

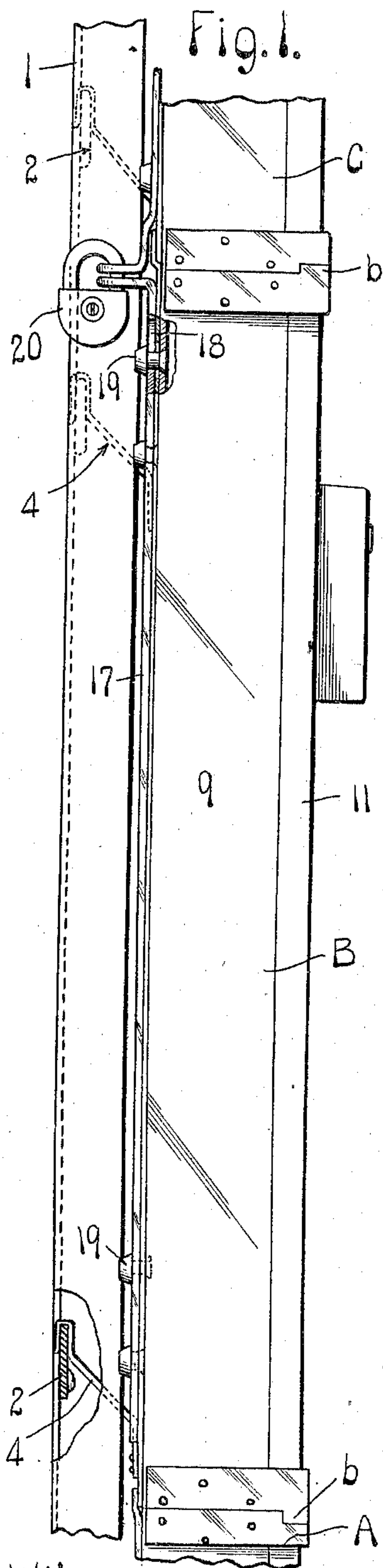
MAIL CHUTE.

APPLICATION FILED FEB. 9, 1909.

