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54 Improvements in or relating to containers.

57 A container has a pivotally mounted door 16 which is releasably secured in a closed position by resilient latches 20, 21 co-operating with an abutment wall 22. An elongate key 40 is inserted through an aperture 32 in the container and guided in a channel 25. Surfaces 42, 44 on the key are operable to deflect latches 20, 21 and allow the door to be opened.

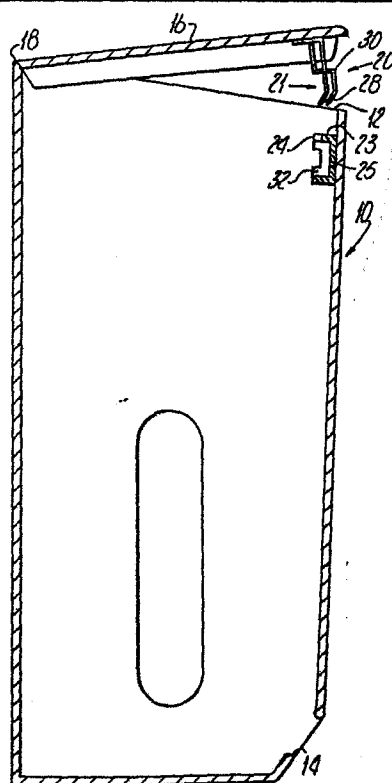


Fig. 2.

IMPROVEMENTS IN OR RELATING TO CONTAINERS

The invention relates to a container, and more particularly to, but not exclusively to a container which comprises a dispenser for rolled web material, such as toilet tissue or paper towel, the dispenser  
5 being adapted to hold one or more rolls of the web material.

The main problem associated with providing a supply of toilet tissue or rolled paper towel in public lavatories and washrooms is the  
10 likelihood of vandalism of the dispensers with the result that the dispenser's contents can be stolen. Although it is desirable for a dispenser to be proof against vandalism and theft, there are the additional requirements that the dispensers should be cheap to  
15 produce, readily refillable by a janitor and have no convoluted surfaces so that it may be easily kept clean, in the interests of hygiene.

Various thief-proof dispensers are known but these are often complicated and therefore expensive to manufacture. The simplest  
20 type of thief-proof dispenser includes a door which may be opened to enable the dispenser to be loaded with paper rolls, for instance, with this door being lockable by a conventional lock and key. Although relatively cheap to produce, such a dispenser suffers the disadvantages that the lock may become jammed and that the lock does  
25 not present a perfectly smooth surface and therefore is not readily cleaned.

The present invention seeks to avoid or minimize the above difficulties and disadvantages.

30 According to the invention there is provided a container having an aperture therein providing access to the interior of the container, a door for closing the aperture, and closure means for releasably

securing the door in its closed position; the closure means comprising a plurality of latches adapted for inter-engagement with abutment means when the door is in its closed position, an elongate key provided with a plurality of unlocking surfaces which are  
5 mutually staggered relative to the longitudinal axis of the key, and key guide means provided on said container; the key being movable along said axis, guided by said guiding means, to a position wherein the unlocking surfaces are operable to deflect respective latches from engagement with the abutment means to enable the door to be  
10 opened.

This is a particularly simple lock where the key is simply moved axially without the need to rotate it to release the latches. The lock thus has few moving parts and is extremely simple, and is  
15 therefore unlikely to become jammed and will be cheap to manufacture.

Advantageously, the closure further comprises an opening for providing access of the key to the guiding means. The latches are preferably mutually staggered, the latches being disposed  
20 progressively nearer said axis the further they are from the opening, the unlocking surfaces on the key being disposed progressively further from the axis of the key in the direction towards its end which is intended to be first inserted into the opening. Thus, the unlocking surfaces at the insertion end of the key are free to go  
25 past those abutment means nearer the opening and the key is only operable to release all the latches once it is fully home. By being staggered, the latches are simultaneously releasable only by a suitably shaped key having the appropriate unlocking surfaces, and would not be released by a straight, readily available implement such  
30 as a pencil or nail file. The configuration of the opening gives further protection against unauthorised release of the latches.

In a preferred embodiment of the invention, the guiding means comprise a channel, the abutment means comprise a wall of said channel and the key is of complementary shape to that of the wall, whereby, on inserting the key into the channel, the unlocking  
5 surfaces thereon are flush with the free edge of said wall, so that the latches are urged out of the channel by the unlocking surfaces to be released from engagement with the channel wall.

Preferably the channel is adapted to receive the key for sliding  
10 movement therealong.

