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(54) **Sliding bars closure mechanism for locks and a lock provided with such mechanism**

Riegelverschlussmechanismus für Schlösser und mit einem solchen Mechanismus ausgestattetes Schloss

Mécanisme de fermeture avec barres coulissantes pour verrous et verrou doté d'un tel mécanisme

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FR-A- 1 067 271 **US-A- 5 688 000**

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Description

[0001] The present invention refers to a sliding bars closure mechanism for locks in general, in particular intended for use but not necessarily in combination with a cylinder lock for closing wardrobe doors.

[0002] Use of the conventional so called cylinder or pin locks for safety locks on wardrobe doors and furniture in general is already known. In such locks, a ratchet or a moveable catch inserted coaxially into a cylinder is capable of turning only when operated by the related key, thus triggering the simultaneous translation of one or more plate-shaped latches integrally joined to special closure mechanisms.

[0003] Usually, current closure mechanisms are made as metal bars made of flat iron sections, with an end provided with a hole for fastening the lock to the latch, while the other end is configured to engage with the blocking element joined to a wall of the furniture on which the door is mounted, so as to maintain it stably fixed in a closed position.

[0004] Each metal bar, especially if of substantial, is guided in its translation along the door by suitable guide elements fixed by means of screws against the internal wall of the of door itself, thus such guide elements being visible when the door is open. In addition, each metal bar requires at least a hole drilled at one of the two ends in order to be fixed to the related pin of the sliding latch integrated in the lock.

[0005] Therefore, it is clear how a closure system made in this manner requires application of various threaded fastening elements in order to be mounted on site and operate properly. Furthermore, such fastening elements require time and expertise in order to be applied.

[0006] Document FR 1 067 271 A discloses a sliding bars closure mechanism for a lock according to the preamble of claim 1, wherein the bars are directly fastened to the lock at one of their ends and configured to directly engage with the respective blocking element at the other end. Another sliding bars closure mechanism for a lock according to the preamble of claim 1 is disclosed, for example, in document US 5 688 000 A.

[0007] Therefore, it is one of the objectives of the present invention to provide a sliding bars closure mechanism for locks which can be applied on doors of furniture in general, particularly easy and quick to mount on site on the doors themselves, without requiring screws or other analogous fastening elements.

[0008] Another objective of the invention is to provide a sliding bars closure mechanism for locks in which all elements for guiding and/or securing the bars are concealed, thus enhancing the aesthetic appearance of the doors on which such lock and such mechanism are applied.

[0009] Further objective of the present invention is to provide a sliding bars closure mechanism for locks which is strong, silent and light, simple and economical to manufacture, and compatible with most locks present on the market at the same time.

[0010] These and other objectives according to the present invention are attained by making a sliding bars closure mechanism for locks as described in claim 1.

[0011] Further characteristics of the invention are described in the subsequent claims.

[0012] Characteristics and advantages of a sliding bars closure mechanism for locks according to the present invention shall be more evident from the following exemplifying and non-limiting description with reference to the schematic drawings attached wherein:

Figure 1 is a perspective view, partially in cross-section, of a sliding bars closure mechanism for locks according to the known art;
Figure 2 is a perspective view, partially in cross-section, of a sliding bars closure mechanism for locks according to the present invention, applied to the door of a piece of furniture in general;
Figures 3 - 5 are detailed perspective views of particulars of the mechanism shown in figure 2;
Figure 6 is an exploded view of the components of the mechanism shown in figure 2;
Figures 7 - 9 are perspective views of the single components of the mechanism shown in figure 2;
Figure 10 is an exploded perspective view of a connection component to the lock of the mechanism shown in figure 2;
Figures 11 - 13 are perspective views of other components of the mechanism shown in figure 2; and
Figure 14 is a perspective view of two different examples of embodiments of the guide elements of the mechanism shown in figure 2.

[0013] It should be clarified that, even though the figures and descriptions below always refer to a lock of the cylinder or pins type, not described in details in that it is well known in the background art, it should be clear that the sliding bars closure mechanism described herein can be applied to any type of lock currently on the market.

[0014] In particular, figure 1 shows a sliding bars closure mechanism according to the known art, applied to a lock 100 of the conventional cylinder type. The mechanism comprises a pair of metal bars 102 made of a substantially flat profile or half-round solid section fixed, at their proximal end, to the two opposite latches of the lock 100 by means of a dowel 104 inserted in a hole provided on the bar 102 itself. The distal end of each bar 102 instead is configured to engage with a respective blocking element 106 integrally joined to the walls 108 of a piece of furniture in general.

[0015] On the internal surface of the door 110 of the piece of furniture on which the lock 100 is fixed, metal or plastic elements 114 which serve as a guide for each bar 102 are integrally joined by means of screws 112, such elements 114 being made as links surrounding the body of the bar itself 102 externally.

[0016] When operated by the related key 116, the lock

100 is capable of translating both bars 102 at the same time in such a manner that their distal end engages with the blocking elements 106, as shown in figure 1, thus blocking the door 110 in a closed position. However, in such mechanism according to the known art, use of several fastening, guiding and securing elements, all exposed on the internal surface of the related door 110, is evident.

[0017] Now, with reference to figures 2 - 14 a sliding bars closure mechanism according to the present invention is shown. According to the example of embodiment illustrated, the mechanism comprises at least one bar 10 adapted to be fixed, at one of its proximal ends 10a, to the related sliding latch 12 of a lock 14, for example, of the so called cylinder or pin type.

[0018] The lock 14 is made in such a manner to be fastened in a non-removable manner to the internal surface of a door 16 (figure 2) hinged to a piece of furniture or furnishing element in general, so that such door 16 can be maintained in a closed position through the translation of the bar or bars 10 along the direction defined by its axis and the consequent engagement of the distal end 10b of the bar 10 itself with one or more blocking elements 20. Each blocking element 20, preferably made of plastic material is thus integrally joined, for example by means of threaded 22 (figure 11) or pressure 22' (figure 13) fastening means, to a fixed wall 18 of the piece of furniture itself. Alternatively, the blocking element 20 can also be made in such a manner to be mounted recessed into the thickness of the fixed wall 18 (figure 12) or it can be made in one piece with the pressure fastening means 22' (figure 13).