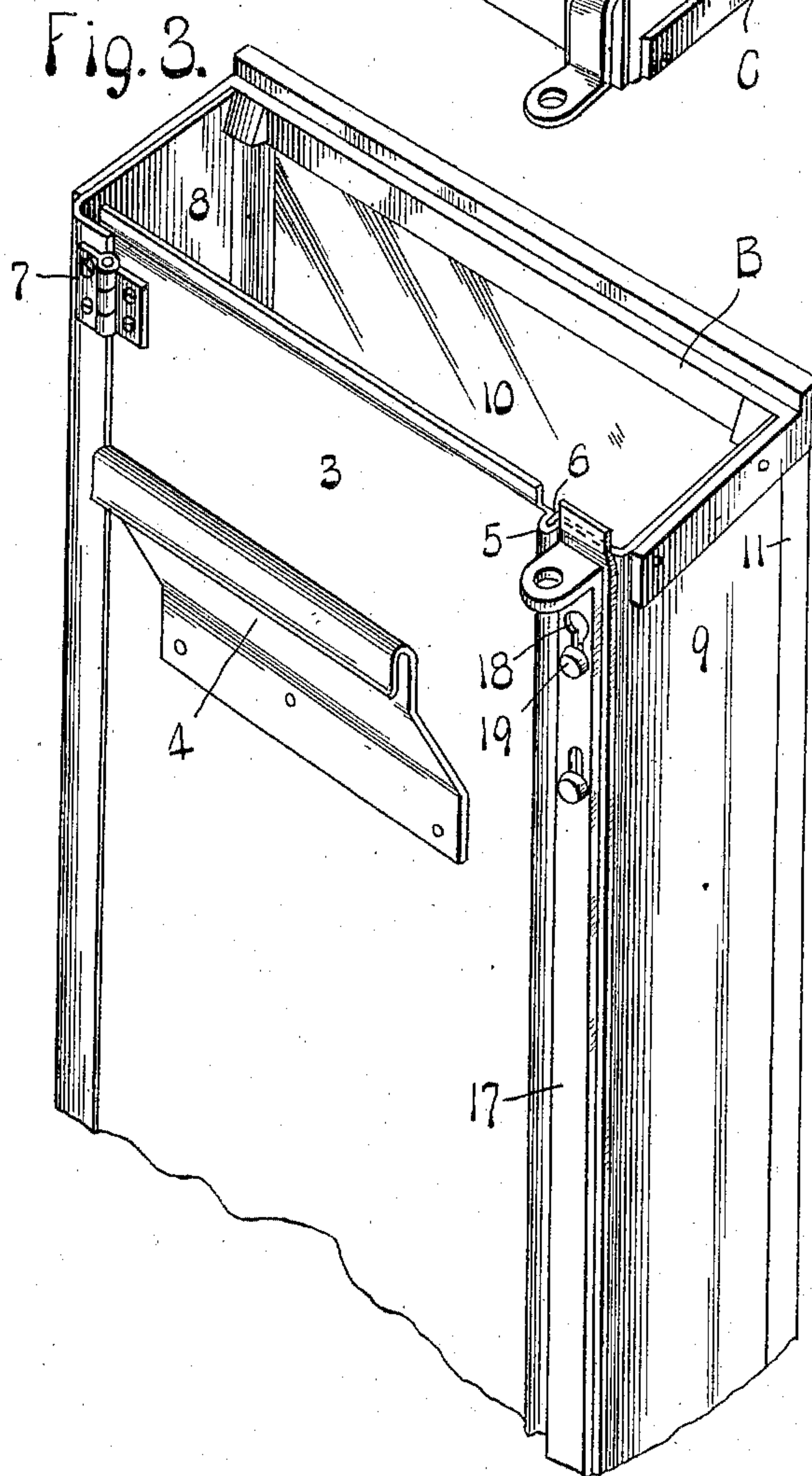
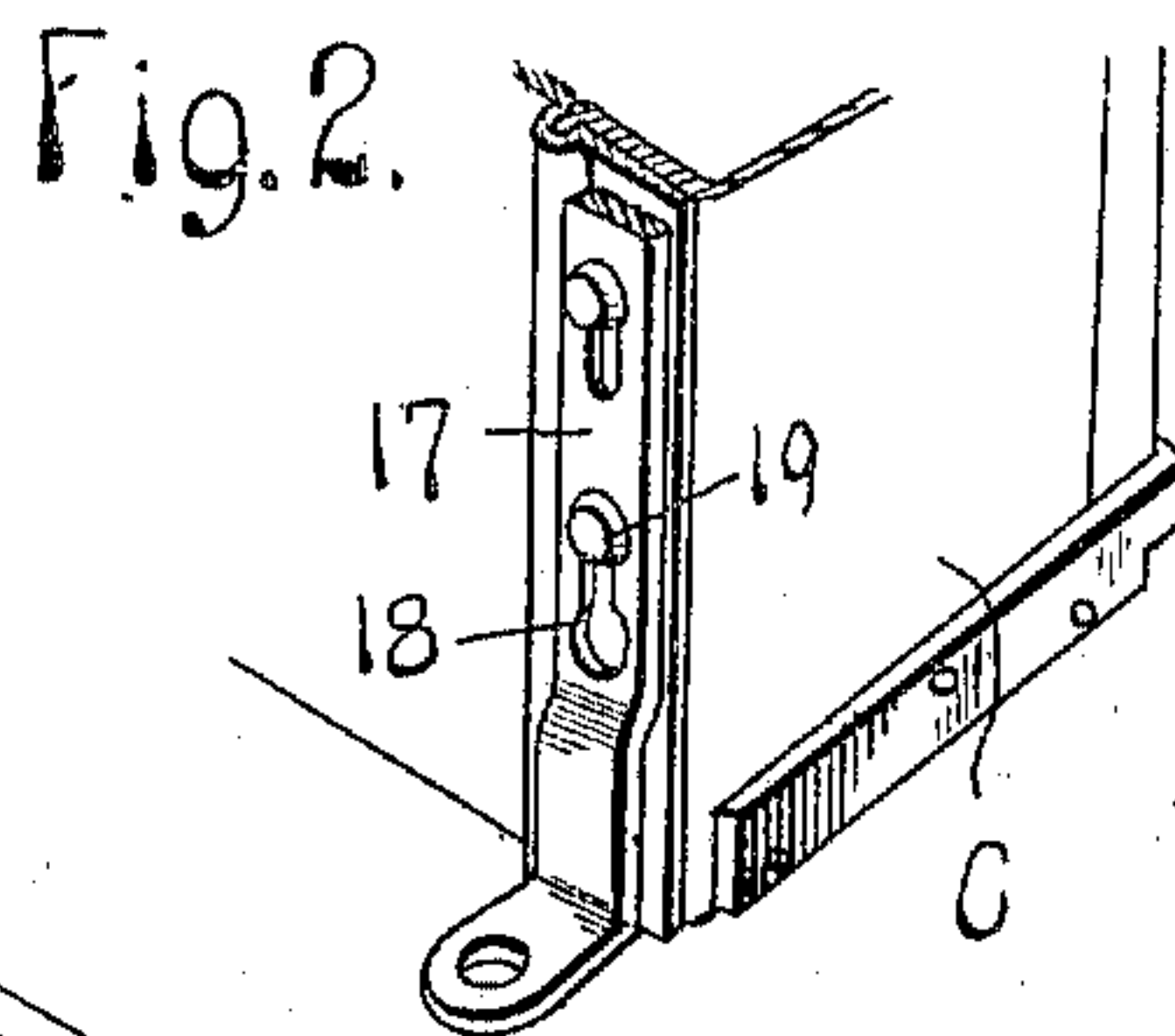
967,455.

