having at the sides the moldings each composed of a single piece of sheet metal having the free inwardly-extending flanges overlapping the edges of the panel at front and rear and doubled to form the grooves at the outer sides into which the flanges of the channel extend, and the reinforcing strips arranged within the moldings and engaging the edges of the panel.

23. In a mail chute, the combination with the channel having the inwardly-extending flanges at the sides, of the panel having at the sides the moldings, each composed of a single piece of sheet metal having the free inwardly-extending flanges overlapping the edges of the panel at front and rear and doubled to form the grooves at the outer sides into which the flanges of the channel extend and the angle bars arranged in the moldings, one flange engaging the edge of the panel and the other extending forwardly to support the outer edge of the molding.

24. A molding for use in mail chutes composed of a single piece of sheet metal having the inner free edges adapted to embrace a panel and the groove in the outer edge, the rear wall of said groove being composed of two thicknesses of the metal in close contact.

25. In a mail chute, the combination of a support, a plurality of tubular chute sections one of the sections being pivotally supported at one end adapted to have its opposite end moved out of alinement and means for securing it in alinement with adjacent sections.

26. In a mail chute, the combination of a support, a plurality of tubular sections, one of the intermediate sections being pivotally supported at one end to have its opposite end moved out of alinement and means coöperating with said opposite end to secure it in alinement with adjacent sections.

27. In a mail chute, the combination with a support, a tubular section pivotally supported at one end to tilt vertically and a locking device embodying a key lock for securing the section in alinement with adjacent sections.

28. In a mail chute, the combination of a support, a plurality of tubular sections, one of said sections being pivoted to the support in open bearings and means for securing it in alinement with adjacent sections.

29. In a mail chute, the combination of a support, a plurality of vertically arranged tubular sections normally in alinement, one of said sections being pivotally mounted on the support at one end, devices for preventing longitudinal movement of said section when in vertical position and means for preventing the section from tilting.

30. In a mail chute, the combination of a support, a plurality of vertically arranged chute sections normally in alinement, one of said sections being pivoted at one end on the support in open bearings, means for preventing disengagement of the bearings of the section when the latter is in vertical position and locking means for preventing the section from tilting.

31. In a mail chute embodying a plurality of tubular sections, the combination with a support, of a tubular chute section having the bearing studs at the sides of one end and bearings on the support with which said studs coöperate to enable the opposite end of said section to be moved out of alinement with the adjacent section.

32. In a mail chute, the combination with a support and a bracket thereon having the forwardly-extending arms, and fastening devices between it and the support for securing it directly and rigidly to the latter, of tubular chute sections having their proximate ends located between the bracket arms, a bar cooperating at its ends with the bracket arms and a key lock for securing said bar in position.

33. In a mail chute, the combination with a support and a bracket thereon having the forwardly-extending arms, of tubular chute sections having their proximate ends located between the bracket arms, a locking bar extending between the arms, and a movable

bolt mounted on the bar adapted to be actuated by a removable key.

34. 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 a plate or 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.

35. 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 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.

36. In a mail chute the combination of a support, a plurality of tubular sections adapted to be maintained in vertical alinement, one at least of said sections having a pivotal connection with said support arranged in rear of its forward lower edge and means for securing said section in position.

37. In a mail chute, an outwardly movable section hinged at one end, and means for guiding said section while it is moving to its normal position; substantially as described.

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Witnesses:
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