



(19)

Europäisches Patentamt

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(11)

EP 0 856 634 A2

(12)

EUROPEAN PATENT APPLICATION

(43) Date of publication:
05.08.1998 Bulletin 1998/32

(51) Int. Cl.⁶: **E06B 9/01**

(21) Application number: **97830585.2**

(22) Date of filing: **10.11.1997**

(84) Designated Contracting States:
**AT BE CH DE DK ES FI FR GB GR IE IT LI LU MC
NL PT SE**
Designated Extension States:
AL LT LV MK RO SI

(30) Priority: **04.02.1997 IT BS970011**

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(54) **Modular, detachable window/door security bar system**

(57) The invention regards a security bar system for doors and windows made up of two facing channel uprights (11) to be fixed vertically to the jambs of a door or window opening, of a plurality of modular bar elements (12) which can be inserted and are superimposed in said channel uprights and of at least one blocking system (13) to block and hold the modular elements so they cannot be extracted from the uprights. Each modular element (12) is made up of at least two spacers (15) and by at least one bar (16) placed between and supported by the spacers themselves.

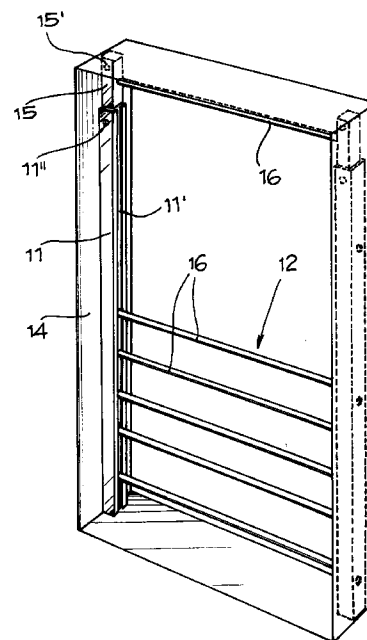


Fig. 1

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Description

The present invention regards security bars for doors and windows.

The security bars are a metallic structure to protect doors and windows against external intrusion. Normally they are a series of metal bars forming a cross or some other pattern, anchored to the sides of the doorway or window to be protected. Furthermore a security bar system is rigid and placed in position so that it is fixed and irremovable. In this way however, even though it ensures permanent protection, its presence may prevent access to and movement of external window frames, in particular when these are leafed, and/or create in the inhabitants the sensation of being barred in or imprisoned. Fixed security bars are also an insuperable obstacle in the case of rapid exit or entrance in the face of an emergency.

Also well known are the hinged, sliding and folding security bars attached to one upright of the door or window frame. But these are also dependent on at least one upright thus creating an obstacle when folded and, as they can be unlocked from one side, they do not offer maximum protection against possible intrusion.

Given the above, the main objective of the present invention is to propose a modular security bar system for doors or windows, which is also completely and rapidly detachable so as to free the doorway or window of its presence when they do not require protecting or there is a need to remove the barrier.

Another objective of the invention is to supply security bars designed also for Do It Yourself, which can fit doors or windows of different sizes, are easy and handy to install and block in position using normally available tools and without having the make changes to the wall structure.

These objectives are fulfilled by a security bar system complete with two channel uprights to be fixed vertically to the jamb of a door or window opening, a plurality of modular security bar elements which can be inserted and superimposed in said channel uprights with at least one locking system to lock the modular elements in the uprights. Each modular element is made up of two side spacers and at least one bar positioned between and supported by said spacers.

Consequently by an appropriate choice or cutting if needed of the channel uprights and bars and by choosing the number of modular security bars, the security bar system can be made to fit any door or window using a completely reversible assembly process given the possibility of dismantling the security bars at any moment and whenever needed.

Other vertical or differently orientated bars can be attached to the spacer holder bars which are normally horizontal and likewise other unit features added to configure differently and /or strengthen the resulting structure of the security bars.

