

(12) UK Patent Application (19) GB (11) 2 188 675 (13) A

(43) Application published 7 Oct 1987

(21) Application No 8608424

(22) Date of filing 7 Apr 1986

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(51) INT CL⁴
E05C 3/00

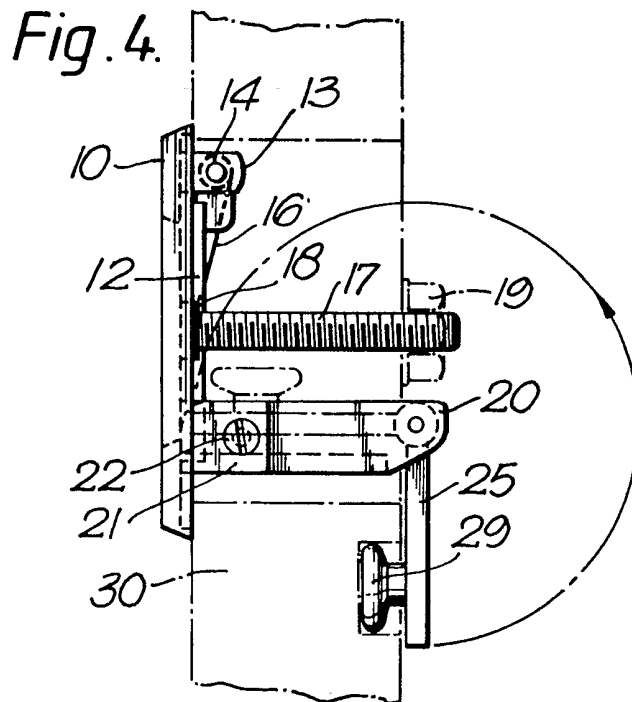
(52) Domestic classification (Edition I):
E2X 5

(56) Documents cited
GB A 2171453

(58) Field of search
E2X

(54) Lockable letter flap apparatus

(57) A lockable letter flap apparatus comprises a letter plate (10) having a letter slot therein, a hinged letter flap (12) biased to close said letter slot, a pair of support arms (20) extending rearwardly from the letter plate to beyond the letter flap and mounting a locking flap (25) for pivoting movement between a locking position (leftwards in the Figure) in which a free edge portion of the locking flap lies adjacent the bottom edge region of the letter flap (12) so as to block hinging movement thereof from the slot closing position of the letter flap, and an unlocking position (downwards) in which the hinging movement of the letter flap is unobstructed.



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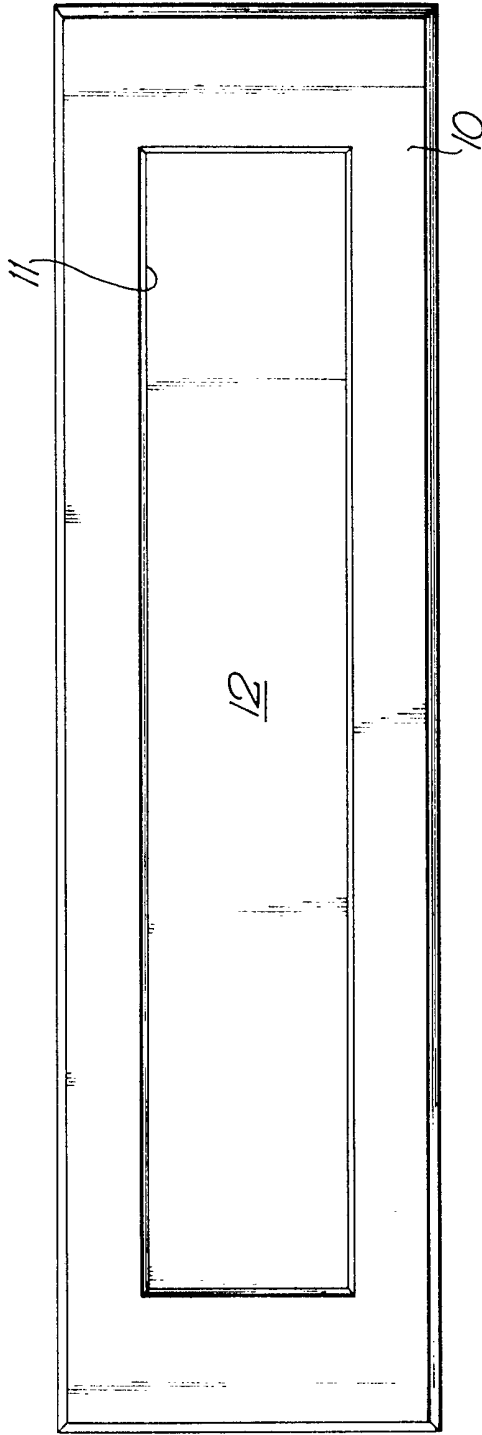


Fig. 1.