[0019] According to the invention, each bar 10 is composed of a hollow tubular section, that is provided with an internal chamber hollow and open at the opposite ends 10a and 10b of the section itself, which is manufactured through extrusion of plastic material and preferably has a rectangular-shaped cross-section.

[0020] Thus the bar 10 is fixed to the related latch 12 of the lock 14 through the interposition of at least one proximal coupling element 24, made of moulded plastic material, which can be snap-coupled to the proximal end 10a of the bar 10 itself. More precisely, the proximal coupling element 24 is provided with a portion 26 suitably shaped in such a manner to be inserted into the opening provided at the proximal end 10a of the bar 10. Therefore, on the portion 26 there are one or more teeth 28 which snap-engage, when such portion 26 is completely inserted into the abovementioned opening, with one or more holes 30 made at the proximal end 10a of the bar 10 itself. Lastly, the proximal coupling element 24 is provided with a plate-shaped portion 32 which can be coupled to the lock 14, for example by providing a hole 34 adapted to accommodate a dowel 34' provided on the latch 12.

[0021] In an analogous manner, inside the opening provided for at the distal end 10b of the bar 10 there is a snap-inserted distal coupling element 36 made of moulded plastic material, shown in figure 7 in two separate examples of embodiment, also provided with a portion 38 suitably shaped to be inserted inside the opening provided at the distal end 10b of the bar 10. Just like in the element 24 opposite to it, even on the portion 38 of the distal coupling element 36 there are one or more teeth 40 which snap-engage with one or more holes 42 made at the distal end 10b of the bar 10.

[0022] Lastly, the distal coupling element 36 is provided with an abutment pad 44, adapted to engage with the blocking element 20 to keep the door 16 closed when the lock 14 is operated through the related key (not shown).

[0023] On the non-exposed wall of each hollow tubular bar 10, that is on the wall intended for sliding coupling of the bar 10 itself with the door 16, there can be one or more slots 46 used as a sliding rail for suitable guide elements 48, 48' (figure 14) applied in a non-removable manner on the internal surface of the door 16. The guide elements 48, preferably made of plastic material and inserted by means of pressure into blind holes provided on the internal surface of the door 16 during the processing step, are arranged along the desired translation path of the bar 10. The guide elements 48' can also be provided in versions which allow them to be fixed to the door 16 by means of screws (not shown) though they are, regardless of their embodiment, always concealed from view and always arranged along the desired translation path of the bar 10. In such manner, with respect to the traditional closure mechanisms where the bars slide within the related guide mechanisms, in the mechanism according to the present invention, it is the bars 10 themselves which serve as a rail for their guide elements 48, 48'.

[0024] Suitable sliding rails 50 for the guide elements 48, 48' can also be provided on the non-exposed surface, that is the one facing the internal surface of the door 16, of the distal coupling elements 36 other than on the bar 10, for better control the translation movement of each bar 10. The subsequent result is the complete concealment of any guide element for the bars 10.

[0025] In addition, due to the possibility of providing various sliding rails, coaxially and non-coaxially, on the hidden surfaces of the bars 10 and of the terminal coupling elements 36 , it is possible to ensure that the bar is not subject to any stress in case of attempts to break the lock 14. In such manner, the closure mechanism according to the invention can also be made of plastic material other than metal, in that it is inherently provided with the rigidity required to allow complete safe closure of any door of a wardrobe or piece furniture in general.

[0026] Thus, it has been observed that the sliding bars closure mechanism for locks according to the present invention attains all the objectives described previously. In particular, the closure mechanism according to the invention allows obtaining the following advantages:

- Quick-mounting of the entire mechanism on site, due to the fact that it is possible to avoid use of screws, in that most of the elements of the mechanism itself

require snap or pressure mounting; the time required for positioning, performed through spacing templates on the door with the known type of closure systems, of each sliding bar in the proper operating position and the time required for screwing are completely eliminated;

- More silent locks and associated mechanism when closing the door, due to the fact that all the elements at contact with the bars both at sliding step and blocked position are made of plastic material;
- Enhancement of the aesthetic aspect of the furniture provided with the mechanism according to the invention, resulting from the concealment of any guiding/securing/fastening mechanism and element of the sliding bars;
- Adaptability to any type of lock present on the market and to any type of furniture or wardrobe, given the ease of working of the plastic material with which the related engagement and guiding/securing elements are made;
- The range of choice of the desired colour and finishing for the bars of the mechanism, in such a manner to attain a perfect chromatic integration with the inner parts of the furniture; the bars and all the moulded elements can be made of transparent plastic material thus avoiding any visual inconveniences.

[0027] However, the sliding bars closure mechanism for locks according to the present invention thus conceived is susceptible to various modifications and variations, all within the scope of the invention as defined by the appended claims; in addition, all details can be replaced by technically equivalent elements. In practice, the material used, alongside shapes and dimensions, may vary depending on the technical requirements.

[0028] Therefore, the protection scope of the invention is defined by the attached claims.

Claims

1. Sliding bars closure mechanism for a lock (14) of the type provided to be fixed in a non-removable manner on the internal surface of a door (16) hinged to a furnishing element in general, the mechanism comprising one or more bars (10) each fixed, at one of its proximal ends (10a), to a sliding latch (12) of said lock (14), each of said one or more bars (10) also being capable of translating along the direction defined by its axis to engage, at one of its distal ends (10b), with one or more blocking elements (20) which, in use, are integrally joined to a fixed wall (18) of said furnishing element so that said door (16) is kept in a closed position, wherein each of said bars (10) is composed of a hollow tubular section provided with an internal chamber hollow and open at said opposite proximal (10a) and distal (10b) ends of each bar (10), and wherein inside the opening provided at said distal end (10b) of said bar (10) there is at least one snap-inserted distal coupling element (36) made of plastic material, **characterised in that** on the surface of said at least distal coupling element (36) facing the internal surface of said door (16) there are one or more sliding rails (50) for one or more guide elements (48, 48') of the sliding bars closure mechanism, which can be applied in a non-removable manner on the internal surface of said door (16)

2. Sliding bars closure mechanism according to claim 1, **characterised in that** each of said bars (10) is fixed to said sliding latch (12) of said lock (14) through the interposition of at least one proximal coupling element (24) made of plastic material, which can be snap-coupled to said proximal end (10a) of said bar (10).