Patented Aug. 16, 1910.

2 SHEETS—SHEET 1.



Witnesses  
A. J. McCauley  
Lenore Clark.



Inventor:  
Arthur K. Smith  
by *J. R. Cornwall*  
Att'y.

A. K. SMITH.  
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2 SHEETS—SHEET 2.

Fig. 4.

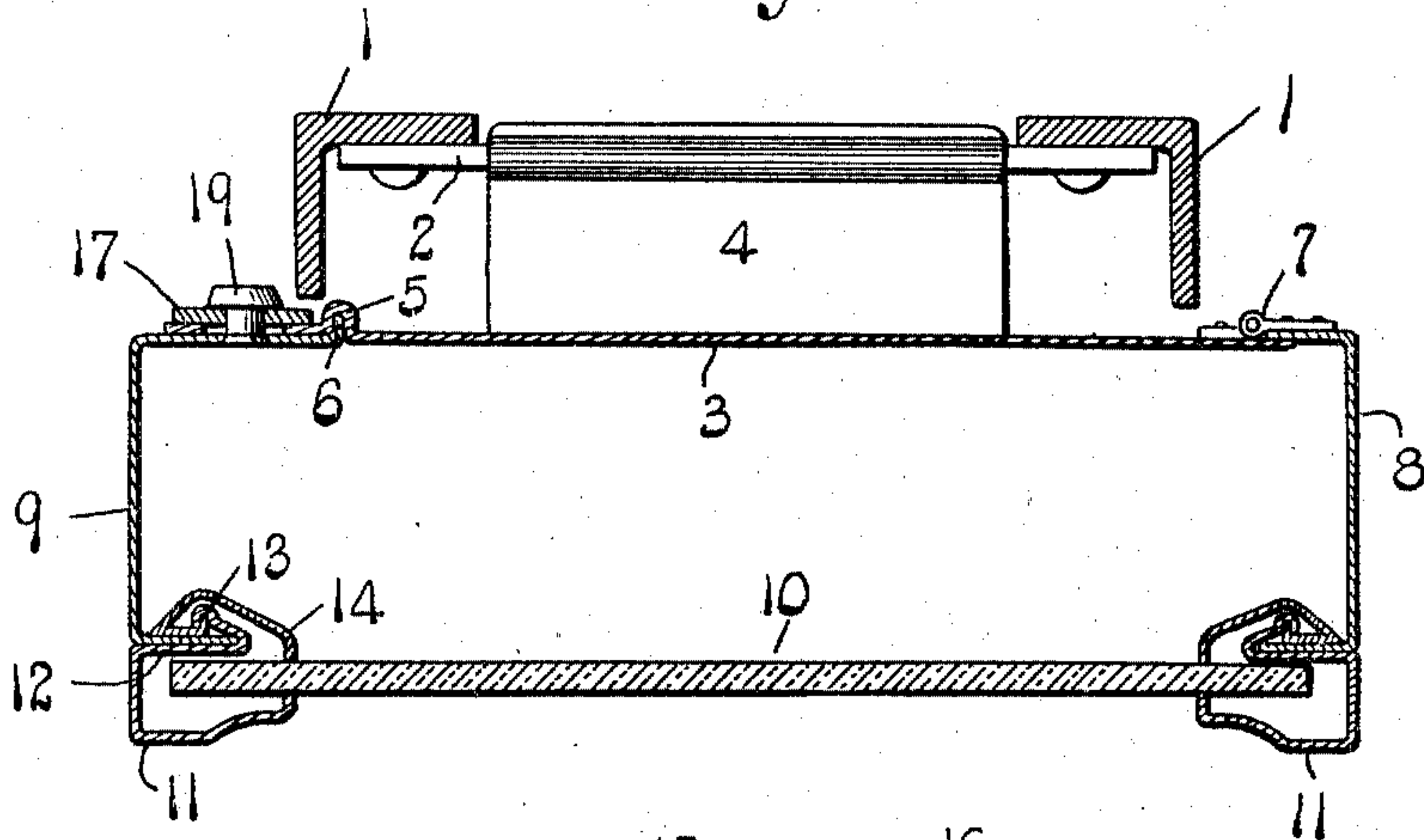


Fig. 5.