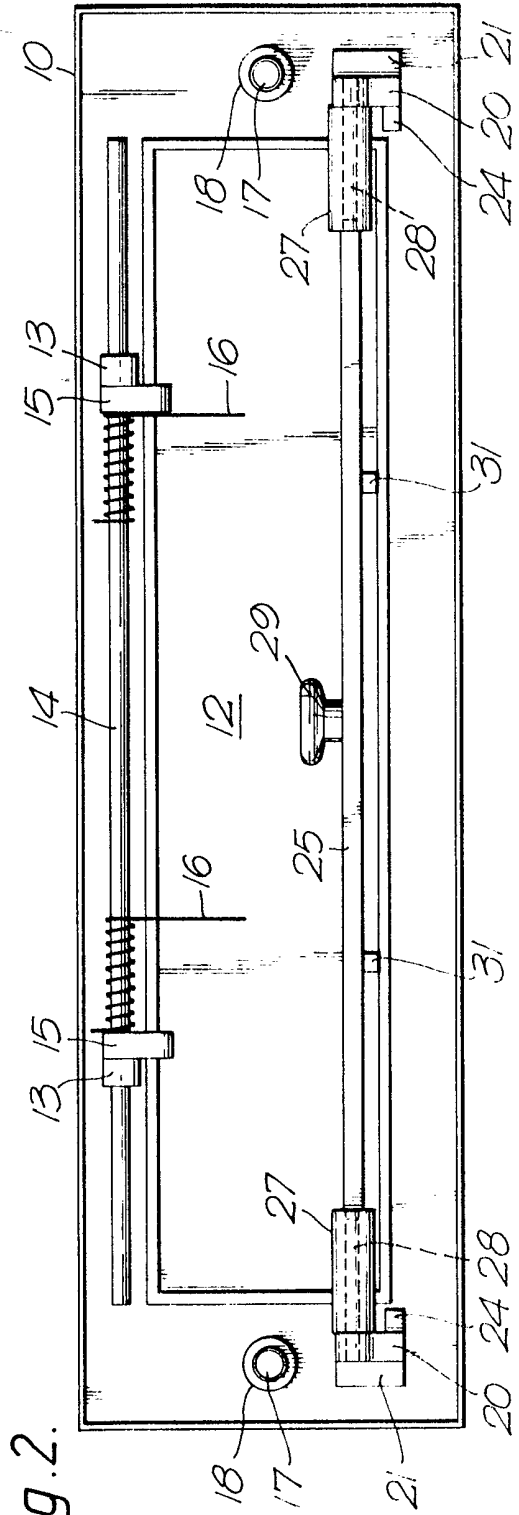
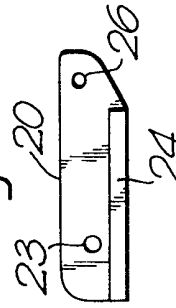
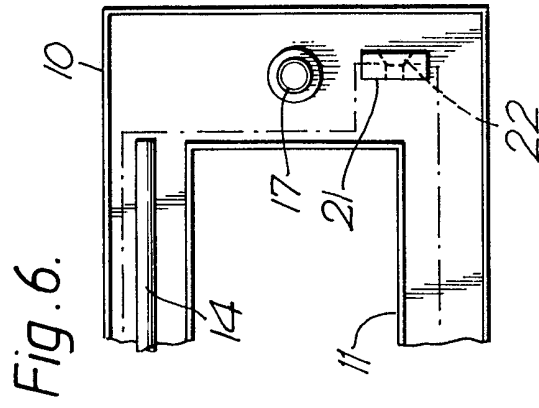
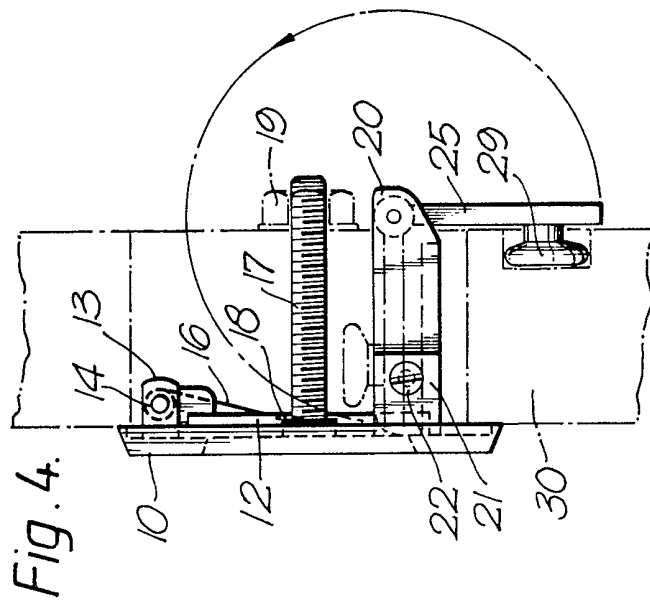
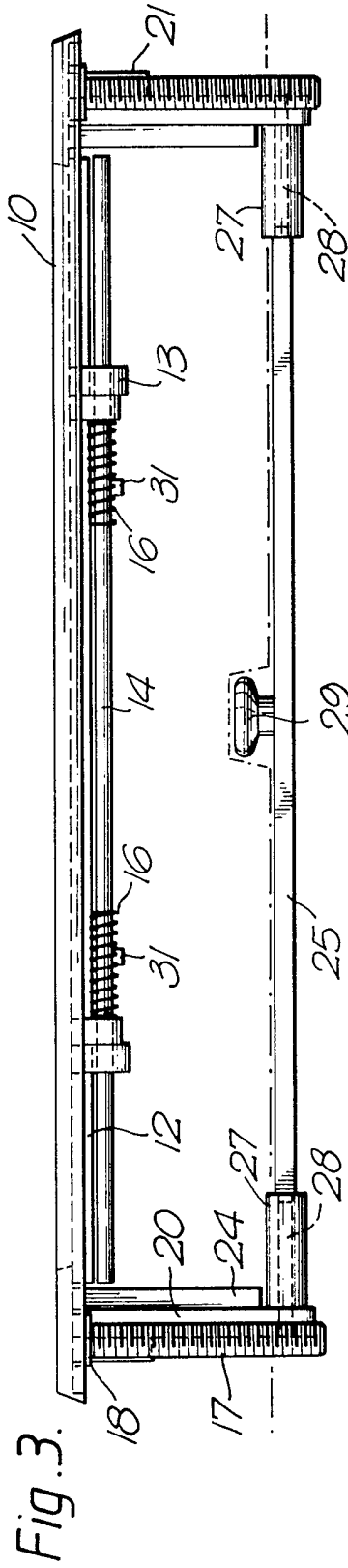