The container may comprise a dispenser for rolled web material adapted to hold one or more rolls of the web material, the dispenser having an aperture through which the rolls may be loaded into the  
15 dispenser, and a door releasably secured by the closure to close said aperture.

Although the invention is specifically described with reference to a container comprising a dispenser for rolled web material, clearly the  
20 invention is equally applicable to other containers, and particularly to those containers to be used under similar conditions, with the danger of vandalism and theft. Examples of such containers are dispensers for interleaved sheets of toilet tissue, for linen roller towels and soap dispensers.

25 An embodiment of the invention will now be described, by way of example only, and with reference to the accompanying drawings wherein:

Figure 1 is a partial perspective view of a container in accordance  
30 with the present invention, with the door fully open;

Figure 2 is a longitudinal section of the whole container, taken along the line II-II of Figure 1, with the door partially open;

5 Figure 3 shows a detail of the underside of the door of the container shown in Figures 1 and 2; and

Figures 4 and 5 show an edge and a plan view respectively of the key for the container of the present invention.

10 Referring to Figures 1 and 2 of the drawings, there is shown a container of the type suitable for dispensing rolled web material, such as toilet tissue. The container comprises a housing 10, having at its upper end an aperture 12 through which the paper rolls can be loaded into the housing 10. The paper is dispensed through an  
15 opening 14 at the lower end of the housing 10.

For the sake of hygiene and appearance, the loading aperture 12 is closable by a door 16, pivotally connected to the housing 10 along an axis 18 along one edge of the aperture 12, and swingable between an  
20 open position (Figure 1) in which the housing can be loaded, and a closed position, in which it completely shuts off the aperture 12. More importantly, however, in order to render the housing 10 thief-proof, the door 16 is releasably lockable in its closed position, by means of a closure.

25 The closure comprises a plurality, three in the illustrated embodiments, of latches 20, 21, which are inter-engageable, when the door 16 is in its closed position, with abutment means comprising a lip or wall 22. The wall 22 forms one the flanks of a U-shaped  
30 channel member 25 which is secured to one wall of the housing 10, so that the wall 22 is spaced just below the aperture 12 of the housing 10. The latches 20, 21 are secured to the door 16, and are spaced apart and generally mutually aligned. They are disposed adjacent

the free edge 26 of the door 16 which is remote from the hinge axis 18 along which the door 16 is pivoted on the housing. Each of the latches 20, 21 is of generally hooked-shaped cross-section, having an inclined portion 28 and a nose 30. The latches are made of a  
5 resilient material, e.g. a tough plastics material such as nylon, and are biased so that their noses 30 are urged in the direction of the free edge 26 of the door 16. In use, as the door 16 is closed, the inclined portions 28 of the latches 20, 21 engage the free edge of the wall 22, urging the latches towards the door hinge 18, until the  
10 noses 30 of the latches pass the wall 22 and snap into engagement underneath the wall 22. In this position, the door is locked in its closed position. The door 16 is opened by slidingly inserting a key 40 (Figures 4 and 5) in a direction of the arrow A (Figure 1) through an opening 32 in the side wall of the housing 10 into the channel  
15 member 25. To further safeguard the container against thieving, the closure is arranged so that a readily available implement such as a nail file or pencil would not be able to act as the key to unlock the door 16. Accordingly, the latches 20, 21 are not disposed so that they are fully axially aligned but instead are staggered (Figure 3)  
20 with one of the latches 21 being spaced slightly further from the free edge 26 of the door than the other two latches 20. The abutment means, in the form of the wall 22 is of complementary shape to the arrangement of the latches, so that all the latches 20, 21 will be engaged beneath the wall 22 when the door is closed. Thus, the wall  
25 22 comprises a portion 23 which extends for approximately two-thirds of its length, and a portion 24, extending for the other third. The portions 23, 24 act respectively as the abutment means for inter-engagement with the latches 20, 21.

30 The key 40 is generally spatula-shaped and comprises unlocking surfaces 42, 44 which lie in planes substantially parallel but spaced from one another, the surface 44 being on a U-shaped bead 46 extending around the edge at one end of the key. The key further

comprises an integral handle 48, its extent being defined by shoulders 50 on each edge of the key.

5 The opening 32 in the housing wall is U-shaped, the arms of which U-shaped opening are adapted to receive the bead 46. The opening 32 provides a limited access to the channel member 25 and by preventing the insertion of a user's finger to the channel member, the thief-proof qualities of the container are further enhanced. The opening 32 is flush with the container wall, so that the container  
10 can be kept clean and therefore hygienic. As well as acting as a limited access means, the opening 32 ensures that the key is correctly inserted into the channel member 24. The opening further acts to locate positively the key in the channel member 25 while it is being slid therealong.

