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(56) Documents Cited:
DE 029909759 U **DE 029613863 U1**
DE 102005034828 A1 **FR 002610811 A1**
US 7178717 B1 **US 5333782 A**
US 4724999 A **US 1810769 A**
US 1233972 A

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Other: **Online: EPODOC, WPI**

(54) Abstract Title: **Mail box with hinged front panel.**

(57) A mail box 10 comprises a rear portion 12 adapted to be fastened to a support and an opening front portion 14, hinged to the rear portion. The front panel comprises a front wall 28 and a base or floor 34. The front portion 14 can rotate to an open position and may comprise a latching key lock 44 and a mail slot. The mail slot may be protected by spring biased cover and a flange, shelf or plate extending inwardly along a lower edge of the slot. A top panel or roof may slope downwardly from the rear panel and may overhang the front wall.

Figure 2

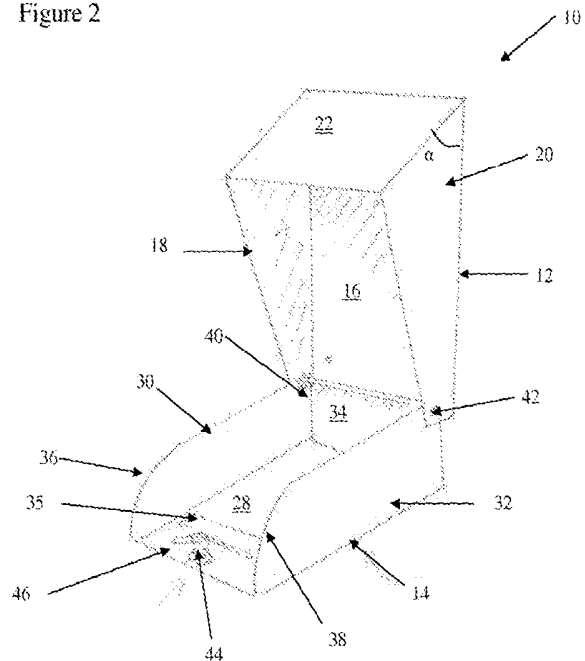


Figure 1

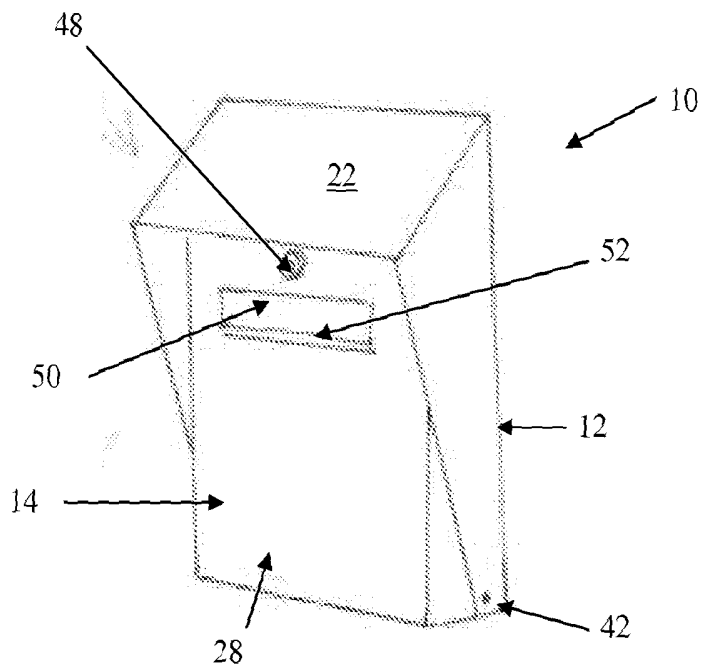


Figure 2

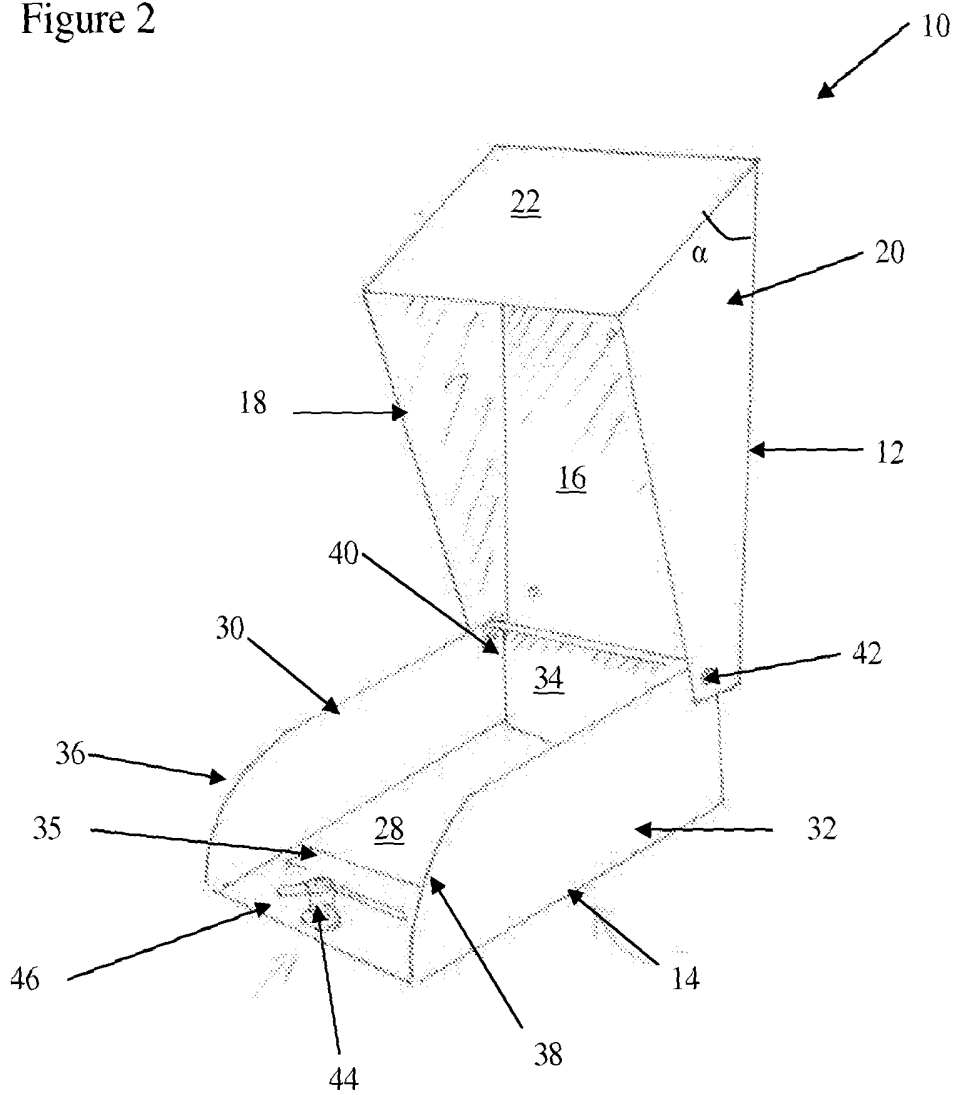


Figure 3

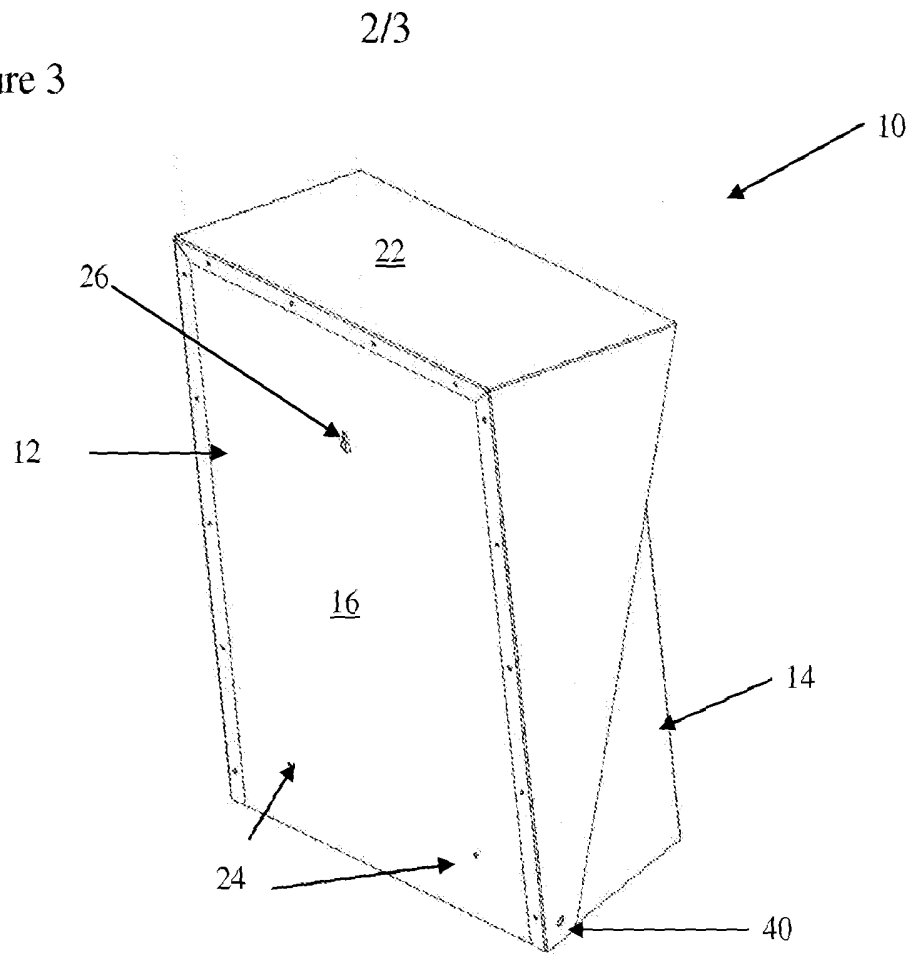


Figure 4

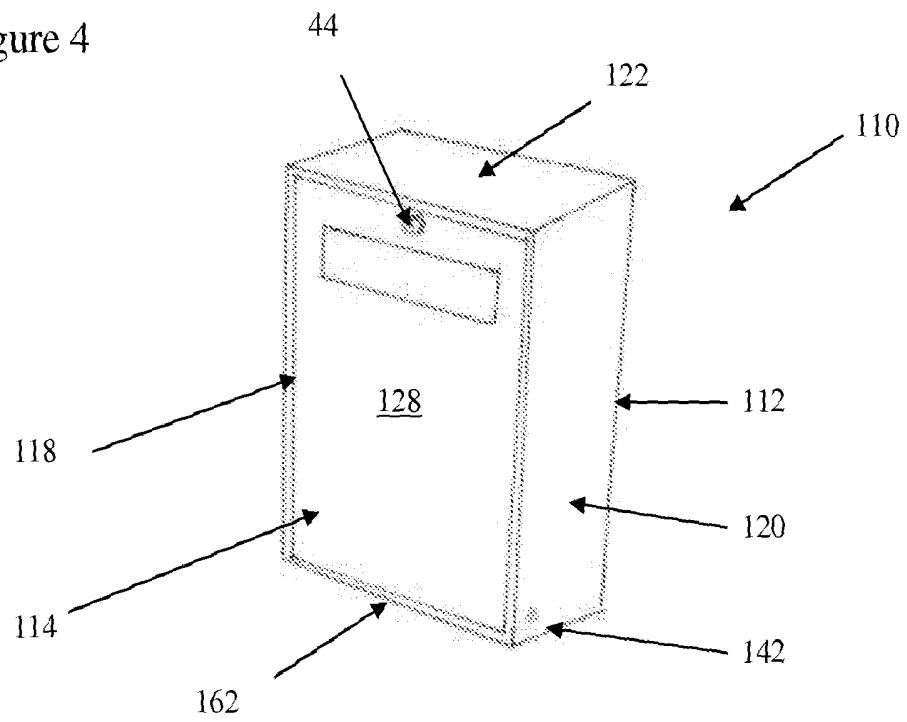
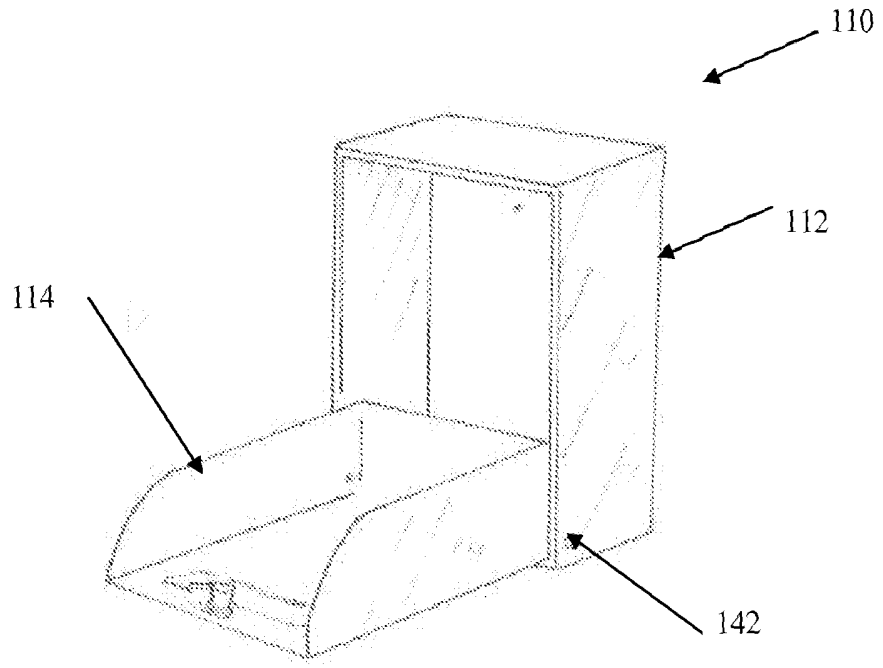


Figure 5



Mail Box

The present invention relates to a mail box and particularly, but not exclusively, to a mail box for securely receiving and retaining mail until the mail box can be emptied.

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A problem associated with mail boxes, both for indoor and outdoor use, is that the mail box can be difficult to empty, particularly for people with impaired movement, because it is usual to have to reach inside the mail box to remove the mail inside.

