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LETTERBOX PLATE

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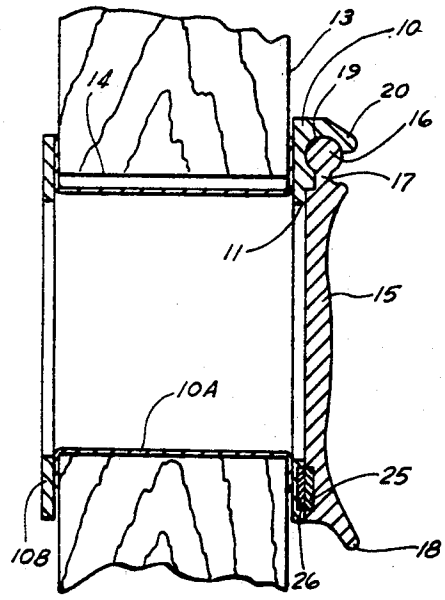


Fig. 1

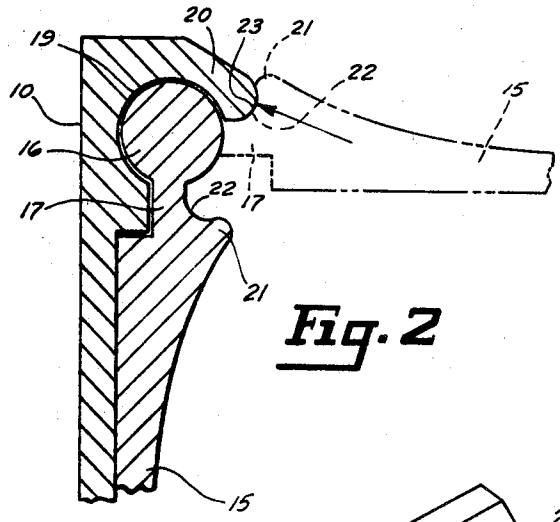


Fig. 2

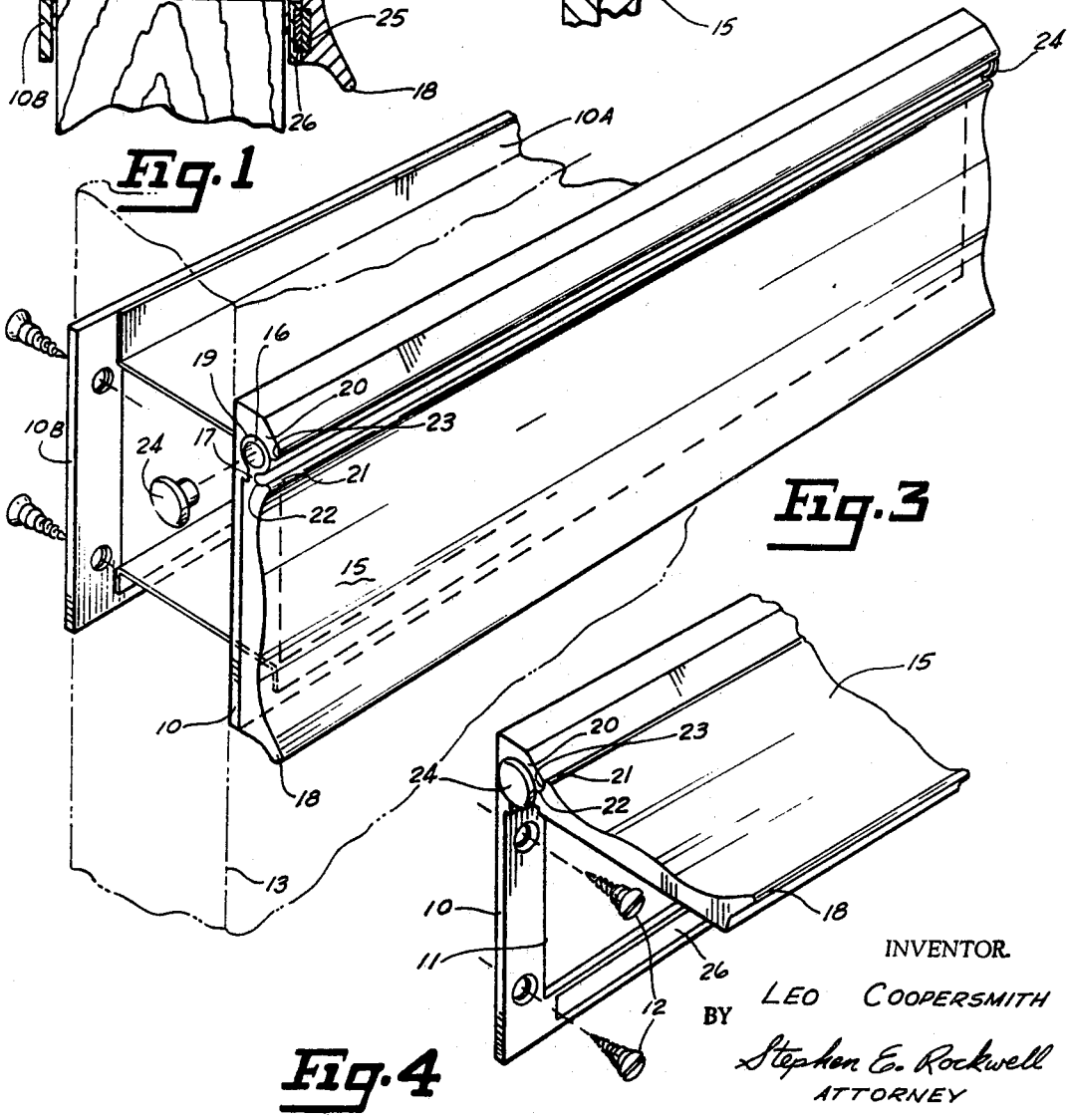


Fig. 3

Fig. 4

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LETTERBOX PLATE

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ABSTRACT OF THE DISCLOSURE

There is provided a letterbox plate for receipt therethrough of mail delivered by a postman, of the type having a hinged flap to cover a letter opening in a front plate of the assembly in such a way that when the flap is manipulated it uncovers the aforementioned opening in the plate. The flap has as an integral part thereof a hinge pin received in a complementally formed flange in the front plate to form a hinge connection between the two elements and the flange and flap are provided with coacting means to resist mutilation of the assembly when the flap is forceably opened.

This invention relates to letterbox plates and relates more particularly to such plates of the type having a hinged flap to cover a letter opening in a base or front plate of the assembly when the latter is mounted on a closure such as a door in such a way that, when the flap is manipulated to uncover the aforementioned opening in the plate, which is aligned with a complementally formed opening in the door, mail may be inserted through the assembly and door by a postman.

Heretofore such letterbox plates having hinged covers have, in at least many forms, been subject to the objection that force exerted on the flap, when the latter is opened, tends to mutilate the hinge connection between the flap and the plate, and it is not uncommon in such circumstances to have the flap pop out of the plate. Moreover, in such instances the plate and the flap may be permanently damaged when force is exerted on the flap in the aforesaid manner.

One object of the invention is to provide an improved letterbox plate having a hinged flap.

Another object is to provide in such an assembly an improved hinge connection between the base or front plate and the flap.

Still another object is to provide in such an assembly a plate and flap which coact in such a manner as to strongly resist mutilation of either by forces on the flap in a direction to open the flap, which forces might otherwise result in mutilation of the assembly as aforesaid.

A further object is to provide a letterbox plate for the aforementioned purpose having a hinged flap to cover a letter opening in a front plate of the assembly, which, when manipulated, uncovers the aforementioned opening in the plate, wherein the flap has as an integral part thereof a hinge pin received in a complementally formed flange in the front plate to form a hinge connection between the two elements and the flange and flap are provided with coacting means to resist mutilation of the assembly when the flap is forceably opened.

Still another object is to provide a plate and flap assembly of the aforementioned type which is simple to manufacture and economical to produce.