15 The key is inserted through the opening 32 with its bead 46 facing toward the interior of the housing 10, so that the bead can be received through the U-shaped opening 32. The key is slid along the channel member 25 which guides the key, until the shoulders 50 abut  
20 the outer surface of the housing, at which point the key is fully home. In this position of the key within the channel member 25, the unlocking surfaces 42 and 44 of the key 40 are flush with the free edges of portions 23 and 24 respectively of the wall 22. As the key moves into the channel member 25 its surface 42 moves past latch 21  
25 without disengaging it from beneath the portion 24 of the wall 22, but surface 42 urges the two latches 20 against their bias and away from under the portion 23 of the wall, whilst the surface 44 engages the latch 21 to urge it in the direction opposite its bias direction out from under portion 24 of the wall 22. Thus, once the key 40 is  
30 fully home, all three latches 20, 21 are simultaneously released.

For ease of insertion of the key 40, the key is provided with a camming surface 52 at its end remote from the key head 48 and with a

surface 54 at the start of the unlocking surface 44, with respect to the direction of insertion. The camming surfaces 52 and 54 respectively engage cam surfaces 56 and 58 on the latches 20 and 21, thus facilitating the unlocking action.

5

Clearly, the invention is not limited to the embodiment described. It would be possible to have only two latches, or more than three. It would also be possible to arrange some of the latches on the housing and some on the door with corresponding abutment means being disposed on the door and housing respectively.

10

CLAIMS:

1. A container having an aperture therein providing access to the interior of the container, a door closing the aperture, and closure means for releasably securing the door in its closed position; the  
5 closure means comprising a plurality of latches adapted for inter-engagement with abutment means when the door is in its closed position, an elongate key provided with a plurality of unlocking surfaces which are mutually staggered relative to the longitudinal  
10 axis of the key, and key guide means provided on said container; the key being movable along said axis, guided by said guiding means, to a position wherein the unlocking surfaces are operable to deflect respective latches from engagement with the abutment means to enable the door to be opened.

15

2. A container as claimed in Claim 1, wherein the door is pivotally mounted adjacent a first edge thereof and wherein the latches are supported on the door adjacent to and generally arranged along a second free edge thereof.

20

3. A container as claimed in Claim 1 or 2, wherein the abutment means comprises a wall supported on the inside of the container and extending in length generally parallel to the first and second edges of the door.

25

4. A container as claimed in Claim 3, wherein the latches comprise resilient elements which, as the door is closed, are deflected past the wall such that at least a part of the resilient elements then engages the side wall remote from the aperture so as to  
30 lock the door.

5 A container as claimed in any preceding claim wherein an opening is provided in the container whereby the key is inserted into the guide

means the opening being configured so as to require correct orientation of the key.

5 6. A container as claimed in Claim 5, wherein at least some of the latches are mutually staggered so that those latches further from the opening are disposed nearer to the free edge of the door.

10 7. A container as claimed in Claim 6, wherein the profile of the wall and of the key are staggered in complementary fashion to the latches such that when the key is fully inserted in the guide means the unlocking surfaces become flush with the free edge of the wall.