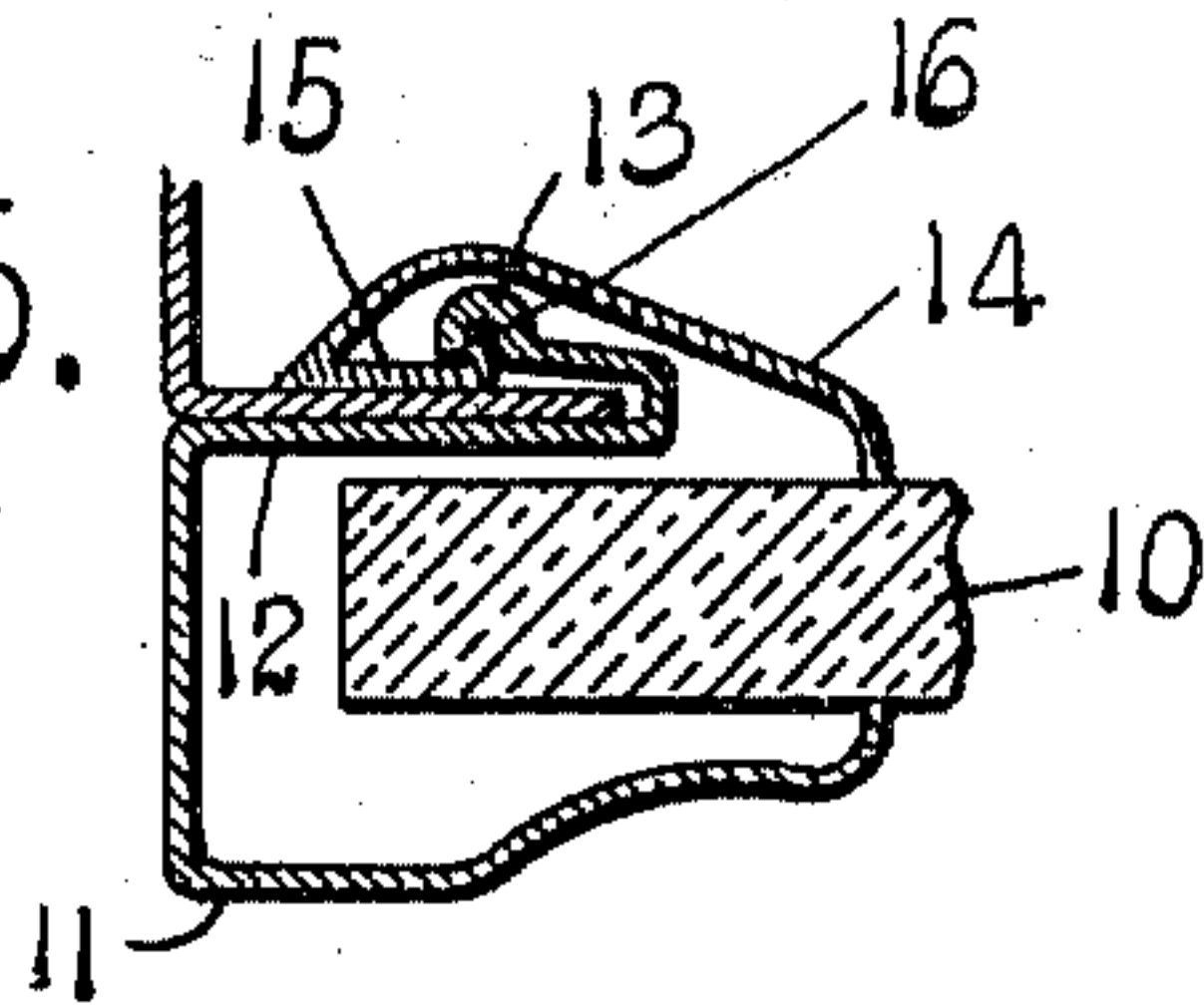


Fig. 6.