Further details of the invention will become even

more evident from the rest of the description made in reference to the indicative and not limiting drawings enclosed, in which:

Fig. 1 shows a view in perspective of a security bar system being assembled in a window opening;
Fig. 2 shows a part of an upright and a modular element separated;
Fig. 3 is a front view of a vertical cross section of a part of an assembled security bars system;
Fig. 4 is a cross section of the security bars; and
Fig. 5 shows another modular construction of the security bars.

The security bar system proposed herein is made up fundamentally of two channel uprights 11, of a series of modular security bar elements 12 and of at least one locking system 13, all metal.

Each channel shaped upright 11 has a C cross section and forms a housing with a longitudinal opening 11 facing the other upright. The two uprights 11 are anchored vertically to the jamb of a door or window opening 14 where any reversible means of anchoring can be used to allow the uprights to be removed as well when required.

The height of the uprights, at least for the part facing inwards, is less than the jamb of the door or window by at least as much as the height of a modular element so that the top does not reach the lintel of the opening but is shorter to allow the insertion of a modular unit.

Each modular unit 12 is made up of two parallel spacers 15 and by at least one round bar 16 or another section which extends and is supported between the spacers.

The height of the spacers 15 is equal to a fraction of the height of the channel uprights 11. They have a square, round or otherwise shaped cross section, suitable to fit into and slide in the channel housing of the uprights.

The bars 16 may have any cross section but the sizes must allow them to be inserted and slide in the opening 11' of the channel of the uprights.

The spacers 15 each have at least one side hole 17 to receive and hold the end of the bar 16. The spacers 15 and the bar or bars 16 may be held together in a permanent form, but it is preferable for them to be paired freely in order to insert the ends of each bar into the side holes of the spacers. This way of assembly allows the spacers to be separated from the bars giving maximum reduction in overall size when the security bars system is not assembled, is packed for sale and transport or placed to one side when out of order.

The spacers of the modular element which are designed to be at the top of the security bar system when assembled have an additional transversal hole 15' which is to coincide with a transversal hole 11' in the uprights and will receive a high resistance locking pin 18 to which the locking system 13 is attached to prevent

them from being extracted. This locking system can be a lock or other suitable device which can obviously be reached from the internal side of the security bars system and which can be covered by a housing.

For the setting up and composition of the security bars the uprights are fixed to the jambs of the door or window openings not allowing them, as stated above, to reach the lintel; the bar or bars 16 are placed between the corresponding two spacers 15, the spacers are inserted into the channel housing of the uprights from the top placing them one on top of the other up to the last modular element, the spacers of which have the transversal holes 15'; finally the blocking pins 18 are inserted in the holes and locked using a lock or similar system.

When disassembling the operation is carried out working backwards which is however easily and rapidly performed.

It should be noted that the bars instead of having the ends housed in holes bored in the spacers may be inserted and held in hollows shaped at the adjacent ends of two superimposed spacers.

Furthermore, besides the bars placed between the spacers and for the most part vertical, additional bars 19 either vertically or otherwise orientated can be used which are inserted into cross fittings 20 attached to at least some of the horizontal bars.

The horizontal bars may also be used for applying additional finishing units 21 which are linked at 22 to at least two bars 16 and which are blocked by a third holder bar 23 as shown in Fig. 5.