10 Furthermore, some mailboxes for outdoor use, do not protect the mail sufficiently well from the elements and mail can become wet if left outside in the mail box during wet conditions.

15 It is an object of the invention to provide a mail box for indoor and outdoor use, which reduce or substantially obviate the above mentioned problems.

20 According to the present invention there is provided a mail box comprising a rear portion adapted to be fastened to a support and a front portion, the rear portion including a rear wall and a top cover, the front portion including a front wall and a base, the front portion being hinged to the rear portion and movable between a closed position in which the rear wall and front wall are disposed substantially parallel with one-another and an open position in which the rear wall and front wall are disposed non-parallel with one-another.

25 Preferably the rear portion has first and second side walls and the front portion has first and second side walls.

30 Preferably the front portion is hinged to the rear portion adjacent the base of the front portion, the pivotal axis of the hinge being parallel with a lower edge of the front wall of the front portion.

This provides the advantage that the front portion may hinge or fold out of the rear portion, thus providing unobstructed access for removal of mail items from the mail box.

Preferably a pair of pivot pins are provided, each pivot pin being disposed between respective adjacent side walls of the rear and front portions.

- 5 Preferably the top cover slopes downwardly from the rear wall towards the front portion. This allows rain water to run off the mail box.

Preferably the top cover protrudes beyond the front wall of the front portion, when the mail box is in a closed position. This provides enhanced weather-proofing.