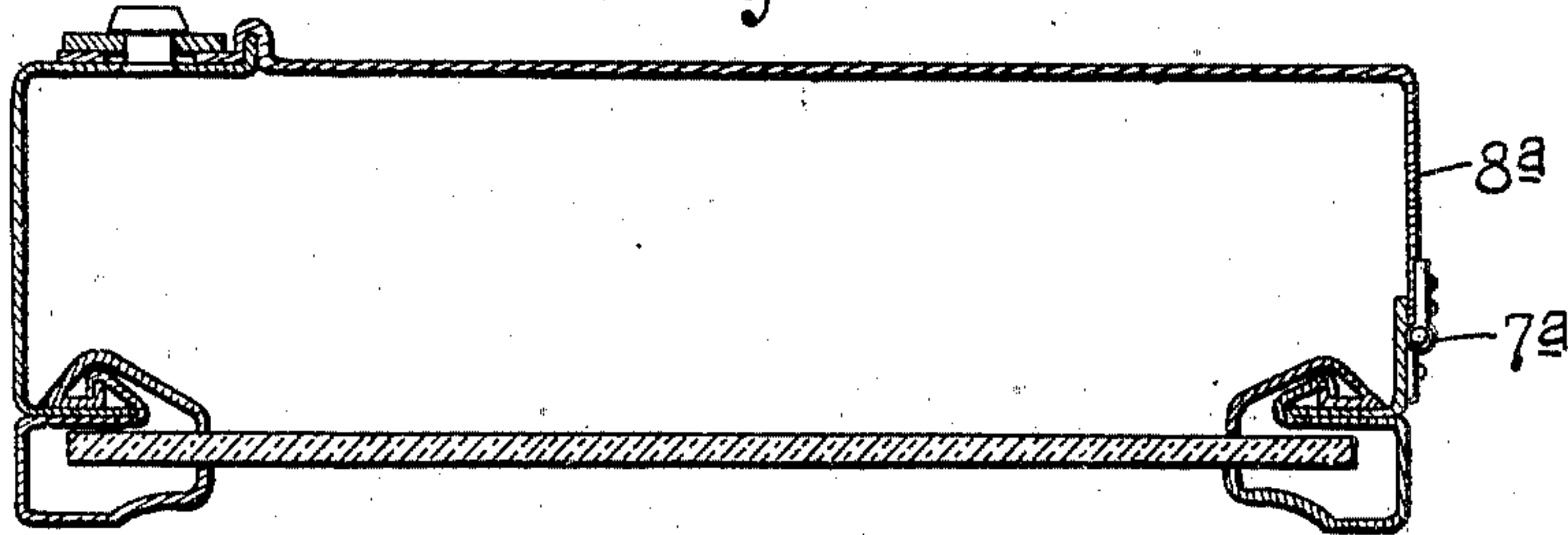
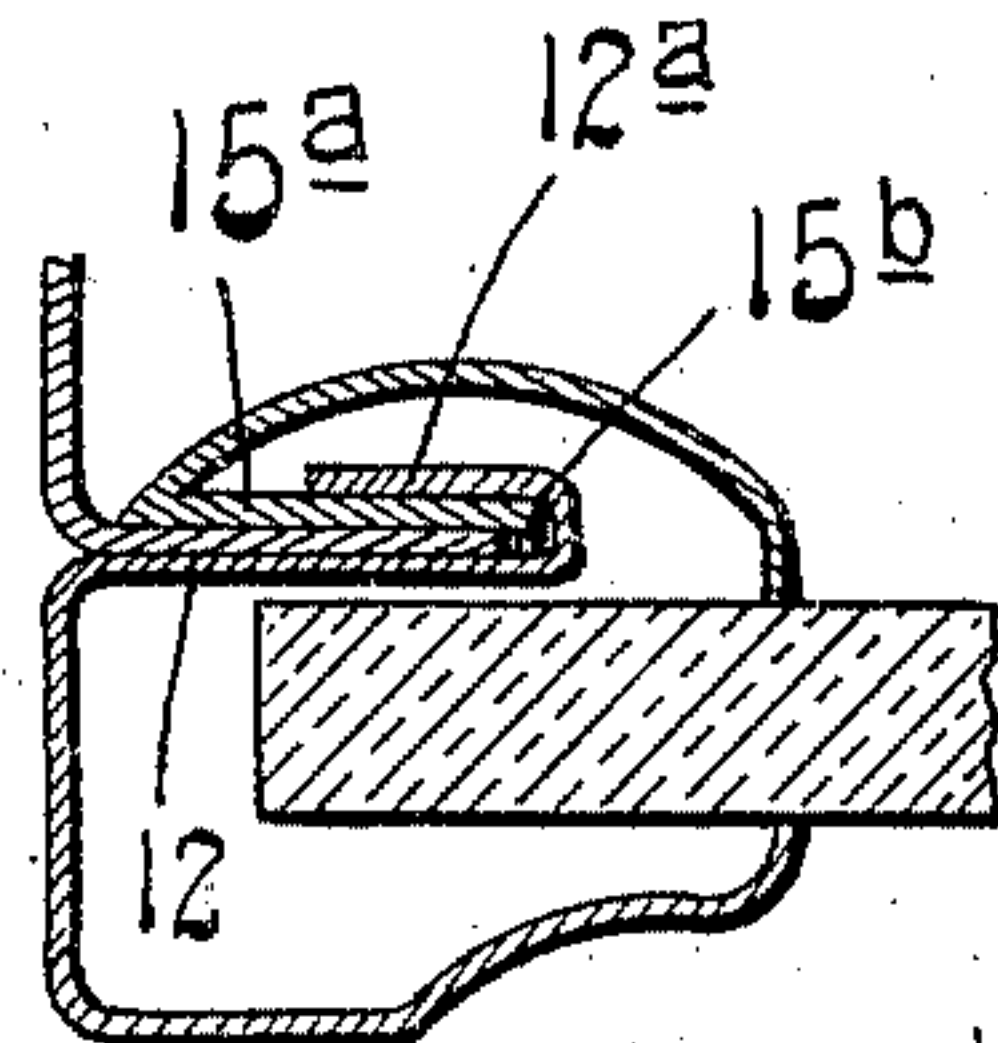


Fig. 7.



