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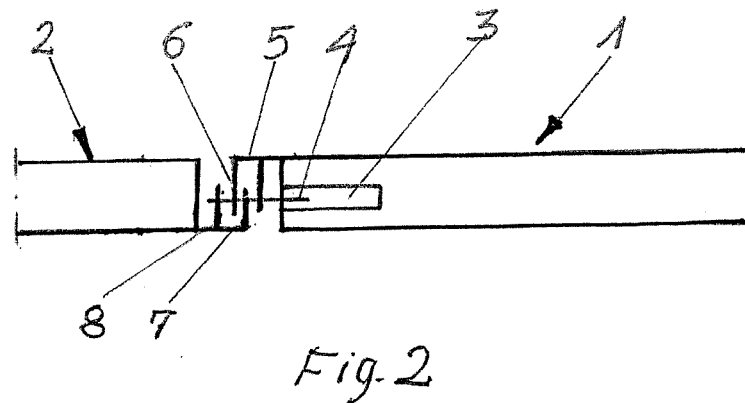
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(54) **DOORS**

(57) A door comprising a door leaf (1) from the front additionally equipped with a retaining element (5) with at least one retaining wall (6) with a hole for the bolt (4) and

a frame (2) equipped with a strike plate (7) with at least two retaining walls (8) with a hole for the bolt (4).



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Description

[0001] The invention relates to a door used in construction. The invention can also be applied to windows, furniture, cabinets or any other hinged door system.

[0002] Commonly used doors consist of a door leaf and a frame. Doors are usually locked in such a way that the bolt of a mounted in the door leaf lock is put into the hole in the frame or into the strike plate mounted on the frame.

[0003] In the existing solutions bolting elements are equipped with a single retaining wall, and in the case of attempts of forcing the lock, the bolt is burdened with a bending moment.

[0004] To increase the degree of a protection against burglary it was necessary to increase the cross-section of interacting elements and use materials with an increased strength. Enlarging the dimensions of the lock latches and the detent elements was not always possible due to the limits of the standards requirements.

[0005] Pursuit of designers and manufacturers was to construct a door having the high degree of burglary resistance while maintaining the economic aspects of the manufacturing process of door elements.

[0006] A door according to the invention comprising a door leaf additionally equipped with a retaining element from the front with at least one retaining wall with the hole for the bolt, and the frame equipped with a strike plate with at least two retaining walls with a hole for the bolt.

[0007] The retaining wall of the additional retaining element overlaps between the two retaining walls of the strike plate.

[0008] The two retaining walls of the additional retaining element overlap alternately between the two retaining walls of the strike plate.

[0009] The door structure according to the invention compared to the previously known solutions substantially increases the resistance to breaking of the connection of the door leaf and the frame, while maintaining the current strength and the dimensional parameters of the locking elements.

[0010] Multiplying of the retaining walls causes that the bending moments acting on the bolt, while forcing the door, are significantly lower as the distance between the points of force is decreased. At the bolt burden shear forces primarily. For the construction of the locking elements can therefore be used the materials with a relatively small cross-section and a low strength while maintaining good resistance to burglary.

[0011] Furthermore, the solution according to the invention enables the use of long bolts allowing locking in locations distant from the lock itself, without prejudice to the strength of the locking system and with high resistance to compromise.

[0012] The invention is illustrated diagrammatically in the drawings, wherein fig. 1 shows the door leaf with an additional retaining element with one retaining wall and the strike plate with two retaining walls as fig. 2 - the door

leaf with an additional retaining element with two retaining walls and the strike plate with two retaining walls, in the locking position.

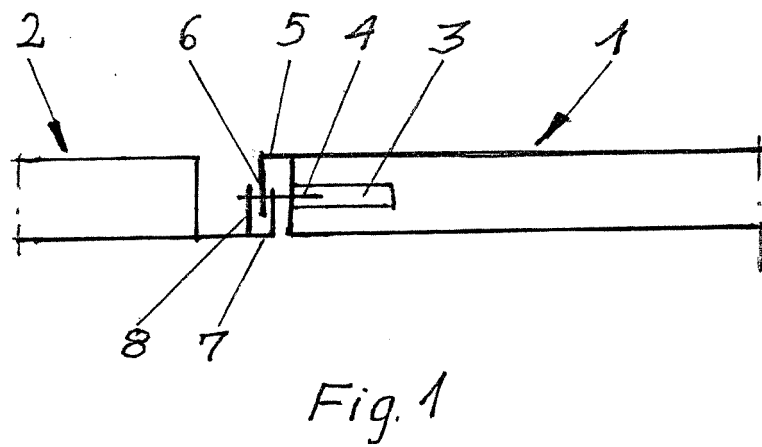
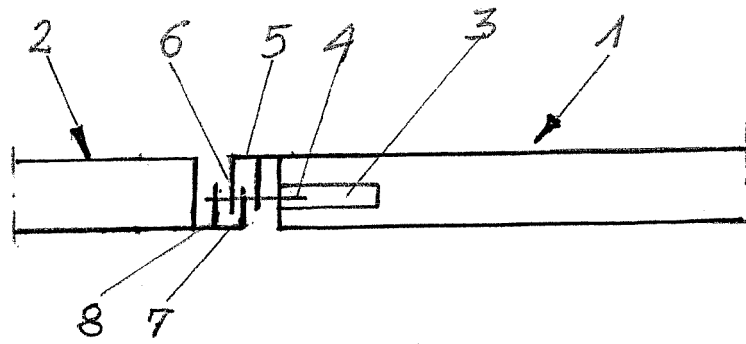
[0013] The door consists of a door leaf 1 and the frame 2. In the door leaf 1 is mounted a lock 3 with a bolt 4. The door leaf 1 is provided with an additional retaining element 5 with a retaining wall 6 and the frame 2 is provided with the strike plate 7 with two retaining walls 8. The retaining walls 6, 8 are provided with holes adapted to the dimensions of the bolt 4.

[0014] As shown in fig. 1 the retaining wall 6 is situated between the retaining walls 8. As shown in fig. 2 the two retaining walls 6 of the additional retaining element overlap alternately between the two retaining walls 8. The door locking takes place by inserting the bolt 4 in the retaining walls 6,8.

[0015] The invention also applies to locking the door leaf 1 of the frame 2 in the lower and the upper lintel of the door with the locking rods coupled with the door lock.

Claims

1. A door comprising a door leaf (1) from the front additionally equipped with a retaining element (5) with at least one retaining wall (6) with a hole for the bolt (4) and a frame (2) equipped with a strike plate (7) with at least two retaining walls (8) with a hole for the bolt (4).
2. The door of claim 1 wherein the additional retaining element (5) comprises the retaining wall (6) which overlaps between two retaining walls (8) of the strike plate (7).
3. The door of claim 1 wherein the additional retaining element (5) comprises two retaining walls (6) which overlap between two retaining walls (8) of the retaining strike plate (7).





EUROPEAN SEARCH REPORT

Application Number
EP 17 46 0012

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DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	FR 2 578 894 A1 (ACIAL [FR]) 19 September 1986 (1986-09-19) * the whole document * -----	1-3	INV. E05B17/20 E05B63/12
			TECHNICAL FIELDS SEARCHED (IPC)
			E05B
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 30 May 2017	Examiner Westin, Kenneth
CATEGORY OF CITED DOCUMENTS 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 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			

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**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 17 46 0012

5 This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
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30-05-2017

10	Patent document cited in search report	Publication date	Patent family member(s)	Publication date
15	FR 2578894	A1	19-09-1986	NONE
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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82