3. Sliding bars closure mechanism according to claim 2, **characterised in that** said proximal coupling element (24) is provided with a portion (26) suitably shaped to be inserted into the opening provided at said proximal end (10a), of said bar (10), said portion (26) being provided with one or more teeth (28) which snap-engage with one or more holes (30) made at said proximal end (10a) of said bar (10).

4. Sliding bars closure mechanism according to claim 2, **characterised in that** said proximal coupling element (24) is provided with a plate-shaped portion (32) which can be coupled in a non-removable manner to said sliding latch (12) of said lock (14).

5. Sliding bars closure mechanism according to claim 4, **characterised in that** said plate-shaped portion (32) of said proximal coupling element (24) is provided with at least one hole (34) adapted to accommodate a dowel (34') provided on said sliding latch (12) of said lock (14).

6. Sliding bars closure mechanism according to claim 1, **characterised in that** said distal coupling element (36) is provided with a portion (38) suitably shaped to be inserted into the opening provided at said distal end (10b) of said bar (10), said portion (38) being provided with one or more teeth (40) which snap-engage with one or more holes (42) made at said distal ends (10b) of said bar (10).

7. Sliding bars closure mechanism according to claim 1, **characterised in that** said distal coupling element (36) is provided with at least one abutment pad (44), adapted to engage with said one or more blocking elements (20) to keep said door (16) closed when said lock (14) is operated.

8. Sliding bars closure mechanism according to claim 1, **characterised in that** on the wall of said bar (10)

intended for sliding coupling with said door (16) there are one or more slots (46) serving as sliding rails for one or more guide elements (48, 48') applied in a non-removal manner on the internal surface of said door (16).

9. Sliding bars closure mechanism according to claim 1, **characterised in that** said one or more guide elements (48) are inserted by means of pressure into blind holes provided on the internal surface of said door (16) along the desired translation path of said bar (10).

10. Sliding bars closure mechanism according to claim 1, **characterised in that** said one or more guide elements (48') can be fixed to said door (16) by means of screws.

11. Sliding bars closure mechanism according to claim 1, **characterised in that** said one or more guide elements (48) are made of plastic material.

12. Sliding bars closure mechanism according to claim 1, **characterised in that** said one or more blocking elements (20) are made of plastic material and are integrally joined to said fixed wall (18) of said furnishing element through threaded (22) or pressure (22') fastening means.

13. Sliding bars closure mechanism according to claim 12, **characterised in that** said one or more blocking elements (20) are made in one piece with said pressure fastening means (22').

14. Sliding bars closure mechanism according to claim 1, **characterised in that** said one or more blocking elements (20) are made of plastic material and they are made to be mounted recessed into the thickness of said fixed wall (18) of said furnishing element.

15. Sliding bars closure mechanism according to claim 1, **characterised in that** said one or more bars (10) are made of plastic material.

16. Sliding bars closure mechanism according to claim 1, **characterised in that** said one or more bars (10) are made of metal material.

17. Cylinder lock (14) of the type provided to be fixed in a non-removable manner on the internal surface of a door (16) hinged to a furnishing element in general, **characterised in that** it is combined with a sliding bars (10) closure mechanism according to any one of the preceding claims.

Patentansprüche

1. Schubstangenverschlussmechanismus für ein Schloss (14) des Typs, der dazu vorgesehen ist, unlösbar auf der Innenfläche einer Tür (16) befestigt zu werden, die an ein Einrichtungselement im Allgemeinen angelenkt ist, wobei der Mechanismus eine oder mehrere Stangen (10) umfasst, die jeweils an einem ihrer proximalen Enden (10a) an einem Schieberiegel (12) des Schlosses (14) befestigt sind, wobei jede dieser einen oder mehreren Stangen (10) außerdem in der Lage ist, sich entlang der von ihrer Achse definierten Richtung zu verschieben, um an einem ihrer distalen Enden (10b) in eines oder mehrere Sperrelemente (20) einzugreifen, die beim Gebrauch fest mit einer feststehenden Wand (18) des Einrichtungselements verbunden sind, so dass die Tür (16) in einer geschlossenen Stellung gehalten wird, wobei jede dieser Stangen (10) aus einem röhrenförmigen Hohlprofil besteht, das mit einer inneren Kammer versehen ist, die hohl und an den entgegengesetzten proximalen (10a) und distalen (10b) Enden von jeder Stange (10) offen ist, und wobei sich in der am distalen Ende (10b) von der Stange (10) vorgesehenen Öffnung mindestens ein eingeschnapptes distales Verbindungselement (36) befindet, das aus Kunststoffmaterial besteht, **dadurch gekennzeichnet, dass** sich auf der Oberfläche dieses mindestens einen distalen Verbindungselements (36), die der Innenfläche der Tür (16) zugewandt ist, eine oder mehrere Gleitschienen (50) für eines oder mehrere Führungselemente (48, 48') des Schubstangenverschlussmechanismus befinden, die unlösbar auf der Innenfläche dieser Tür (16) angebracht sein können.

2. Schubstangenverschlussmechanismus nach Anspruch 1, **dadurch gekennzeichnet, dass** jede der Stangen (10) an dem Schieberiegel (12) des Schlosses (14) durch Einfügen von mindestens einem aus Kunststoffmaterial bestehenden proximalen Verbindungselement (24) befestigt ist, das mit dem proximalen Ende (10a) der Stange (10) schnappverbunden sein kann.