Claims

1. Bar security system for doors and windows, characterised by two facing channel uprights (11) to be fixed vertically to the jambs of a door or window opening, by a plurality of modular bar elements (12) which can be inserted and which are superimposable in said channel uprights and by at least one locking system (13) to block and hold these modular elements to prevent them from being removed from the uprights. Each modular element (12) is made up of at least two spacers (15) and by at least one bar (16) placed between and supported by said spacers.
2. Bar security system according to claim 1, where the uprights (11) each have a C shaped housing section with an opening facing the opposite upright and into which housing the spacers (15) of each modular bar element (12) are housed and slide whereas each bar (16) slides in the opening.
3. Bar security system according to claim 1, where the channel uprights (11) have a section missing or front opening at the top to allow the modular elements to be inserted.
4. Bar security system according to the aforesaid claims where the or each bar (16) of every modular element has its ends housed permanently or fixedly in holes cut into the two spacers of the modular element itself.
5. Bar security system according to claims 1-3 where the ends of each bar are placed and held between two superimposed spacers.
6. Bar security system according to the aforesaid claims where the blocking system (13) is at least one lock or some similar means applied to a pin or something similar which passes through at least one spacer and into the top of one of the uprights.
7. Bar security system according to any of the aforesaid claims where cross shaped elements (20) are fixed to the bars of the modular bar system for the addition of differently orientated bars (19).
8. Bar security system according to any of the aforesaid claims from 1 to 6 where added finishing units are fixed to at least two horizontal bars which are blocked by at least one third.

Fig. 1

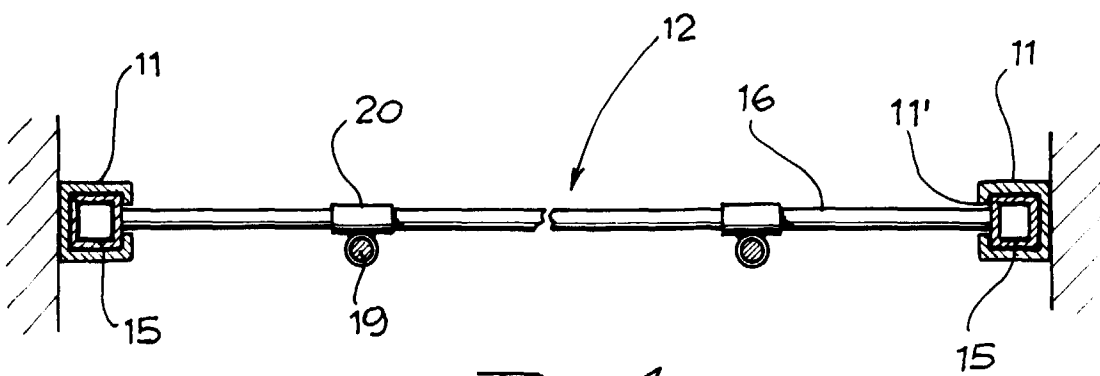
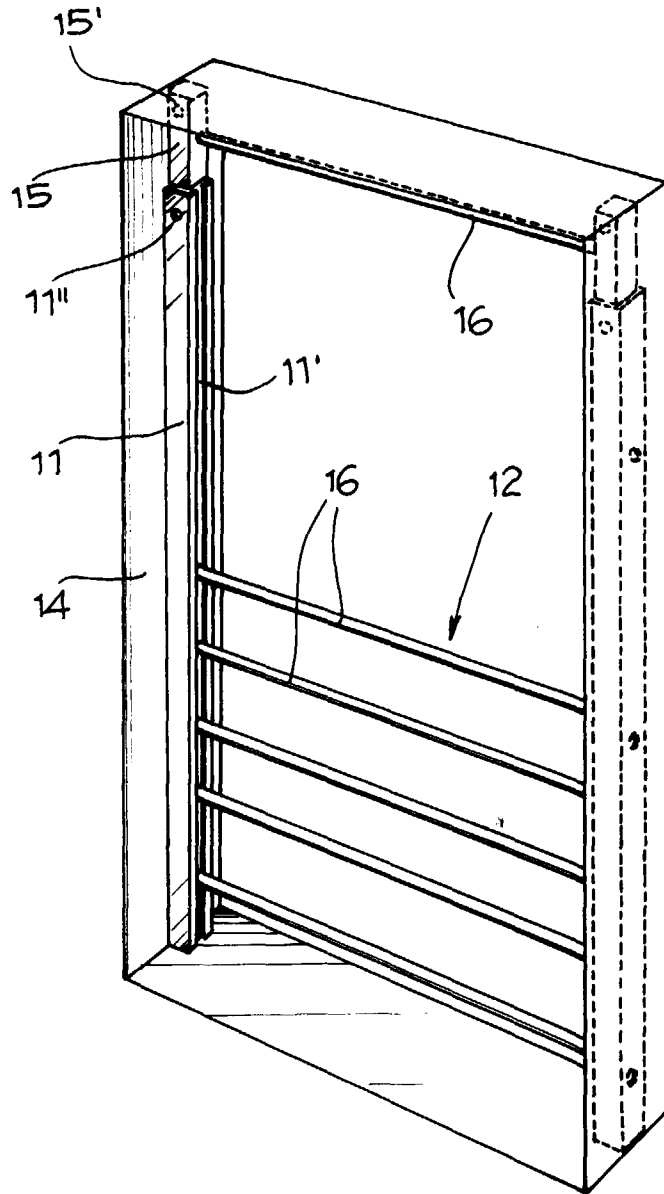