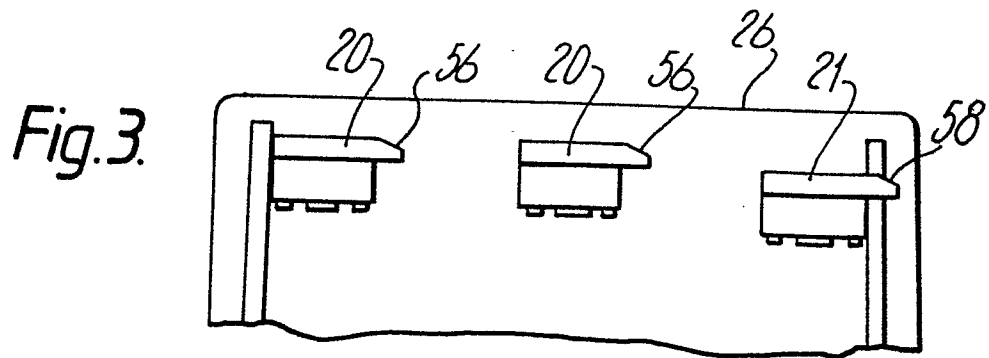
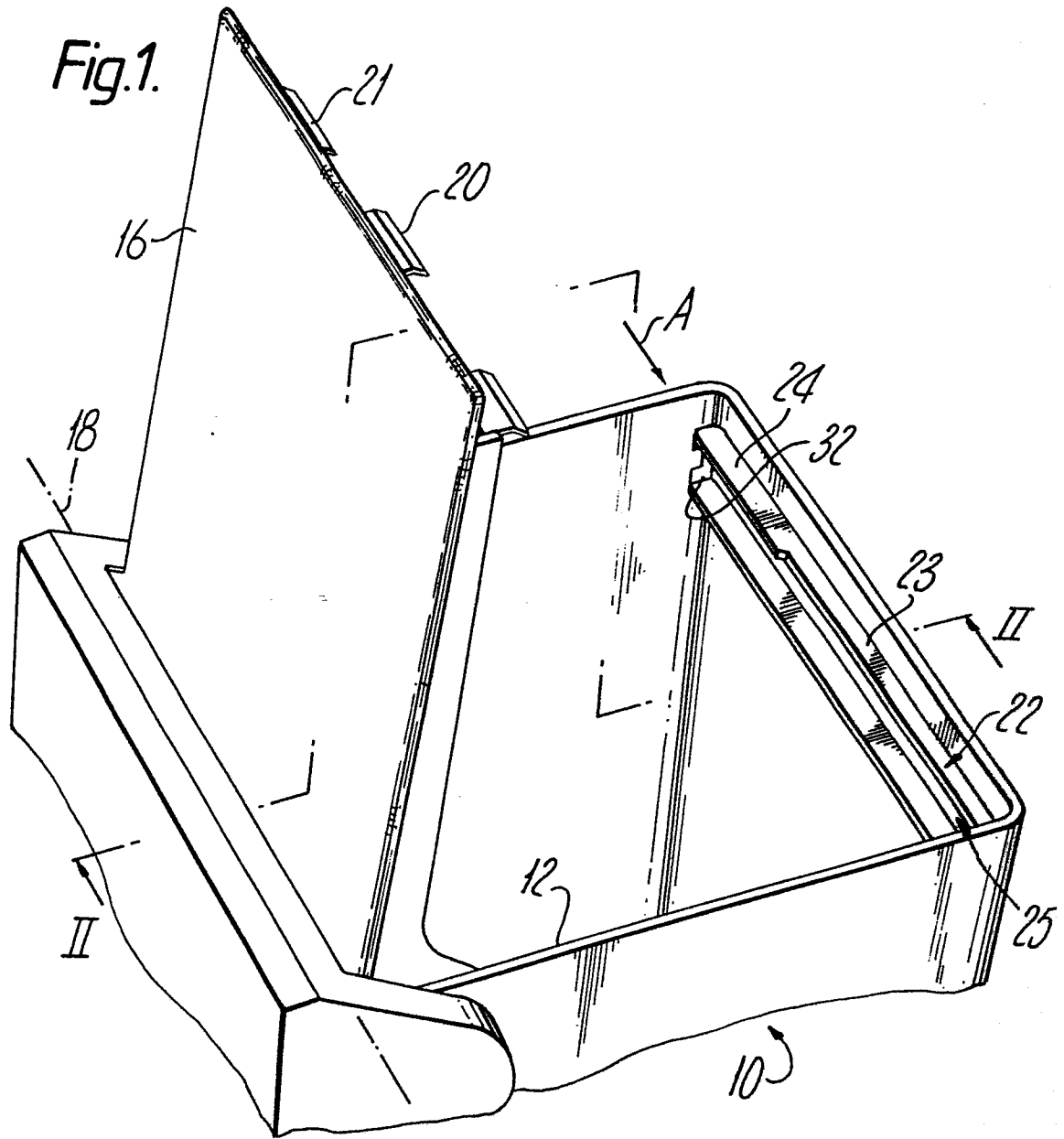
15 8. A container as claimed in any preceding claim wherein the guide means comprises a U-shaped channel mounted on the inside of the container and extending adjacent an edge of the aperture; the abutment means comprising a wall of said channel and wherein on inserting the key into the channel the latches are urged out of the channel by the unlocking surfaces and are released from engagement with the channel wall.

20 9. A container as claimed in any preceding claim, wherein each unlocking surface on the key is preceeded, in its direction of operable movement, by a cam surface engageable with a corresponding cam surface on the or each latch it is operable to release.

25 10 A container as claimed in any preceding claim comprising a dispenser for web material, the dispenser having an aperture through which material may be loaded into the dispenser, and a door releasably secured by the closure means to close said aperture.

30 11. A container substantially as described herein with reference to the accompanying drawings.