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Preferably a lock is provided for retaining and locking the front portion to the rear portion. The lock may latch automatically on closing of the mail box.

The lock may be key operated.

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Preferably a slot is provided in an upper region of the front wall through which mail may be inserted into the closed mail box.

- 20 A flange may be provided inside the mail box on the rear face of the front wall, the flange extending along a lower edge of the slot.

A movable cover may be provided over the slot. Preferably the movable cover is biased to a closed position in which the cover lies substantially flat against the surface of the front wall.

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Preferably the front wall of the front portion is adapted to hinge to a substantially flat disposition when in the open position relative to the rear wall of the rear portion which is disposed in a substantially vertical disposition. Advantageously, any mail held in the mail box is presented in the opened front portion for ease of removal.

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For a better understanding of the present invention, and to show more clearly how it may be carried into effect, reference will now be made, by way of example, to the accompanying drawings, in which:

Figure 1 shows a schematic perspective front view of a first embodiment of mail box in a closed position;

Figure 2 shows a schematic perspective front view of the mail box of Figure 1 in an
5 open position;

Figure 3 shows a schematic perspective rear view of the mail box of Figure 1 in the closed position;

10 Figure 4 shows a schematic perspective front view of a second embodiment of mail box in a closed position; and

Figure 5 shows a schematic perspective front view of the mail box of Figure 4 in an open position.

15

Referring to Figures 1 to 3, a first embodiment of mail box is indicated generally at 10. The mail box 10 includes a rear portion 12 and a front portion 14, the front portion being hinged and movable between open and closed positions relative to the rear portion. With reference in particular to Figure 2, the rear portion 12 includes a
20 rear wall 16, first and second side walls 18, 20 and a top cover or hood 22. The rear wall 16 is rectangular in shape and has apertures 24 provided therethrough for attaching the mail box 10 to a support, for example, a wall or post, with screw fixings. A slotted screw aperture 26 comprising a larger aperture to receive the head of a screw fixing and a slot extending upwardly therefrom is provided in an upper region
25 of the rear wall 16 for receiving a screw head and screw shank in conventional manner.

The first and second side walls 18,20 extend perpendicularly from the side edges of the rear wall 16. The hood 22 is substantially rectangular and extends from the upper
30 edge of the rear wall 16, downwardly at an angle α to the rear wall. The angle α is typically around 60°. The side walls 18,20 extend downwardly from the hood 22, becoming narrower as they reach the bottom of the mail box, level with the lower edge of the rear wall 16. The lower edge of each side wall 18,20 extends substantially perpendicularly away from the rear wall 16.

The front portion 14 includes a front wall 28, first and second side walls 30, 32 and a base 34. The front wall 28 is rectangular and has a horizontal slot 35 in an upper region, which serves as a delivery slot. A guard, in the form of an inwardly extending lip or flange may optionally be mounted along the lower edge of the slot 35 to act as a drip moulding and to inhibit pilfering from the mailbox, when closed and locked (as described below). The front portion 14 is constructed substantially as an open-ended tray for supporting mail, when the mail box 10 is in the open position as shown in Figure 2. The first and second side walls 30, 32 and the base 34 are substantially rectangular, but the upper edges of the side walls 30,32 are curved downwardly at 36, 38 away from the front wall, to enable the front portion to close to the rear portion 12 without fouling on the sloping hood 22.

The front portion 14 is pivotally mounted, or hinged, to the rear portion about pivot pins 40,42. The pivot pins 40,42 are axially aligned and are mounted in the respective side walls 18,20 of the rear portion 12, and extend through and pivotally support the side walls 30,32 of the front portion 14. The central axis of the pivot pins 40,42 lies parallel with the lower edge of the rear wall 16. The external width of the front portion 14 across the side walls 30,32 is narrower than the internal width of the rear portion 12 between the side walls 18, 20. Ideally the front portion 14 is a snug fit within the rear portion, so that it is free to move between the closed position, as shown in Figure 1, and the open position, as shown in Figure 2, but does not laterally float within the side walls 18,20 of the rear portion 12.