Fig. 4

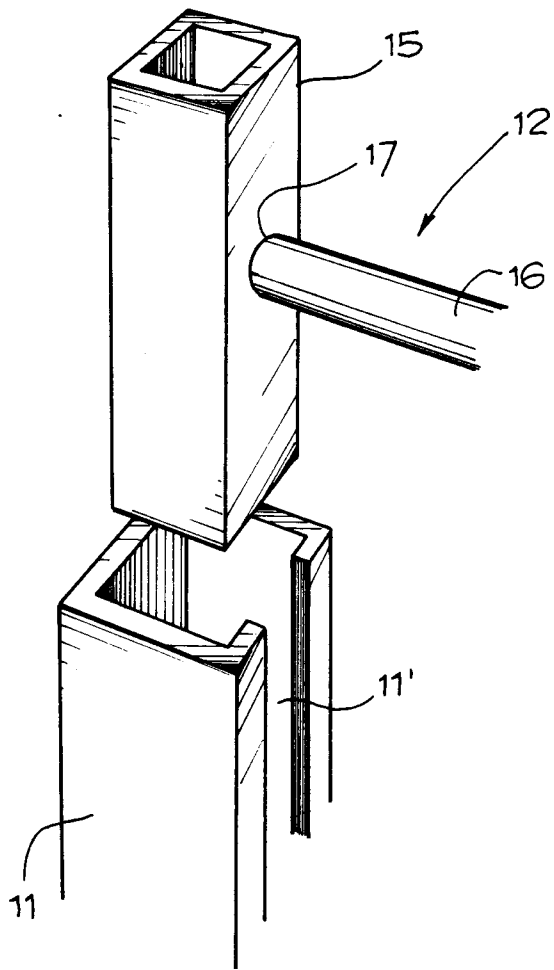


Fig. 2

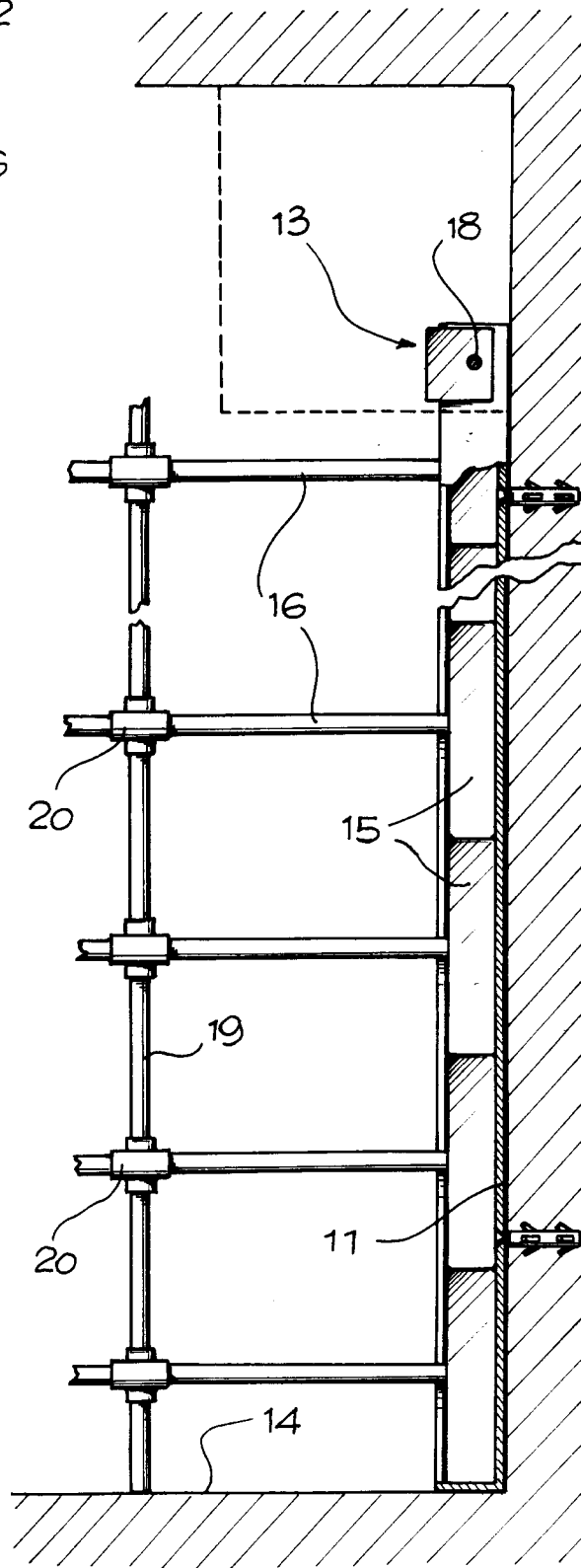