3. Schubstangenverschlussmechanismus nach Anspruch 2, **dadurch gekennzeichnet, dass** das proximale Verbindungselement (24) mit einem Abschnitt (26) versehen ist, der passend geformt ist, um in die Öffnung eingefügt zu werden, die an dem proximalen Ende (10a) der Stange (10) vorgesehen ist, wobei dieser Abschnitt (26) mit einem oder mehreren Zähnen (28) versehen ist, die sich im Schnappeingriff mit einem oder mehreren Löchern (30) befinden, die am proximalen Ende (10a) der Stange (10) ausgeführt sind.

4. Schubstangenverschlussmechanismus nach An-

spruch 2, **dadurch gekennzeichnet, dass** das proximale Verbindungselement (24) mit einem plattenförmigen Abschnitt (32) versehen ist, der unlösbar mit dem Schieberiegel (12) des Schlosses (14) verbunden sein kann.

5. Schubstangenverschlussmechanismus nach Anspruch 4, **dadurch gekennzeichnet, dass** der plattenförmige Abschnitt (32) des proximalen Verbindungselements (24) mit mindestens einem Loch (34) versehen ist, das geeignet ist, einen Stift (34') aufzunehmen, der auf dem Schieberiegel (12) des Schlosses (14) vorgesehen ist.

6. Schubstangenverschlussmechanismus nach Anspruch 1, **dadurch gekennzeichnet, dass** das distale Verbindungselement (36) mit einem Abschnitt (38) versehen ist, der passend geformt ist, um in die Öffnung eingefügt zu werden, die an dem distalen Ende (10b) der Stange (10) vorgesehen ist, wobei dieser Abschnitt (38) mit einem oder mehreren Zähnen (40) versehen ist, die sich im Schnappeingriff mit einem oder mehreren Löchern (42) befinden, die an den distalen Enden (10b) der Stange (10) ausgeführt sind.

7. Schubstangenverschlussmechanismus nach Anspruch 1, **dadurch gekennzeichnet, dass** das distale Verbindungselement (36) mit mindestens einer Anliegeplatte (44) versehen ist, die geeignet ist, mit einem oder mehreren Sperrelementen (20) in Eingriff zu kommen, um die Tür (16) geschlossen zu halten, wenn das Schloss (14) betätigt wird.

8. Schubstangenverschlussmechanismus nach Anspruch 1, **dadurch gekennzeichnet, dass** sich in der Wand der Stange (10), die für die gleitende Verbindung mit der Tür (16) vorgesehen ist, eines oder mehrere Langlöcher (46) befinden, die als Gleitschienen für eines oder mehrere Führungselemente (48, 48') dienen, die unlösbar auf der Innenfläche der Tür (16) angebracht sind.

9. Schubstangenverschlussmechanismus nach Anspruch 1, **dadurch gekennzeichnet, dass** das eine oder die mehreren Führungselemente (48) mit Druck in Sacklöcher eingesetzt sind, die auf der Innenfläche der Tür (16) entlang dem gewünschten Translationsweg der Stange (10) vorgesehen sind.

10. Schubstangenverschlussmechanismus nach Anspruch 1, **dadurch gekennzeichnet, dass** das eine oder die mehreren Führungselemente (48') mit Schrauben an der Tür (16) befestigt sein können.

11. Schubstangenverschlussmechanismus nach Anspruch 1, **dadurch gekennzeichnet, dass** das eine oder die mehreren Führungselemente (48) aus Kunststoffmaterial bestehen.

12. Schubstangenverschlussmechanismus nach Anspruch 1, **dadurch gekennzeichnet, dass** das eine oder die mehreren Sperrelemente (20) aus Kunststoffmaterial bestehen und durch Schraub- (22) oder Druckbefestigungsmittel (22') fest mit der feststehenden Wand (18) des Einrichtungselements verbunden sind.

13. Schubstangenverschlussmechanismus nach Anspruch 12, **dadurch gekennzeichnet, dass** das eine oder die mehreren Sperrelemente (20) einstückig mit den Druckbefestigungsmitteln (22') ausgeführt sind.

14. Schubstangenverschlussmechanismus nach Anspruch 1, **dadurch gekennzeichnet, dass** das eine oder die mehreren Sperrelemente (20) aus Kunststoffmaterial bestehen und ausgeführt sind, um versenkt in die Dicke der feststehenden Wand (18) des Einrichtungselements eingebaut zu werden.

15. Schubstangenverschlussmechanismus nach Anspruch 1, **dadurch gekennzeichnet, dass** die eine oder die mehreren Stangen (10) aus Kunststoffmaterial bestehen.

16. Schubstangenverschlussmechanismus nach Anspruch 1, **dadurch gekennzeichnet, dass** die eine oder die mehreren Stangen (10) aus Metallmaterial bestehen.

17. Zylinderschloss (14) des Typs, der dazu vorgesehen ist, unlösbar auf der Innenfläche einer Tür (16) befestigt zu werden, die an ein Einrichtungselement im Allgemeinen angelenkt ist, **dadurch gekennzeichnet, dass** es mit einem Schubstangenverschlussmechanismus (10) nach einem der vorhergehenden Ansprüche kombiniert ist.

Revendications

1. Mécanisme de fermeture à barres coulissantes pour une serrure (14) du type prévu pour être fixée d'une manière non amovible sur la surface interne d'une porte (16) articulée sur un élément d'ameublement en général, le mécanisme comprenant une ou plusieurs barres (10), chacune fixée, à une de ses extrémité proximales (10a), à un verrou coulissant (12) de ladite serrure (14), chacune desdites une ou plusieurs barres (10) étant également capable de translation suivant la direction définie par son axe pour s'engager, à une de ses extrémités distales (10b), avec un ou plusieurs éléments de blocage (20) qui, durant l'utilisation, sont unis solidairement à une paroi fixe (18) dudit élément d'ameublement de manière

re que ladite porte (16) soit maintenue dans une position fermée, dans lequel chacune desdits barres (10) est composée d'une section tubulaire creuse pourvue d'une chambre interne creuse et ouverte auxdites extrémités proximale (10a) et distale (10b) opposées de chaque barre (10), et dans lequel au moins un élément d'accouplement distal inséré par encliquetage (36) réalisé en matière plastique est situé à l'intérieur de l'ouverture prévue à ladite extrémité distale (10b) de ladite barre (10), **caractérisé en ce que** sur la surface dudit au moins un élément d'accouplement distal (36) faisant face à la surface interne de ladite porte (16) sont présents un ou plusieurs rails de coulissement (50) pour un ou plusieurs éléments de guidage (48, 48') du mécanisme de fermeture à barres coulissantes, qui peuvent être appliqués de manière non amovible sur la surface interne de ladite porte (16).