Witnesses  
a. j. m. Cauley  
Lenore Clark.

Inventor:  
Arthur K. Smith  
by J. R. Cornwall  
ATT'Y.



# UNITED STATES PATENT OFFICE.

ARTHUR K. SMITH, OF ST. LOUIS, MISSOURI.

## MAIL-CHUTE.

967,455.

Specification of Letters Patent.

Patented Aug. 16, 1910.

Original application filed January 2, 1909, Serial No. 470,391. Divided and this application filed February 9, 1909. Serial No. 476,883.

*To all whom it may concern:*

Be it known that I, ARTHUR K. SMITH, a citizen of the United States, residing at St. Louis, Missouri, have invented a certain new and useful Improvement in Mail-Chutes, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a side elevational view, partly in section, of my improved mail chute; Fig. 2 is a detail view of the locking means as seen from the back of the chute; Fig. 3 is a perspective view of the upper end of one of the key sections of my improved mail chute; Fig. 4 is a horizontal sectional view through the chute; Fig. 5 is an enlarged detail view of the molding for holding the glass panel in position; Fig. 6 is a horizontal sectional view through a modified form of chute; and Fig. 7 is an enlarged sectional view through a modified form of molding.

This invention relates to a new and useful improvement in mail chutes, the object being to construct the chute in such manner that the hinges and locking members are arranged at the back of the chute.

Another object is to construct the locking members in such way that a single padlock may be used to secure two adjacent chute sections in position. And a still further object is to construct the molding which holds the front glass panel in position in two parts so that said parts will be pivotally connected together and moved so as to clamp the glass panel and the supporting side wall in position by uniform pressure.

With these objects in view, the invention consists in the construction, arrangement and combination of the several parts of my device, all as will be hereinafter described and afterward pointed out in the claims.

In the drawings there is illustrated a supporting frame designed to be secured to the wall of a building, or other suitable support, said frame consisting of two vertically disposed angle irons 1 (see Figs. 1 and 4) connected by cross bars 2 riveted thereto.

3 indicates the back wall of the chute which has secured to it suitable hook plates 4 by which the chute sections are suspended or hung upon the supporting frame, the

hooked plates engaging the cross bars 2. 55  
Near one edge of the plate 3 there is a vertically disposed bend or jog 5 forming a crevice or groove into which a flange 6 on the free edge of the hinged portion of the chute section is received. The opposite edge 60  
of plate 3 has connected to it one or more hinges 7 to which one of the side walls 8 of the chute section is also connected. The inwardly extending flange on this side wall 8 is preferably arranged behind the back 65  
plate 3 so that no crevice or opening is left into which mail may be caught. 9 indicates the other side wall of the chute section whose inwardly extending flange is arranged in front of the back plate 3 and is provided 70  
with the flange 6 heretofore described. Both of the side walls 8 and 9 at their front edges are provided with inwardly extending flanges, as shown in Fig. 5.

10 is the front wall or panel of glass 75  
which is mounted in a two-piece molding constructed as follows: The exposed portion of the molding 11 has its free edge in engagement with the panel 10 and is then bent rearwardly and inwardly as at 12, the 80  
wall 12 acting as a surface against which the inner flange of the side wall of the chute bears. The inner edge of this wall 12 is bent rearwardly and then outwardly around the edge of the side wall flange, and the extreme outer edge of this bent portion is 85  
folded as at 13 to form a longitudinally disposed groove or socket for the other member of the molding. The inner portion of the molding consists of a wall 14 which bears 90  
against the inner surface of the glass panel 10, its outer edge being bent inwardly to form a wall 15 which coöperates with the flange of the side wall of the chute. The inner edge of wall 15 is provided with a 95  
flange 16 which is received in the groove 13 forming a pivotal connection between the two portions of the molding, and about which axis said members may move.

In assembling, the inner and outer portions of the molding are preferably arranged 100  
in proper relation to each other and in position on the edge of the glass. The inwardly extending flange at the forward edge of the side wall of the chute is now introduced into 105  
position. In passing between the walls 12 and 15 this flange will tend to spread said walls, which spreading action, being on one



side (the outer) of the pivotal connection, will cause the inner edges of the walls 11 and 14 to tend to move toward each other, said parts acting as levers of the first order, which inward movement, however, is resisted by the glass panel. When the flange is inserted between the walls 12 and 15, the walls 11 and 14, which are resilient; are under a constant tension which is exerted not only to clamp the glass panel 10 between their inner edges, but also to clamp the flange of the chute wall between their outer edges, the pressure exerted at both points being equal.