Fig. 2.



SPECIFICATION

Lockable letter flap apparatus

5 The present invention relates to lockable letter flap apparatus for allowing the delivery of mail to a building when unlocked and for excluding the introduction of material into the building when locked.

10 The conventional spring loaded "letter box" which in various forms is fitted to most buildings cannot be locked to prevent the introduction of unwanted or dangerous materials into the building. There is a need to be able to

15 lock the letter flap of such a letter box against opening so as, for instance, to prevent incendiary materials being introduced through the letter slot or simply to prevent delivery of mail when the building is no longer occupied.

20 Various proposals have been made previously for achieving such a result but these suffer from significant disadvantages. For instance, Specification 2109080 discloses a clamping member which can be wedged open

25 by turning a butterfly nut so as to wedge the clamping member in the slot in the thickness of a door behind a letter flap. Specification 2155100 discloses a block for insertion into the letter aperture of a door from the inside

30 and a pair of bolts attached to the door for engagement in holes in the block to retain it into position. These relatively primitive devices being quite separate from the door are liable to be mislaid when needed and may be dis-

35 lodged if sufficient force is applied to the letter flap, particularly if they are not well fitted. They will be difficult for old people and persons with arthritic hands to use because they require the operation of nuts. For the same

40 reason they will take some time to apply and to remove.

The device shown in Specification 2109080 when installed leaves the shank of a bolt protruding out of the door at a level where it

45 could well cause injury to the eye of a child.