2. Mécanisme de fermeture à barres coulissantes selon la revendication 1, **caractérisé en ce que** chacune desdites barres (10) est fixée audit verrou coulissant (12) de ladite serrure (14) par le biais de l'interposition d'au moins un élément d'accouplement proximal (24) réalisé en matière plastique, qui peut être accouplé par encliquetage à ladite extrémité proximale (10a) de ladite barre (10).

3. Mécanisme de fermeture à barres coulissantes selon la revendication 2, **caractérisé en ce que** ledit élément d'accouplement proximal (24) est pourvu d'une portion (26) profilée de manière appropriée pour être insérée dans l'ouverture prévue au niveau de ladite extrémité proximale (10a) de ladite barre (10), ladite portion (26) étant munie d'une ou plusieurs dents (28) qui s'engagent par encliquetage avec un ou plusieurs trous (30) réalisés au niveau de ladite extrémité proximale (10a) de ladite barre (10).

4. Mécanisme de fermeture à barres coulissantes selon la revendication 2, **caractérisé en ce que** ledit élément d'accouplement proximal (24) est pourvu d'une portion en forme de plaque (32) qui peut être accouplée de manière non amovible audit verrou coulissant (12) de ladite serrure (14).

5. Mécanisme de fermeture à barres coulissantes selon la revendication 4, **caractérisé en ce que** ladite portion en forme de plaque (32) dudit élément d'accouplement proximal (24) est muni d'au moins un trou (34) adapté pour recevoir un goujon (34') prévu sur ledit verrou coulissant (12) de ladite serrure (14).

6. Mécanisme de fermeture à barres coulissantes selon la revendication 1, **caractérisé en ce que** ledit élément d'accouplement distal (36) est pourvu d'une portion (38) profilée de manière appropriée pour être insérée dans l'ouverture prévue au niveau de ladite extrémité distale (10b) de ladite barre (10), ladite portion (38) étant munie d'une ou plusieurs dents (40) qui s'engagent par encliquetage avec un ou plusieurs trous (42) réalisés au niveau desdites extrémités distales (10b) de ladite barre (10).

7. Mécanisme de fermeture à barres coulissantes selon la revendication 1, **caractérisé en ce que** ledit élément d'accouplement distal (36) est muni d'au moins un tampon de butée (44), adapté pour s'engager avec lesdits un ou plusieurs éléments de blocage (20) pour maintenir ladite porte (16) fermée quand ladite serrure (14) est actionnée.

8. Mécanisme de fermeture à barres coulissantes selon la revendication 1, **caractérisé en ce que** sur la paroi de ladite barre (10) destinée à l'accouplement coulissant avec ladite porte (16) sont présentes une ou plusieurs fentes (46) servant des rails de coulissement pour un ou plusieurs éléments de guidage (48, 48') appliqués de manière non amovible sur la surface interne de ladite porte (16).

9. Mécanisme de fermeture à barres coulissantes selon la revendication 1, **caractérisé en ce que** lesdits un ou plusieurs éléments de guidage (48) sont insérés par pression dans des trous borgnes prévus sur la surface interne de ladite porte (16) le long de la trajectoire de translation désirée de ladite barre (10).

10. Mécanisme de fermeture à barres coulissantes selon la revendication 1, **caractérisé en ce que** lesdits un ou plusieurs éléments de guidage (48') peuvent être fixés à ladite porte (16) au moyen de vis.

11. Mécanisme de fermeture à barres coulissantes selon la revendication 1, **caractérisé en ce que** lesdits un ou plusieurs éléments de guidage (48) sont réalisés en matière plastique.

12. Mécanisme de fermeture à barres coulissantes selon la revendication 1, **caractérisé en ce que** lesdits un ou plusieurs éléments de blocage (20) sont réalisés en matière plastique et sont unis solidairement à ladite paroi fixe (18) dudit élément d'ameublement par le biais de moyens de fixation filetés (22) ou à pression (22').

13. Mécanisme de fermeture à barres coulissantes selon la revendication 12, **caractérisé en ce que** lesdits un ou plusieurs éléments de blocage (20) sont réalisés d'une seule pièce avec lesdits moyens de fixation à pression (22').

14. Mécanisme de fermeture à barres coulissantes selon la revendication 1, **caractérisé en ce que** lesdits un ou plusieurs éléments de blocage (20) sont réa-

lisés en matière plastique et **en ce qu'**ils sont conçus pour être montés encastrés dans l'épaisseur de ladite paroi fixe (18) dudit élément d'ameublement.

15. Mécanisme de fermeture à barres coulissantes selon la revendication 1, **caractérisé en ce que** lesdites une ou plusieurs barres (10) sont réalisées en matière plastique.

16. Mécanisme de fermeture à barres coulissantes selon la revendication 1, **caractérisé en ce que** lesdites une ou plusieurs barres (10) sont réalisées en matériau métallique.

17. Serrure à cylindre (14) du type prévu pour être fixée d'une manière non amovible sur la surface interne d'une porte (16) articulée sur un élément d'ameublement en général, **caractérisée en ce qu'**elle est combinée avec un mécanisme de fermeture à barres coulissantes (10) selon l'une quelconque des revendications précédentes.

