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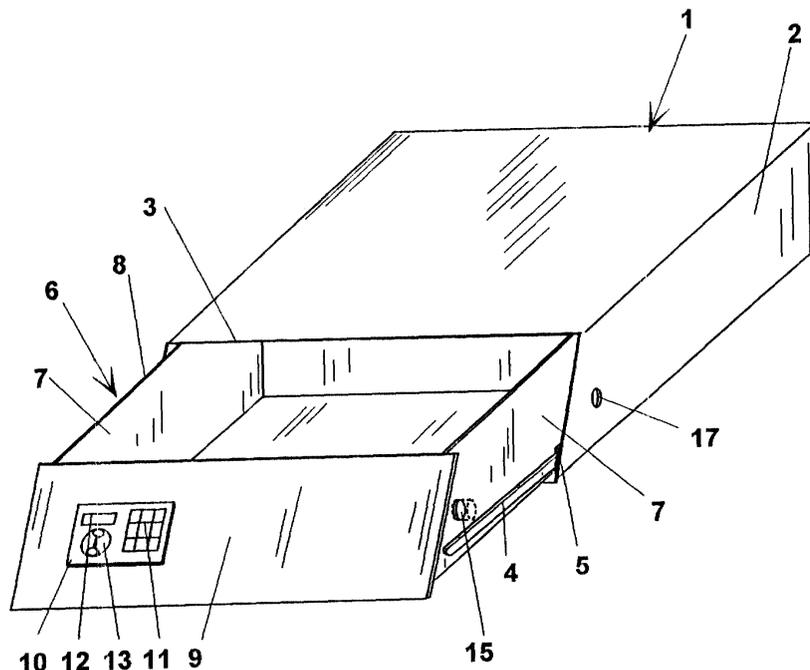
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(54) **Structure of strongbox, in particular suitable for being inserted in a piece of furniture**

(57) A structure of strongbox comprising a first frame (1), of box-like parallelepiped shape, with side walls (2) and a front opening (3) through which a second box-like frame (6) can be slidingly introduced sliding on guide (4,5), or drawer, with top opening (8), having a front wall (9) on which a control electronic device (10) is provided comprising a keyboard (11), a display (12) and an auxiliary lock (13). The control electronic device (10) operates bolts (14,15) which, in use, in a withdrawn po-

sition allow the sliding of the drawer, whereas when in the locking position they engage with the side walls (2) of the first frame (1), protruding from the side walls (7) of the drawer (6). The structure of strongbox can be easily installed in a piece of furniture (20) or in a closet, replacing a normal drawer, and can be easily substituted or mounted without the need of masonry work. The front wall (9) of the drawer (6) is inclined in order to provide an easy access to the display (12) and the keyboard.

Fig. 1



DescriptionField of the invention

[0001] The present invention relates to a structure of strongbox, in particular, but not exclusively, suitable for being inserted in a piece of furniture, both for hotels and the like and for private use.

Description of the prior art

[0002] Structures of strongbox are known having normally parallelepiped shape closed by a wing, comprising a lock, normally a combination lock.

[0003] These strongboxes are usually walled up or, alternatively, firmly connected to a wall.

[0004] The use of small strongboxes is frequent in many hotels, arranged normally in the rooms so that the customers can keep safely their valuables.

[0005] The introduction of strongboxes in the rooms by the hotels is an additional masonry work and requires a change of the furniture of the rooms same.

[0006] A similar problem occurs when a strongbox has to be installed into private houses, and the more the masonry works are complex, the more the problem is felt.

[0007] The problem is also felt of arranging tile strongbox in certain places, which are however easily moveable in other places without the need of masonry work.

[0008] In hotels small strongboxes are also known fixed to pieces of furniture or arranged in closets. However, they are anaesthetic and necessarily small, and then cannot be used for containing briefcases, laptop computers and other valuables of analogous size.

Summary of the invention

[0009] It is therefore object of the present invention to provide a structure of strongbox, which can be installed in order to overcome the above described drawbacks.