In the drawing:

FIG. 1 is a fragmentary elevational, sectional view of a closure, such as a vertically hinged door, provided with a letterbox plate, embodying the invention, and showing the latter in elevational section;

FIG. 2 is a fragmentary sectional view of a portion of the letterbox plate, similar to FIG. 1 and on a larger scale, showing the flap closed in full lines and showing it open in phantom;

FIG. 3 is a fragmentary perspective view of the letterbox-plate assembly prior to completion of installation on a closure such as a door and illustrating in an exploded fashion certain fasteners which may be employed in the installation; and

FIG. 4 is a fragmentary view similar to FIG. 3 but illustrating the flap in open position, prior to completion of the installation.

In the drawing the base or front plate of the letterbox assembly is indicated at **10**, the plate being elongated horizontally, as best shown in FIG. 3, and preferably formed of a suitable metal such as brass or bronze, for example. The plate **10** has a longitudinal opening **11** therein and the plate may be affixed to a closure **13**, having an opening **14** therein aligned with the opening **11**, by any suitable fasteners, screws **12** (FIG. 4) being shown for this purpose. The fasteners **12** are covered and, therefore hidden from view when the flap **15** is in the closed position thereof.

In the illustrated form, the means shown merely by way of example for installing the letterbox plate assembly with the closure **13** includes a liner **10*a*** within the opening **14** of the closure and a back plate **10*b*** having an opening therein aligned with the opening **11**, secured to the closure on the face thereof remote from the face to which the front plate **10** is affixed. The back plate **10*b*** may be affixed to the closure by screws as indicated in FIG. 3 or, if desired, the front and back plates may be interconnected, not shown, by male and female coupling members.

Hinged to the plate **10** is a flap or cover **15** constructed of a similar material and which may be conveniently formed as an extrusion having a hinge pin portion **16** as an integral part thereof interconnected with the body of the flap **15** by a neck **17**. As will be apparent from the foregoing and from the drawing, the cover and the hinge pin may be formed in one piece. The flap or cover **15** is provided with a forwardly extending (FIG. 1) longitudinal lip **18** along its lower margin by which the flap may be manipulated for access to the opening **11** in the front plate for the delivery of mail. In the type of installation illustrated, the letterbox plate is installed on the closure **13** in a horizontal plane and as the flap **15** is hinged at its upper margin it tends to close by gravity.

In the area of the hinge pin **16** and to receive the latter, the base or front plate **10** is provided with an arcuate recess **19** extending lengthwise thereof in a shouldered flange of the plate **10**. The flange and the plate **10** are formed as one piece. The surface area of the recess **19** in a direction transversely of the pin **16** is sufficient to retain the pin in the plate **10** when once assembled, the pin portion **16** of the cover being assembled with the base plate by relative longitudinal sliding movement of the parts. In other words, the cover or flap **15** having the pin **16** thereon is assembled by a sliding movement in a manner such that one end of the pin enters one end of the recess **19** and the sliding movement is continued until the aforementioned end of the pin reaches the fully assembled position thereof in which it is located in the other end of the elongated recess **19** in the plate **10**.

Once assembled with the plate **10**, the flap **15** is held against axial dislocation by a pair (FIGS. 3 and 4) of suitable headed fasteners, such as indicated at **24**, each being received in one of a pair of recesses formed in the respective ends of the pin **16**, so that the head thereof overlaps the aforementioned flange portion of the plate **10**. Each fastener **24** may have a press fit, if desired, in its companion recess formed in the pin **16**.

It will be noted that the aforementioned flange having the recess **19** which receives the hinge pin **16** forms, thereby, the other element of the hinge connection. This flange has a longitudinal, distal and forwardly directed lip **20** which is fingerlike in cross section as best shown in FIG. 2. The distal end of the finger is rounded as at **23**. The flap **15**, in a location near but spaced from the pin **16**, has a longitudinal lip **21** which also extends forwardly when the flap is closed, and which forms with the neck **17** of the flap a concave surface **22** complementally shaped with reference to the surface **23** of the finger to receive the distal end of the finger in the manner shown in phantom in FIG. 2 when the flap **15** is in fully open position.