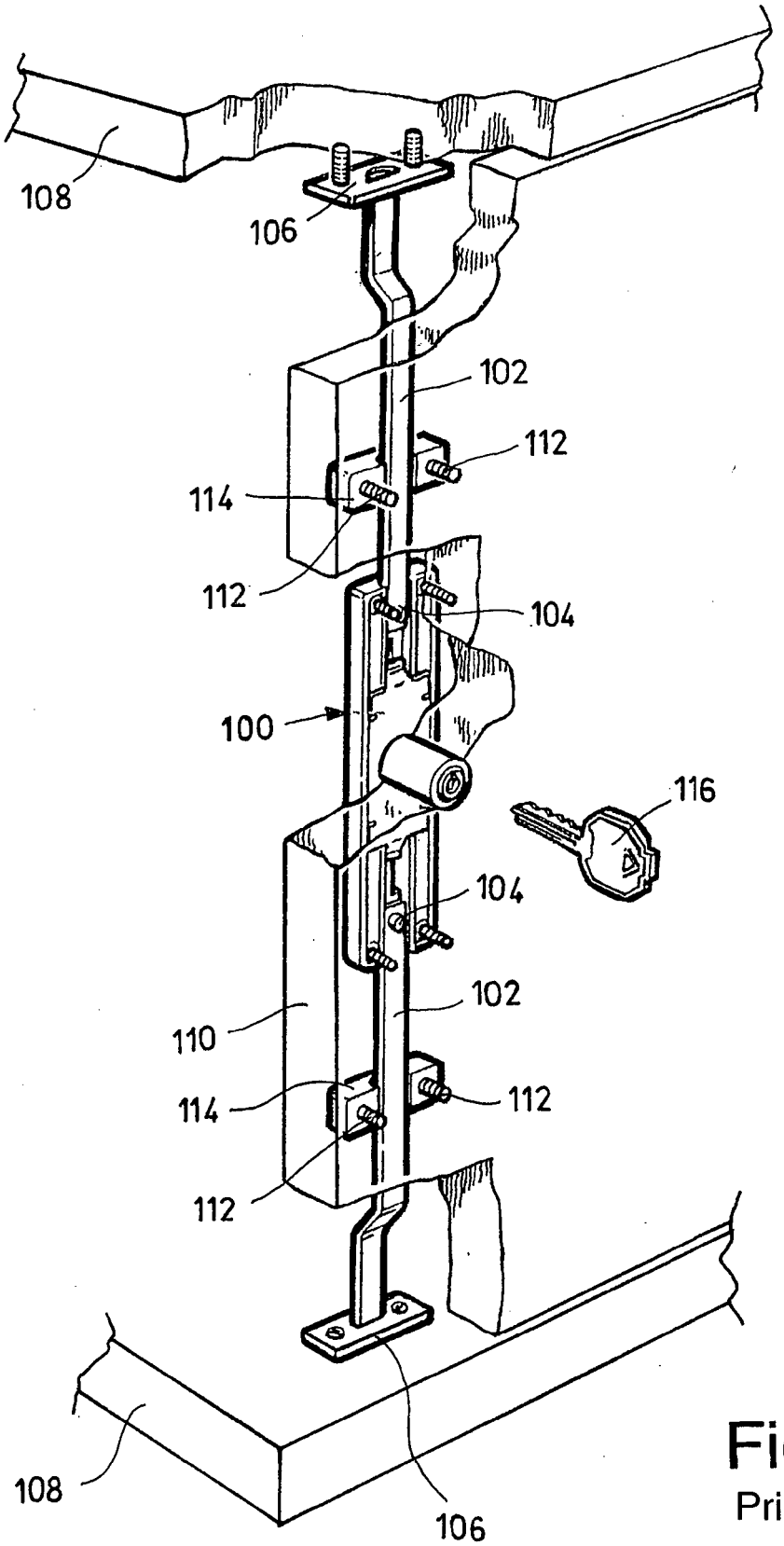


Fig. 1
Prior Art

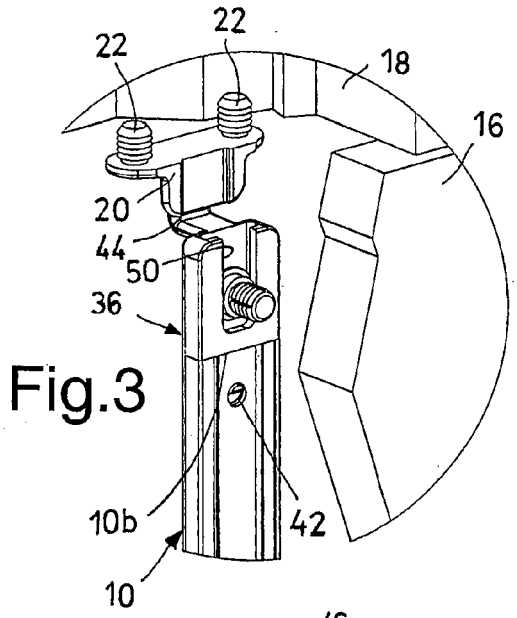


Fig.3

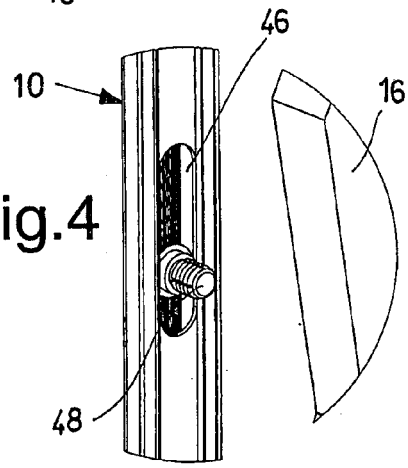


Fig.4

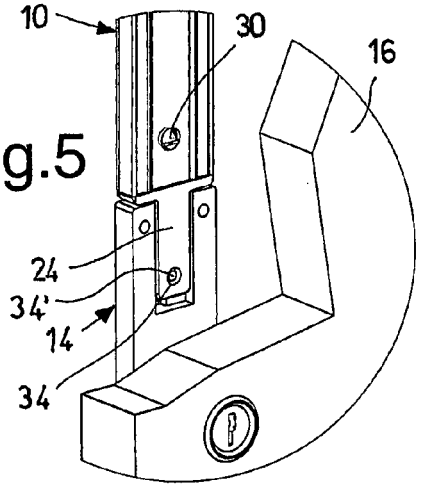