The present invention provides a lockable letter flap apparatus comprising a letter plate having a letter slot therein, a hinged letter flap biased to close said letter slot, a support

50 structure extending from the letter plate to beyond the letter flap and mounting a locking member for pivoting movement between a locking position in which a portion of the lock-

55 ing member lies adjacent an edge region of the letter flap so as to block hinging movement thereof from the slot closing position of the letter flap, and an unlocking position in which the hinging movement of the letter flap is unobstructed.

60 Preferably, the letter flap is hinged to the letter plate along one edge of the letter flap.

The locking member may then in the locking position lie adjacent to and blocking against the edge of the locking flap opposite to the

65 said one edge.

Preferably the locking member is itself a flap. It may be hinged for pivoting movement about one edge.

70 Preferably, in the locking position, such a locking flap lies substantially at right angles to the letter flap.

Preferably, in the unlocking position, the locking flap lies substantially parallel to the letter flap.

75 Thus, when installed, the locking flap may lie substantially horizontal at the bottom of the letter slot in the locking position and may be pivoted upwards through a vertical position and further downwards to lie extending generally parallel to the letter flap and hanging

80 down from the locking flap mounting.

The support structure preferably comprises a pair of support arms extending substantially perpendicular to the letter plate.

85 Each support arm is preferably mounted to the locking plate in such a manner that the arm may be pivoted to lie generally parallel to the locking plate for packing and transport.

The letter flap is preferably provided with

90 one or more support members projecting from that face of the letter flap more remote from the letter plate (i.e. the interior face of the letter flap in use) and locating beneath the locking member to support the locking member in the locking position. Preferably, a single support member extends over a substantial

95 part of the length of the letter flap, or over its whole length. Such a support member on the letter flap may have the further effect that if

100 substantial force which might buckle the letter flap is applied in an attempt to open it, the edge of the letter flap bearing the support member is held down beneath the locking member and cannot be buckled upwards to

105 open the flap by force.

The invention will be illustrated by the following description of a specific embodiment with reference to the accompanying drawings in which:

110 Figure 1 is a front view of an apparatus according to the invention;

Figure 2 is a rear elevation of the apparatus of Figure 1;

115 Figure 3 is a top plan view of the apparatus of Figure 1;

Figure 4 is a side elevation of the apparatus of Figure 1;

Figure 5 is a detailed view of a support arm of the apparatus of Figure 1; and

120 Figure 8 is a rear elevation of one end of the apparatus of Figure 1 with details of the letter flap and locking flap omitted.

As shown in Figure 1, apparatus according to the invention comprises a letter plate 10 in the shape of an elongate rectangle having centrally located therein an elongate letter slot

125 11.

The slot 11 is closed from the inside by a letter flap 12. The letter flap 12 is hinged to the interior face of the letter plate 10. For this

130

purpose, the interior face of the letter plate 10 is provided with a pair of inwardly extending mounting lugs 13 each having a bore therethrough, the bores being aligned and receiving a hard steel hinge rod 14. A corresponding pair of mounting lugs 15 extend outwardly from one long edge of the letter flap 12 and each have a corresponding through bore by which they are mounted on the rod 14. Torsion springs 16 are provided to bias the letter flap 12 to close the slot 11.

A pair of fixing studs 17 are threaded in respective bushes 18 in the rear surface of the letter plate 10 and are employed in fixing the letter plate in position. If the letter plate is installed in a door, the stud 17 will typically protrude through the thickness of the door to receive nuts 19 as shown in Figure 4.

The arrangements described so far are conventional in themselves.

In accordance with the invention the letter plate 10 bears adjacent each bottom corner of the slot 11 a respective support arm 20. For the purposes of mounting each support arm 20, the rear surface of the letter plate 10 is provided with a rearwardly extending bracket 21 having a transversely extending bore there-through for receiving a fixing machine screw 22 (Figure 6). The support arm 20 is provided with a corresponding threaded bore 23 (Figure 5) by means of which it is fixed to the bracket 21.

The corner of the support arm 20 which is uppermost and abuts against the letter plate 10 is rounded off, as seen in Figure 5 to allow the support arm 20 to be rotated upwards to lie against the face of the letter plate 10 for compactness in transit once the machine screw 22 is loosened.

A locking flap 25 is hinged between aligned bores 28 in the end regions of the support arms 20. The locking flap 25 takes the form of an elongate rectangular flat plate having moulded on one long edge thereof a pair of longitudinally extending bushes 27 having outwardly facing bores therein each receiving a hinge pin 28 which passes also through the bores 26 in the support arms.