1/2



2/2

Fig.2.

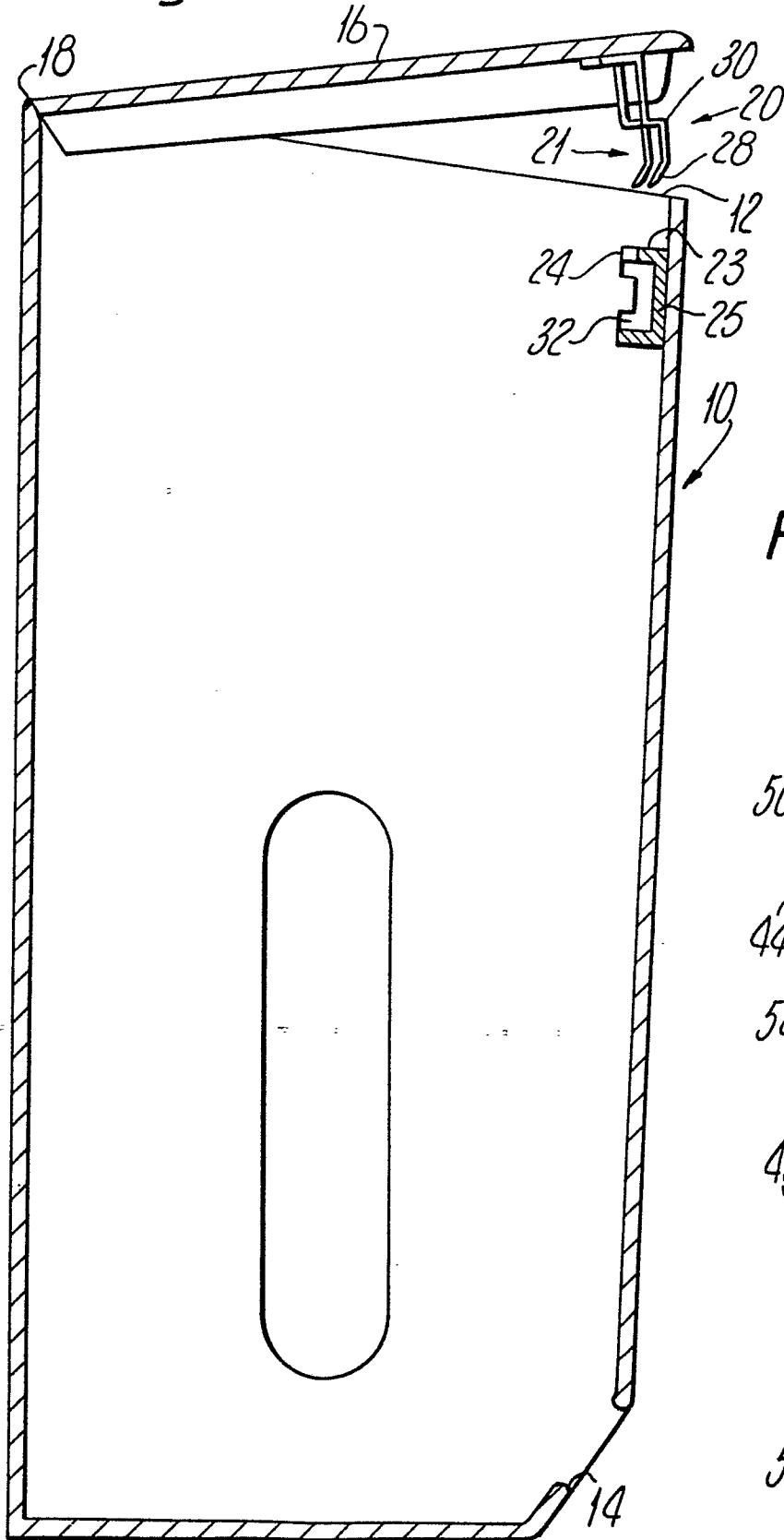


Fig.4.

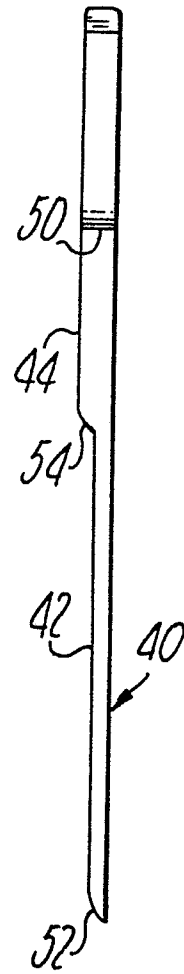


Fig.5.