Fig.5

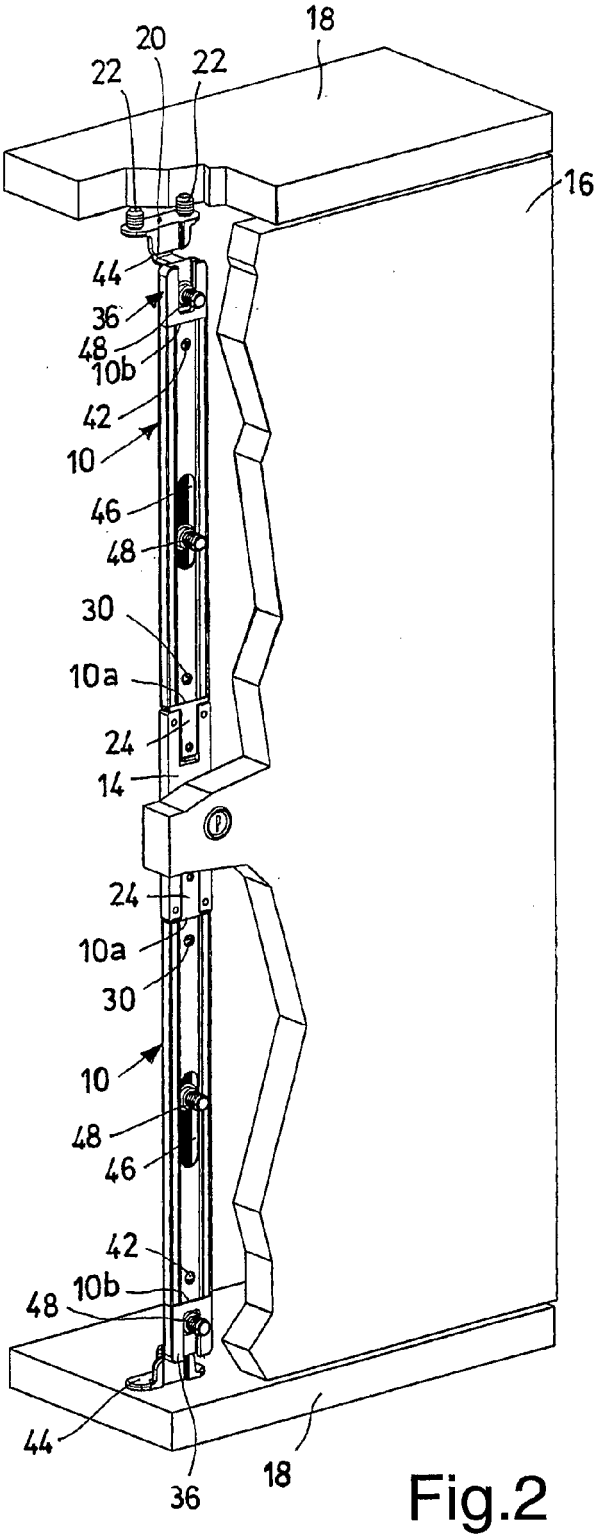
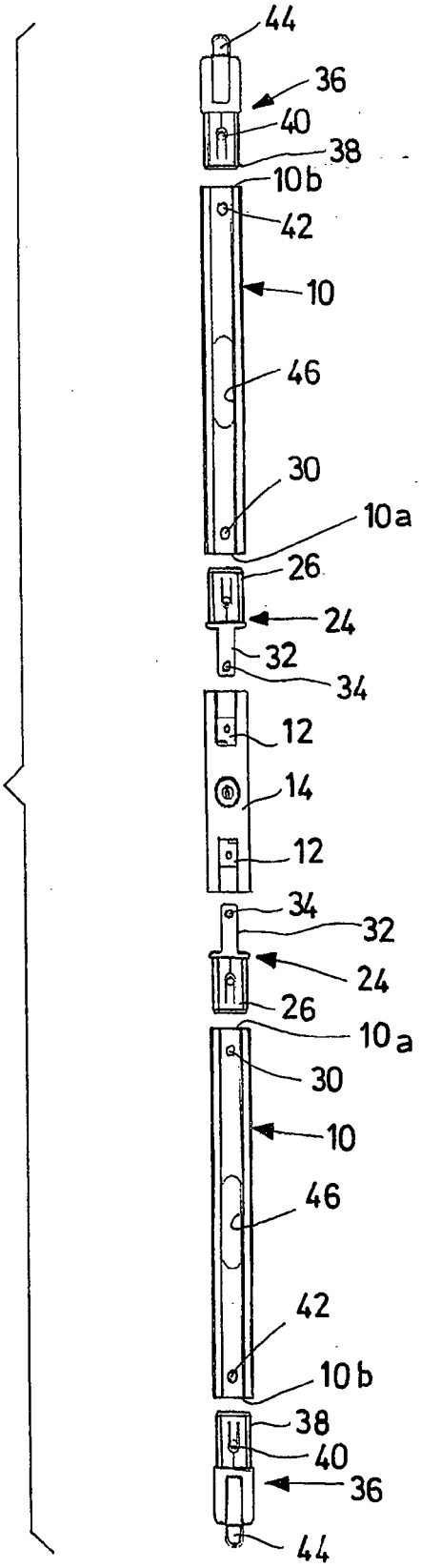


Fig.2

Fig. 6


44
36
40
38
10b
42
10
46
30
10a
26
24
32
34
12
14
12
34
32
24
26
10a
30
10
46
42
10b
38
40
36
44