[0010] It is another object of the invention to provide a structure of strongbox that can be installed into pieces of furniture, so that there is not the need of masonry work, and a sufficient space for objects as briefcases, laptop computers, cameras, and other valuables of medium size.

[0011] It is a particular object of the invention to provide a structure of strongbox that can be installed into pieces of furniture and that, at the same time, assures safety, at least the same as existing strongboxes for the above described valuables.

[0012] These and other objects are achieved by the structure of strongbox according to the invention, whose characteristic is that it comprises:

- a first box-like frame with a side opening;
- a second box-like frame with an upper opening and suitable for being put into/extracted from said side

- opening of said first box-like frame
- guiding means for the mutual sliding between said first and second box-like frame;
- a lock for preventing the sliding of said second box-like frame when it is completely put into said first box-like frame;
- interface means for operating said lock from the outside.

[0013] Both the first and the second box-like frame have reinforced metal walls, whereby the strongbox cannot be forced easily.

[0014] Advantageously, the second box-like frame, or drawer, comprises an electronically programmable lock through a control unit, provided with a keyboard and a display, and that operates a plurality of side bolts that, in the locking position, engage with the walls of the first box-like frame.

[0015] Preferably, the interface means comprise a front wall inclined on the drawer, whereby it is possible an easy access by an user also when the drawer is arranged in a piece of furniture in a low position.

[0016] In a preferred embodiment the strongbox belongs to a chest of drawers having a structure wherein said first frame that in turn contains second frame is inserted at the top. The upper part of the chest of drawers has a top inclined portion that follows the front inclined part of the drawer.

Brief description of the drawings

[0017] Further characteristics and the advantages of the structure of strongbox according to the present invention will be made clearer with the following description of an embodiment thereof, exemplifying but not limitative, with reference to the attached drawings, wherein:

- figure 1 shows a perspective view of a structure of strongbox according to the invention in open position;
- figure 2 shows a perspective view of the structure of strongbox of figure 1 in closed position;
- figure 3 is a sectional view of the structure of strongbox of figure 1 at the level of the Lock with a diagrammatical view of a possible type of actuating mechanism of the lever of the bolts;
- figures from 4 to 6 show respectively an elevational side front view, an elevational side view and a top plan view of a chest of drawers having a structure wherein a strongbox according to the present invention is inserted;
- figure 7 shows a top plan view of the inner frame of the strongbox arranged in the chest of drawers of figures from 4 to 6.

Description of the preferred embodiments

[0018] With reference to figure 1, a structure of strongbox according to the present invention comprises a first frame 1, in particular a box-like shaped parallelepiped, with side walls 2 and a front opening 3.

[0019] In first frame 1, by means of guides 4 and 5, a second box-like frame 6, or drawer, slidably engages which also has a parallelepiped shape with side walls 7, an upper opening 8, a slightly inclined front wall 9 and on which a control electronic device 10 is provided comprising a keyboard 11, a display 12 and an auxiliary lock 13.

[0020] As shown in figure 3, the control electronic device 10 operates respectively two bolts 14 on the left and a bolt 15 on the right, through an inversion lever 16. Bolts 14 and 15, in use, when in the withdrawn position, allow the sliding of the drawer, whereas when in the locking position they engage with holes 17 of side walls 2 of first frame 1, protruding from the side walls 7 of drawer 6.

[0021] According to the present invention, the structure of strongbox can be easily installed in a piece of furniture, for example a closet, replacing a normal drawer.

[0022] This solution is particularly advantageous in hotel rooms since the strongbox can be easily substituted or mounted without the need of masonry work.

[0023] By means of device 10, of known type on the market, every user can set its own personal combination without problems.

[0024] Front wall 9 of drawer 6, as above said, is inclined in order to make display 12 easily readable, even if the strongbox is installed in a piece of furniture in lower position, so that the user has not to stoop down.