A cylinder lock 44 is mounted in an upper region of the front wall 28, above the slot 36, and has a locking arm 46, which engages with a tab or projection (not shown) provided on the underside of the hood 22. A keyhole 48 is provided in the face of the front wall 28. In an alternative embodiment, not shown, the lock may have a sprung latch which locks automatically on closing of the mailbox.

Optionally a spring loaded cover 50 (shown in Figure 1) can be provided over the slot 35 for extra weatherproofing, the cover having a drip bead 52. Ideally the cover is mounted internally of the front wall 28 of the front portion 14, but may be mounted externally, if desired. The spring loading biases the cover into contact with the front

wall 28. The mail box may be made from metal, plastics or wood or any other suitable material, but is ideally fabricated from sheet metal using conventional techniques of folding, riveting and/or welding. When the mail box is in the closed position, as shown in Figures 1 and 3, the respective first and second sides of the front portion 14 and rear portion 12 overlap one-another to create a substantially sealed box, which is weather resistant and substantially vandal proof.

When the mail box is in a closed position, as shown in Figure 1, mail can be inserted into the box through the slot 35. The cover 50 pivots along its upper edge and simply moves upwardly into the mail box under the force of the mail advancing through the slot 35. In the arrangement with the cover on the outside of the mail box, the cover has to be manually lifted to allow mail to pass through the slot 36 and hence is a less desirable arrangement.

When it is desired to open the mail box 10 to retrieve mail therein, the lock is unlocked using a key and the front portion 14 falls forward to the position shown in Figure 2. The front portion can be guided by hand as it rotates, particularly if there is a considerable amount of mail in the mail box. Any mail contained within the mail box 10, will have been supported on the base 34, and as the base rotates, the mail rotates with it, until it is disposed in a position lying flat on the inside of the front wall 28. Rotation of the front portion 14 is stopped by the base 34 abutting against a supporting wall or post or the like, onto which the mail box is mounted. The mail can be readily accessed from this position, because the mail is effectively presented to the person emptying the mail box 10 on a tray formed by the front portion 14. This is advantageous because the mail is presented substantially in front of the rear portion 12 and access to the mail is unimpeded.

An alternative embodiment of mail box is indicated generally at 110 in Figures 4 and 5. This embodiment of mail box 110 is intended for fitting into an aperture, for example in a wall. Similar reference numerals are used to designate parts in common with the first embodiment 10, but with the prefix "1".

Rather than the rear portion 12 being formed with a hood 22 for weatherproofing, the rear portion 112 is formed as a rectangular box with rectangular side walls 118,120 a

rectangular top 122 and a rectangular base 162. The front portion 114 is similar in construction and shape to the front portion 14. Pivot pins 140, 142 are mounted in similar fashion between respective first and second side walls of the rear and front portions 12,114, but the pivots are disposed towards the front edges of the first and second side walls 118, 120. This facilitates pivoting of the front portion 114 substantially completely in and out of the rear portion 112. As can be seen from Figure 4, the front wall 128 of the front portion 114 lies flush with the front edges of the side walls 118, 120, top 122 and base 162 in the closed position. In this embodiment, a stop means provided inside the mail box 110 prevents rotation at the appropriate position, when the front wall 128 is substantially horizontal.

The mail boxes 10,110 are simple to construct, secure and simple to operate, with little or no maintenance being required. The mail box 10 eliminates the need for a lifting flap or weatherproof side opening door, although a sprung flap can optionally be provided if desired, as explained above. The inside of the mail boxes 10,110 is uncluttered, allowing the free-fall of mail through the slots 36, 136 and simple collection of items deposited.