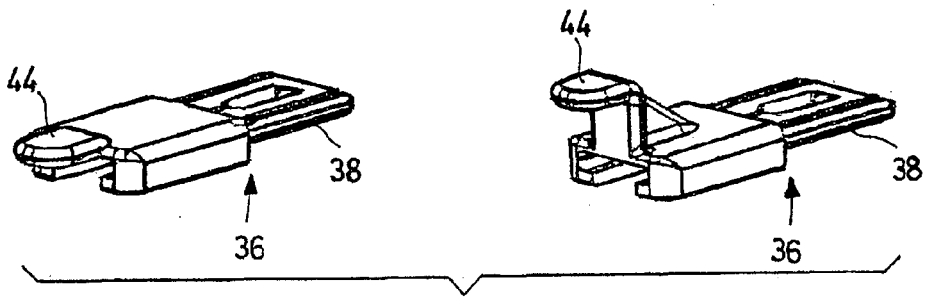


Fig.7

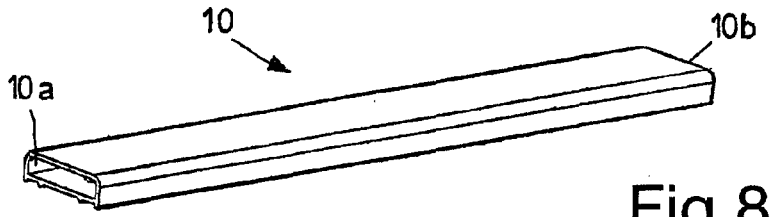


Fig.8

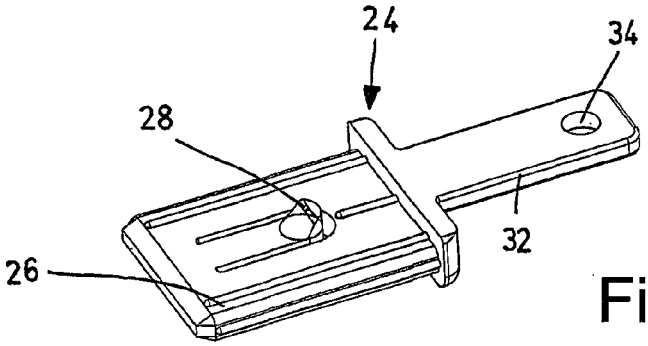


Fig.9

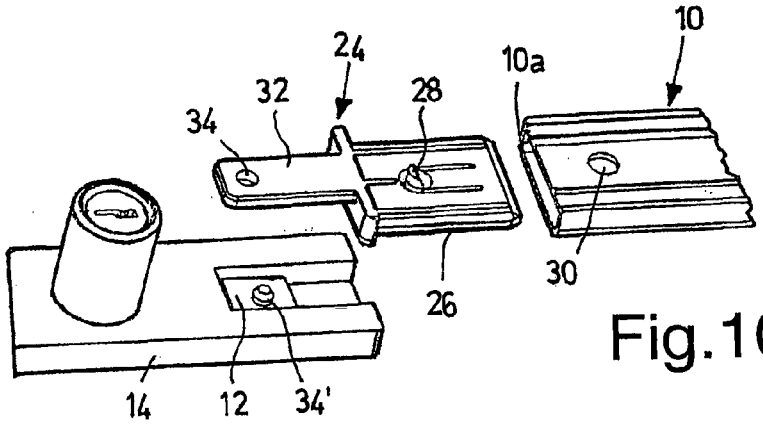


Fig.10

Fig.14

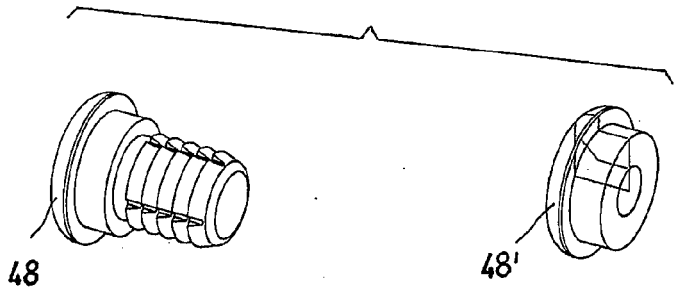


Fig.11

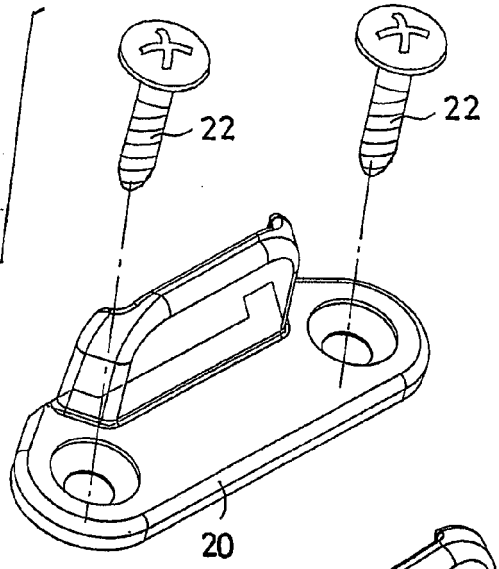
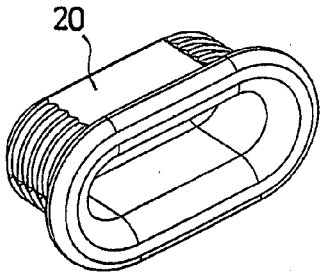


Fig.12



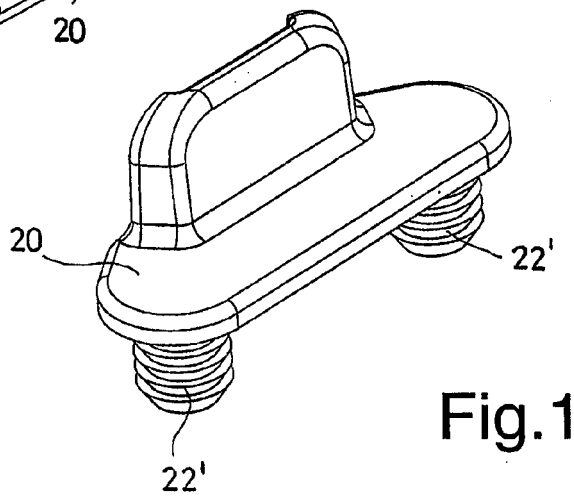


Fig.13

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

- FR 1067271 A **[0006]**
- US 5688000 A **[0006]**