As best seen in Figure 4, the locking flap 25 is rotatable from a position in which it hangs vertically down anti-clockwise about the hinge pins 28 to lie horizontal and parallel to the support arms 20. In this position the locking flap 25 extends between the support arms 20 resting on a support member 31 described hereafter and abuts against the interior surface of the letter flap 12. A lifting knob 29 is provided on that face of the locking flap which is uppermost in the locking position and a recess to accommodate the lifting knob 29 may be made in the interior surface of a door 30 in which the apparatus is fitted as shown in Figure 4.

As best seen in Figures 2 and 3, the lower edge of the interior face of the letter flap 12

is provided with an inwardly projecting support member 31 which serves to support the leading edge of the locking flap when in the locking position and thus prevent deformation of the locking flap if it is pushed into the locking position vigorously with substantial downward force being applied to the lifting knob 29. The second important function of this support which may conveniently be termed a "clapping support" is that if substantial force is applied to the letter flap when the locking flap is in the locking position, any tendency for the letter flap to buckle causing the lower edge thereof to rise is counteracted by the clapping support 31 catching under the locking flap 25. The inward bowing of the letter flap 12 which would be expected under these circumstances will be tending to wedge the locking flap 25 downwards so that its locking action is enhanced and the bottom of the letter flap 12 is prevented by pressure exerted by the locking flap 25 on the clapping support 31 from being distorted upwards.

The apparatus according to the invention illustrated in the Figures may be installed in a door or wall generally as indicated in Figure 4. For normal use of the letter flap to allow deliveries of mail and so forth, the locking flap 25 is left hanging down in the position shown in Figure 4 in full lines. If it is desired to lock the letter flap against opening, it is only necessary to lift the locking flap 25 and flip it over into the locking position shown in ghost lines in Figure 4. To release the letter flap again, it is only necessary to grasp the lifting knob 29 and flip the locking flap upwards and backwards.

When in the locked position, the letter flap cannot be opened to allow the introduction of incendiary material.

The illustrated embodiment is easily fitted and is unlikely to require maintenance. Locking and unlocking of the letter flap can be carried out instantaneously. There is no impeding of the opening of the door and a further advantage is that it is easy to tell at a glance from a distance from the inside whether the locking flap is in the locking or unlocking position.

Because no component is detached when the device is unlocked, it will always be ready for use, even if only used on rare occasions such as only on Bonfire Night.

Whilst the invention has been described with reference to particular features of the illustrated embodiment, many variations and modifications thereof are possible within the scope of the invention.

Naturally, the apparatus may be constructed from any suitable materials including those materials conventionally used for letter flaps such as polished brass and finished aluminium.

CLAIMS

1. A lockable letter flap apparatus comprising a letter plate having a letter slot therein, a

hinged letter flap biased to close said letter slot, a support structure extending from the letter plate to beyond the letter flap and mounting a locking member for pivoting movement between a locking position in which a portion of the locking member lies adjacent an edge region of the letter flap so as to block hinging movement thereof from the slot closing position of the letter flap, and an unlocking position in which the hinging movement of the letter flap is unobstructed.

2. Apparatus as claimed in Claim 1, wherein the letter flap is hinged to the letter plate along one edge of the letter flap.

3. Apparatus as claimed in Claim 1 or Claim 2, wherein the locking member is itself a flap.

4. Apparatus as claimed in Claim 3, wherein in the locking position, such a locking flap lies substantially at right angles to the letter flap.

5. Apparatus as claimed in Claim 3 or Claim 4, wherein in the unlocking position, the locking flap lies substantially parallel to the letter flap.

6. Apparatus as claimed in any preceding claim, wherein the support structure comprises a pair of support arms extending substantially perpendicular to the letter plate.

7. Apparatus as claimed in Claim 6, wherein each support arm is mounted to the locking plate in such a manner that the arm may be pivoted to lie generally parallel to the locking plate for packing and transport.

8. Apparatus as claimed in any preceding claim, wherein the letter flap is provided with one or more support members projecting from that face of the letter flap more remote from the letter plate and locating beneath the locking member to support the locking member in the locking position.

9. Lockable letter flap apparatus substantially as hereinbefore described with reference to and as illustrated in the accompanying drawings.