CLAIMS

1. A mail box comprising a rear portion adapted to be fastened to a support and a front portion, the rear portion including a rear wall and a top cover, the front portion including a front wall and a base, the front portion being hinged to the rear portion and movable between a closed position in which the rear wall and front wall are disposed substantially parallel with one-another and an open position in which the rear wall and front wall are disposed non-parallel with one-another.
2. A mail box as claimed in claim 1, in which the rear portion has first and second side walls.
3. A mail box as claimed in claim 1 or claim 2, in which the front portion has first and second side walls.
4. A mail box as claimed in any one of claims 1 to 3, in which the front portion is hinged to the rear portion adjacent the base of the front portion, the pivotal axis of the hinge being parallel with a lower edge of the front wall of the front portion.
5. A mail box as claimed in claim 4, when dependent on claims 2 and 3, in which a pair of pivot pins are provided, each pivot pin being disposed between respective adjacent side walls of the rear and front portions.
6. A mail box as claimed in any one of claims 1 to 5, in which the top cover slopes downwardly from the rear wall towards the front portion.
7. A mail box as claimed in any preceding claim, in which the top cover protrudes beyond the front wall of the front portion, when the mail box is in a closed position.
8. A mail box as claimed in any preceding claim, in which a lock is provided for retaining and locking the front portion to the rear portion.

9. A mail box as claimed in claim 8, in which the lock latches automatically on closing of the mail box.

10. A mail box as claimed in claim 8 or 9, in which the lock is key operated.

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11. A mail box as claimed in any preceding claim, in which an open slot is provided in an upper region of the front wall through which mail may be inserted into the closed mail box.

10 12. A mail box as claimed in claim 11, in which a flange is provided inside the mail box on the rear face of the front wall, the flange extending along a lower edge of the slot.

15 13. A mail box as claimed in claim 11 or claim 12, in which a movable cover is provided over the slot.

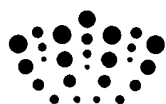
14. A mail box as claimed in claim 13, in which the movable cover is biased to a closed position in which the cover lies substantially flat against the surface of the front wall.

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15. A mail box as claimed in any preceding claim, in which the front wall of the front portion is adapted to hinge to a substantially flat disposition when in the open position relative to the rear wall of the rear portion which is disposed in a substantially vertical disposition.

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16. A mail box substantially as claimed herein with reference to and as illustrated in Figures 1 to 3, and 4 and 5 of the accompanying drawings.



Application No: GB0816641.5

Examiner: Dr Michael Gooch

Claims searched: 1-16

Date of search: 11 December 2008

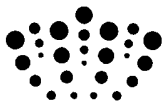
Patents Act 1977: Search Report under Section 17

Documents considered to be relevant:

Category	Relevant to claims	Identity of document and passage or figure of particular relevance
X	X: 1-5, 7, 8, 10, 15. Y: 9	DE29909759 U (BURG) See Fig 2.
	1-5	DE29613863 U1 (VELTE) See Figures.
	X: 1-5, 8, 10, 15. Y: 9	US5333782 A (FRAUENBERGER) See figure.
	1-5, 15	US 1810769 A (JADEN) See Fig 2.
	X: 1-11, 13-15. Y: 12, 14	US 1233972 A (BRYFOGLE) See figures.
	X: 1-8, 10, 11, 15. Y: 9	DE102005034828 A1 (LOH) See Figs 1 & 2.
	12	US 4724999 A (FITZGERALD) See flange 32.
	14	FR 2610811 A1 (GUILLOU) See spring biased flap 10.
	9	US 7178717 B1 (LINDELL) See latch 44.

Categories:

X	Document indicating lack of novelty or inventive step	A	Document indicating technological background and/or state of the art.
Y	Document indicating lack of inventive step if combined with one or more other documents of same category.	P	Document published on or after the declared priority date but before the filing date of this invention.
&	Member of the same patent family	E	Patent document published on or after, but with priority date earlier than, the filing date of this application.



Field of Search:

Search of GB, EP, WO & US patent documents classified in the following areas of the UKC^X :

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Worldwide search of patent documents classified in the following areas of the IPC

A47G

The following online and other databases have been used in the preparation of this search report

Online: EPODOC, WPI

International Classification:

Subclass	Subgroup	Valid From
A47G	0029/12	01/01/2006