In this position of the flap, the latter and the base plate lie in planes substantially at right angles to one another as shown in the last-mentioned view. When the flap is in this position, the convex or rounded surface **23** of the finger **20** meets the concave surface **22** of the cover to form an abutment for the cover so that after these surfaces meet, on further opening pressure exerted on the flap **15**, the stress (in the direction of the arrow in FIG. 2) on the finger portion **20** of the hinge connection is substantially lengthwise of the finger due to the aforementioned construction and arrangement, thereby tending to avoid any stress on the finger transversely thereof to inhibit bending or mutilation of the finger which provides at least in part, support for the pin **16** of the hinge connection.

It will be noted that the coacting surfaces **22** and **23** of the flap **15** and the base **10**, respectively, provide abutments strongly resisting further opening movement of the flap **15** from the open position shown in phantom in FIG. 2. As previously indicated, this construction also inhibits dislocation of the hinge pin **16** in such a manner as to pop out of the plate **10**, when there is force applied to the flap **15** in the last-mentioned position thereof in a counterclockwise direction as viewed in FIG. 2.

In the illustrated form, there is shown in FIG. 1 a permanent magnet element **25** arranged lengthwise of the flap **15** adjacent the lip **18** in flush relation to the inner face of the flap. The element **25** may have a press fit in the flap and coact with a similarly constructed and arranged magnet element **26** received in the plate **10** in a location for alignment with the magnet element **25** when the flap is closed.

The magnet elements are arranged so as to have opposite polarities, thereby attracting one another and holding the flap **15** firmly in the closed position thereof, as shown in FIG. 1. It will be understood, of course, that this magnetic force may be overcome by insertion of the fingers of a hand rearwardly of the lip **18** and force applied through these fingers in a direction to swing the flap **15** in a counterclockwise direction as viewed in FIG. 1.

While only one form of the letterbox plate has been illustrated in the drawing and described above, it will be readily apparent to those versed in the art that the assembly may take other forms and is susceptible of various changes in details without departing from the principles of the invention and the scope of the appended claims.

I claim:

1. In a letterbox plate assembly for support from a closure such as a door having a mail delivery opening therethrough, a front plate adapted to be secured in fixed relation with respect to the outer face of the door and having means defining an opening therein in alignment with said door opening, said plate having at one side and extending lengthwise thereof an integral lip providing in cross section a forwardly extending finger, a flap cover for closing said opening in the front plate having as an integral part and extending along one side thereof a hinge pin lying substantially in the median plane of the cover and connected to the body portion of the cover by a substantially straight neck portion also lying substantially in the median plane of the cover, said front plate in the region of the lip portion thereof having an arcuate recess for slidably receiving said hinge pin on assembly of the parts and thereafter hingedly retaining said pin for swinging movement with the cover to an open position wherein the cover is substantially at right angles to the plane of the front plate, said cover having means for manipulation thereof and having, when in closed position, an integral flange on the cover extending forwardly from the median plane thereof spaced from but adjacent to said pivot pin and coacting with the distal end of said finger to provide an abutment when the cover is in the last-mentioned position thereof to limit swinging movement of the cover in an opening direction, which when engaged imposes a substantially axial force on said finger when continued opening pressure is imparted to the cover, to inhibit mutilation of the front plate as by bending of the finger or dislocation of the hinge pin.

2. A letterbox plate assembly as defined in claim **1** wherein one of the coacting stop surfaces to limit opening movement of the cover is concave and the other is convex.

3. A letterbox plate assembly as defined in claim **1** wherein the distal end of the plate finger is convex and the abutment surface of the cover flange coacting with the finger is concave.

4. A letterbox plate assembly as defined in claim **3** wherein said finger on the plate has a portion thereof at substantially right angles to the median plane of the plate and a distal end portion inclined at an acute angle to the last-mentioned plane.

References Cited

UNITED STATES PATENTS

731,138	6/1903	Stearns	16—191
2,852,802	9/1958	Seby	16—135
3,007,100	10/1961	Bettcher	16—135

FOREIGN PATENTS

869,736	6/1961	Great Britain.
875,795	8/1961	Great Britain.
880,842	10/1961	Great Britain.
404,451	6/1966	Switzerland.

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