Fig. 3

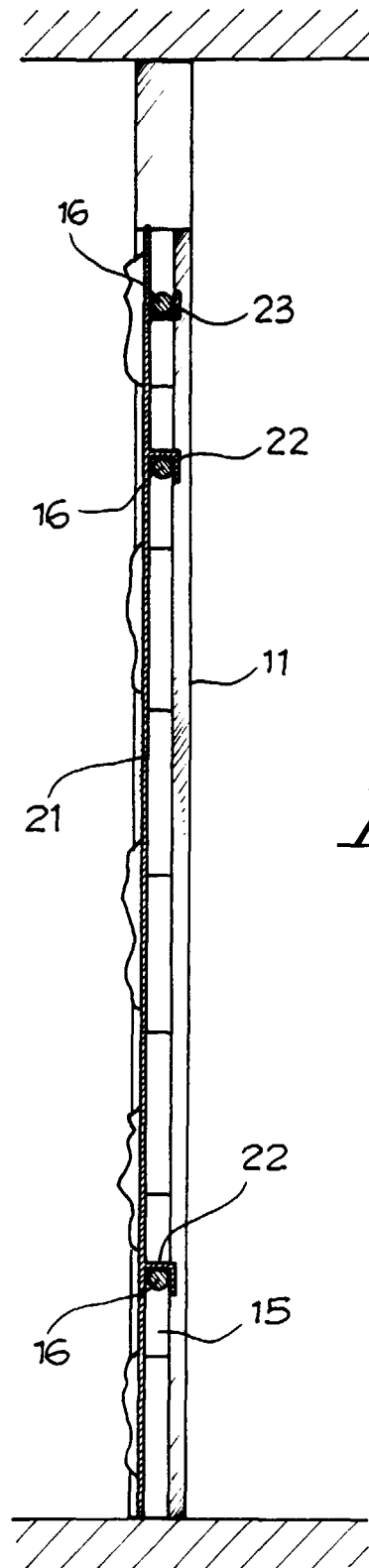


Fig. 5