By the above construction of molding it is possible to make the outer portion of said molding of more expensive metal than the inner portion; for instance, the outer portion may be made of bronze and the inner portion of rolled iron or steel. A saving in the cost of material may thus be effected. By making the inner and outer portions resilient, and pivotally connecting them together so that they act upon the two parts, to wit, the wall flange and the glass, with a uniform pressure, any irregularities in the thickness of the glass will be compensated for, so that no crevice into which mail matter may be caught will be left. Furthermore, this resiliency which permits the two portions of the molding to adapt themselves to different thicknesses of glass and irregularities in manufacture of the chute, enables the construction to be made cheaply by machinery, practically dispensing with all hand labor incident to fine and accurate adjustment of the parts and close fittings.

It is the usual practice to construct the chute sections, which extend from floor to ceiling, in two or more separate parts, one of said parts containing a mail-receiving aperture and the other or upper part extending from the mail-receiving aperture up to the thimble or casting which is adjacent the ceiling. In the present construction the chute from floor to ceiling is constructed in three sections, A being the lower, B the middle section, containing the mail-receiving aperture, and C the upper section. The middle section is provided with flanges *b* which serve to lock the upper and lower sections against movement when the middle section is home. It is unnecessary by this "key" arrangement to provide special locking means for the lower section, or, indeed, for the upper section, for that matter, but I prefer to have locking means on the middle and upper sections. This locking means consists of a bar 17 slidingly mounted so as to move vertically behind the back plate 3 and adjacent the bent portion 5. This bar is provided with "key-hole" openings 18 which are designed to register with openings in the back plate 3. 19 are headed pins or studs secured on the back flange of the side wall 9

and which extend through the openings in the back plate 3 and cooperate with the key-hole openings in the locking bar 17. When the bar 17 is in its lower position, as shown in Fig. 2, or in its upper position, as shown in Fig. 3, the pins 19 are in the small portion of the key-hole and consequently the chute is locked. When the bars are moved so that the enlarged portion of the key-hole registers with the pins 19, the hinged portion of the chute may be swung outwardly or swung home, as the case may be. By moving the bars on the upper and middle chute sections toward each other, in locking the chutes, it is possible to use a swinging padlock 20 to secure the hinged portion of the chute sections in position. To open the chute to give access to the interior, the padlock is removed and the bar on the middle chute section depressed, which will enable that section carrying the mail aperture to be swung outwardly. The lower chute section can also be moved if desired. If the top section is to be moved its locking bar must be raised to release the heads of the locking pins. To lock the chute sections home, the upper section is first closed and its locking bar depressed; the bottom section is then closed, and the middle section is closed last, its locking bar being raised so that the bent portions of the locking bars lie adjacent each other as shown in Fig. 1, when the padlock 20 may be introduced.

In Fig. 6 I have shown a modified form of chute section in which instead of having the hinges 8 located behind the back plate 3, said back plate has one edge extended forward to form a side wall 8<sup>a</sup> to which the hinges 7<sup>a</sup> are connected. In this way the hinge is located diametrically opposite the closing edge of the chute, which may be a preferable construction in some instances, where it is desired to save room and space necessary to open the chute hinged in the manner heretofore described and illustrated in Fig. 4.

In Fig. 7 I have shown a modified form of molding in which the wall 15<sup>a</sup> is provided with a flange 15<sup>b</sup> interlocking with the edge of the chute flange, and being embraced by a wall 12<sup>a</sup> parallel to the wall 12, whereby when said parts are assembled the inner and outer portions of the molding serve to hold the glass panel in position.

This application is a division of an application filed by me January 2d, 1909, Serial No. 470,391.

I am aware that minor changes in the construction, arrangement and combination of the several parts of my device can be made and substituted for those herein shown and described without in the least departing from the nature and principle of my invention.

Having thus described the invention, what



is claimed as new and desired to be secured by Letters Patent is:

1. In a mail chute, a plurality of superimposed chute sections, each of which comprises a back wall and a hinged front portion comprising side walls and a front wall, the ends of the front wall of one of which hinged portions overlap the ends of the front walls of the hinged portions of the adjacent chute sections to hold said adjacent hinged portions in position and the joints between the swinging portion and the back wall being at points inside the rear corners of the chute section.
2. In a mail chute, a chute section comprising a back plate and a hinged front portion, which plate and hinged portion combine to form a chute, rectangular in cross section, the joints between the hinged portion and the back plate being at points inside the rear corners of the chute section, and the ends of the front wall of which hinged portion are extended.
3. In a mail chute, a chute section comprising a back plate and a hinged front portion, which plate and hinged portion combine to form a chute rectangular in cross section, the joints between the hinged portion and the back plate being at points inside the rear corners of the chute section, the ends of the front wall of which hinged portion are extended and means for locking the hinged portion of the chute section to the back plate.
4. In a mail chute, a back plate having a flange-receiving groove formed a short distance from one edge, and a swinging portion hinged at its opposite edge, said swinging portion having a flange fitting in said before-mentioned groove.
5. In a mail chute, a back plate having a groove or depression formed a short distance from one edge, a swinging portion hinged to its opposite edge, and an inwardly extending flange on said hinged portion provided with a lip fitting in said groove.
6. In a mail chute, a back plate, a hinged portion having an inwardly extending flange at its hinged edge extending behind said back plate, an inwardly extending flange on the opposite edge of the hinged portion and a glass panel carried by said hinged portion.
7. In a mail chute, a back plate having a groove near one edge, a portion hinged to the opposite edge of said plate, said portion comprising side walls having inwardly extending flanges at their front and back edges, the flange on the back edge of one of the side walls engaging in the groove in the back plate and a glass panel secured in position between moldings mounted on said front flanges.
8. In a mail chute, a back plate having a flange receiving groove formed near one edge, a swinging portion hinged to the back plate a short distance from the opposite edge, and a flange on the swinging portion which fits in the flange receiving groove.
9. In a mail chute, a back plate having a flange receiving groove formed near one edge, a swinging portion hinged to the back plate a short distance from the opposite edge, a flange on the swinging portion which fits in the flange receiving groove, and means whereby the swinging portion is locked to the back plate.
10. In a mail chute, a back plate having a flange receiving groove formed near one edge, a swinging portion hinged to the back plate a short distance from the opposite edge, a flange on the swinging portion which fits in the flange receiving groove, and a glass panel carried by the swinging portion.
11. In a mail chute, a back plate having a flange receiving groove formed near one edge, a swinging portion hinged to the back plate a short distance from the opposite edge, a flange on the swinging portion which fits in the flange receiving groove, means whereby the swinging portion is locked to the back plate, and a glass panel carried by the swinging portion.
12. In a mail chute, the combination with a back plate, of a swinging portion hinged to said back plate, the hinge point between said swinging portion and back plate being at a point a short distance from the side wall of the swinging portion.
13. In a mail chute, the combination with a back plate, of a swinging portion hinged to said back plate, the hinge point between said swinging portion and back plate, and the joint between the free edge of the swinging portion and the back plate, being at points inside the side edges of the back plate.
14. In a mail chute, the combination with a back plate, of a swinging portion hinged to said back plate, the hinge point between said swinging portion and back plate, and the joint between the free edge of the swinging portion and the back plate, being at points inside the side edges of the back plate, and a glass panel carried by the swinging portion.
15. In a mail chute, the combination with a back plate, of a swinging portion hinged to said back plate, the hinge point between said swinging portion and back plate, and the joint between the free edge of the swinging portion and the back plate, being at points inside the side edges of the back plate, and means whereby the swinging portion and back plate are locked to one another.
16. In a mail chute, the combination with a back plate, of a swinging portion hinged to said back plate, the hinge point between said swinging portion and back plate, and the joint between the free edge of the



swinging portion and the back plate, being at points inside the side edges of the back plate, a glass panel carried by the swinging portion, and means whereby the swinging portion and back plate are locked to one another.

17. In a mail chute, a back plate, a swinging portion having side walls, the rear edges of which side walls are bent inwardly to form flanges which engage the side edges of the back plate.

18. In a mail chute, a back plate, a swinging portion having side walls, the rear edges of which side walls are bent inwardly to form flanges which engage the side edges of the back plate, and hinges uniting one of the flanges and the back plate.

19. In a mail chute, a back plate, a swinging portion having side walls, the rear edges of which side walls are bent inwardly to form flanges which engage the side edges of the back plate, and a glass panel carried by the swinging portion.

20. In a mail chute, a back plate, a swinging portion having side walls, the rear edges of which side walls are bent inwardly to form flanges which engage the side edges of the back plate, and means whereby the swinging portion is locked to the back plate.

21. In a mail chute, a back plate, a swinging portion having side walls, the rear edges of which side walls are bent inwardly to form flanges which engage the side edges of the back plate, hinges uniting one of the flanges and the back plate, and a glass panel carried by the swinging portion.

22. In a mail chute, a back plate, a swinging portion having side walls, the rear edges of which side walls are bent inwardly to form flanges which engage the side edges of the back plate, hinges uniting one of the flanges and the back plate, a glass panel carried by the swinging portion, and means whereby the swinging portion is locked to the back plate.

23. In a mail chute, a back plate and a swinging portion, which combined form a chute rectangular in cross section, and the joints between the swinging portion and the back plate being at points inside the rear corners of the rectangular chute.

In testimony whereof I hereunto affix my signature in the presence of two witnesses, this 2nd day of February, 1909.

ARTHUR K. SMITH.

Witnesses:

F. R. CORNWALL,  
LENORE CLARK.