[0025] With reference to figures from 4 to 7, the strongbox belongs to a chest of drawers 20 having a structure wherein first frame 1 is integrated which in turn contains second frame 6 or drawer. Frame 1 is contained in the chest of drawers 20 between upper wall 21 and side walls 22. The upper part of the chest of drawers 20 has a portion 23 inclined downwardly that follows the front inclined part 9 of drawer 6. Under drawer 6, between side walls 22 and bottom 25 the chest of drawers 20 has normal drawers 24.

[0026] Inclined portion 9 is particularly advantageous because the chest of drawers 20, which can be a movable unit or can be arranged in a closet, has a conventional height and then the inclined control electronic device 10 allows an easy reading of the display and of the keyboard for typing in the combination.

[0027] The foregoing description of a specific embodiment will so fully reveal the invention according to the conceptual point of view, so that others, by applying current knowledge, will be able to modify and/or adapt for various applications such an embodiment without further research and without parting from the invention, and it is therefore to be understood that such adaptations and modifications will have to be considered as

equivalent to the specific embodiment. The means and the materials to realise the different functions described herein could have a different nature without, for this reason, departing from the field of the invention. It is to be understood that the phraseology or terminology employed herein is for the purpose of description and not of limitation.

10 Claims

1. A structure of strongbox, **characterised in that** it comprises:

- 15 - a first box-like frame with a side opening;
- a second box-like frame with an upper opening and suitable for being put into/extracted from said side opening of said first box-like frame;
- guiding means for the mutual sliding between said first and second box-like frame;
- 20 - a lock for preventing the sliding of said second box-like frame when it is completely put into said first box-like frame;
- interface means for operating said lock from the outside.

2. Structure of strongbox according to claim 1, wherein said box-like frame, or drawer, comprises a combination lock programmable through a control unit, provided with a keyboard and a display, and that operates a plurality of side bolts which, in the locking position, engage with the walls of the first box-like frame.

3. Structure of strongbox according to claim 2, wherein said second box-like frame, or drawer, has a front wall that is inclined downwardly, whereby it is possible an easy access by an user also when the drawer is arranged in a piece of furniture in a low position.

4. Chest of drawers comprising a plurality of drawers having inside

- 45 - a first box-like frame with an side opening;
- a second box-like frame with an upper opening and suitable for being put into/extracted from said side opening of said first box-like frame;
- guiding means for the mutual sliding between said first and second box-like frame;
- a lock for preventing the sliding of said second box-like frame when it is completely put into said first box-like frame;
- 50 - interface means for operating said lock from the outside.

5. Chest of drawers according to claim 4, wherein said box-like frame, or drawer, comprises a combination

lock programmable through a control unit, provided with a keyboard and a display, and that operates a plurality of side bolts which, in the locking position, engage with the walls of the first box-like frame.

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6. Chest of drawers according to claim 5, wherein said second box-like frame, or drawer, has a front wall inclined downwardly, whereby it is possible an easy access by an user also when the drawer is arranged in a piece of furniture in a low position.

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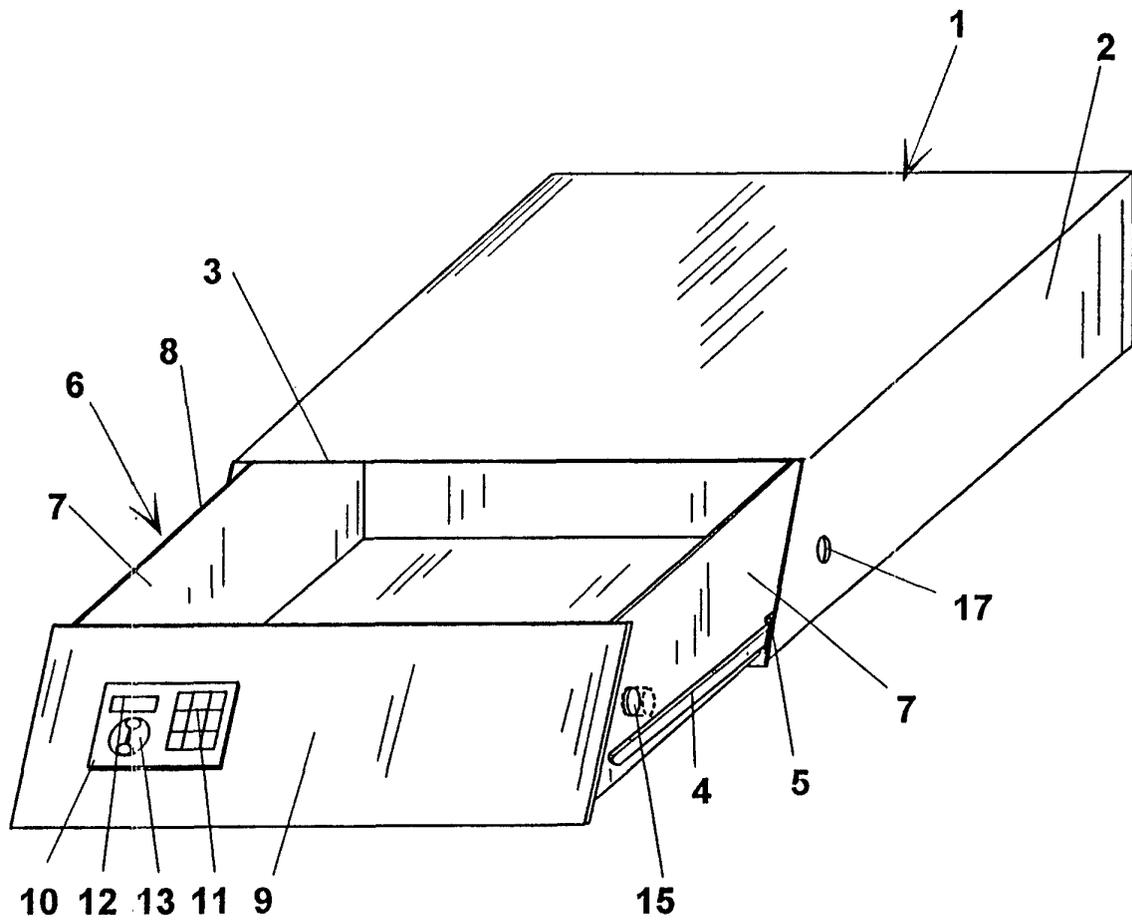
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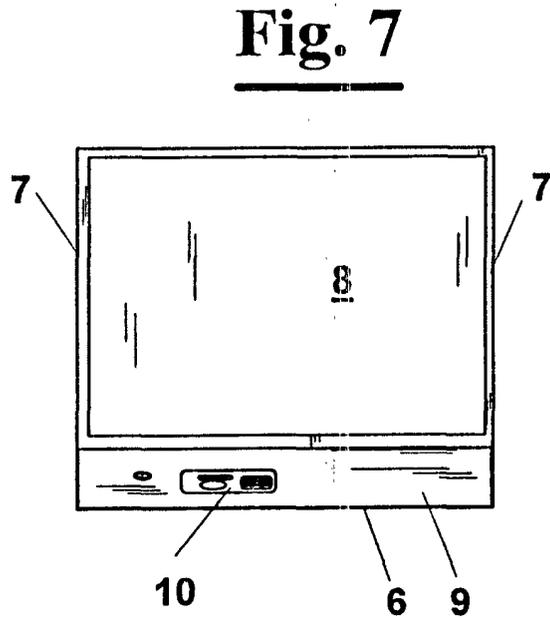
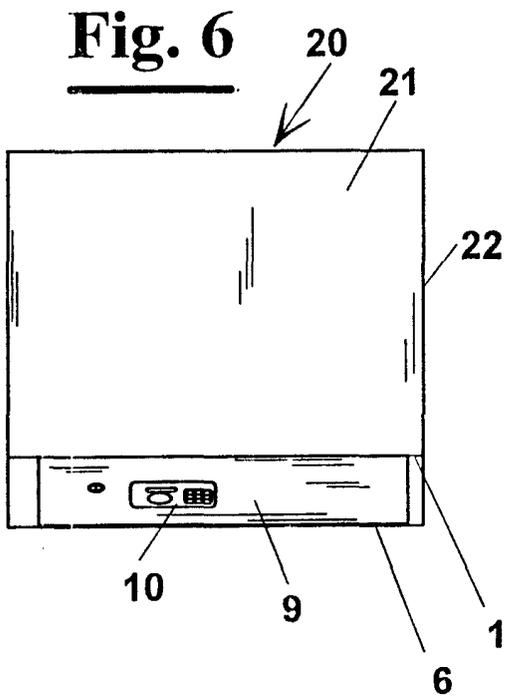
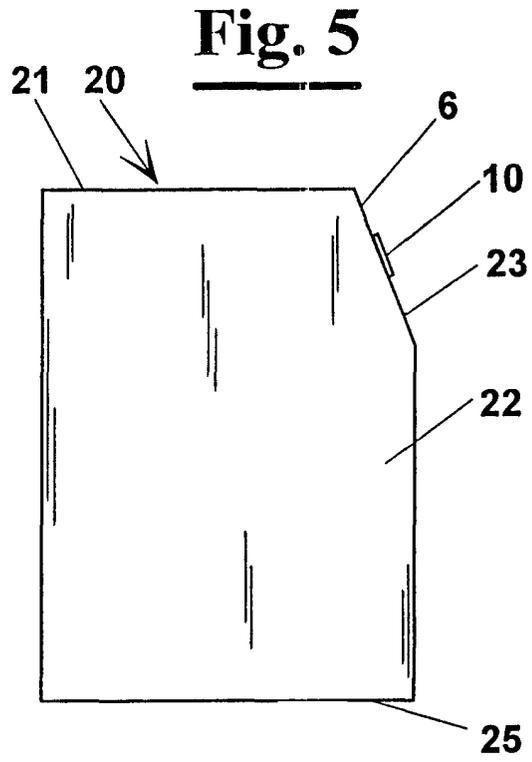
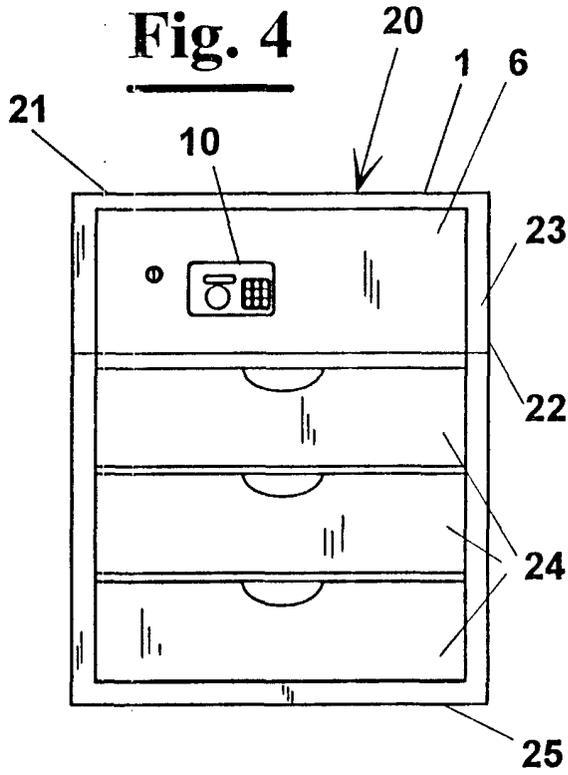
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Fig. 1







European Patent
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EUROPEAN SEARCH REPORT

Application Number
EP 00 10 3243

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Y	* column 4, line 12 - line 17 * * column 3, line 51 - line 56 * * column 4, line 45 - line 50 * * column 7, line 18 - line 44 * * column 10, line 22 - line 37; figures 3,6,7 *	2	
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The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 28 June 2000	Examiner Guillaume, G
CATEGORY OF CITED DOCUMENTS		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	
X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document			

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**ANNEX TO THE EUROPEAN SEARCH REPORT
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