



Europäisches
Patentamt
European
Patent Office
Office européen
des brevets



EP 2 020 472 A2

(12)

EUROPEAN PATENT APPLICATION

(43) Date of publication:
04.02.2009 Bulletin 2009/06

(51) Int Cl.:
E04F 15/02 (2006.01)

(21) Application number: **08160804.4**

(22) Date of filing: **21.07.2008**

(84) Designated Contracting States:
**AT BE BG CH CY CZ DE DK EE ES FI FR GB GR
HR HU IE IS IT LI LT LU LV MC MT NL NO PL PT
RO SE SI SK TR**
Designated Extension States:
AL BA MK RS

(30) Priority: **31.07.2007 CN 200720121910 U**

(71) Applicant: **Key East Srl
00154 Rome (IT)**
(72) Inventor: **Leng, Xing Min
Nanshan District, Shenzhen (CN)**
(74) Representative: **Sarpi, Maurizio
Studio Ferrario
Via Collina, 36
00187 Roma (IT)**

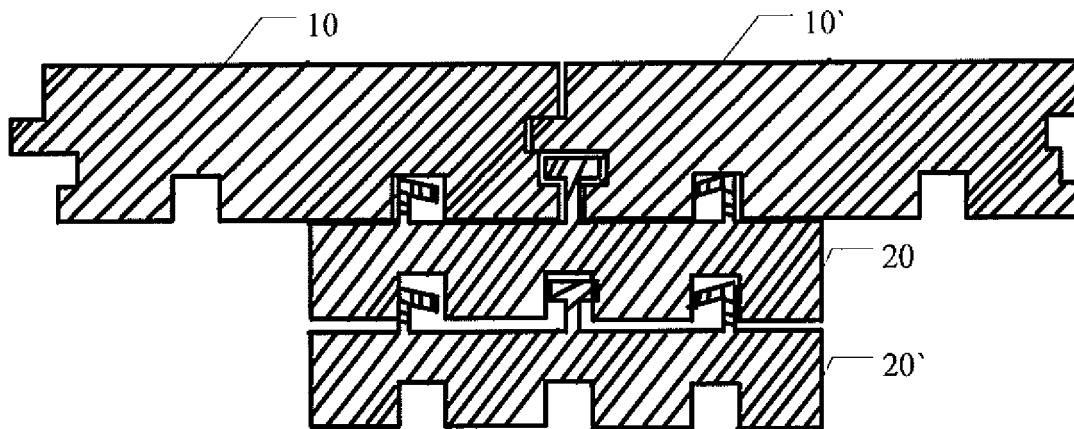
(54) **Wood flooring-multi-layer parquet elements**

(57) A new kind of self-locking system floor is act to be fixed by locking buckle and is composed of a floor having a locking structure and at least a locking buckle.

The floor and the locking buckle can be hooked to-

gether perfectly, and two pieces of boards of the floor are in a horizontal level after they are fixed together with the locking buckle.

This new kind of self-locking system floor is easy to install and remove, even a layman can make DIY.



drawing 6

Description**Technical area**

[0001] This new kind of self-locking system refers to floor, which is easy to fix with locking buckle.

Technical background

[0002] Most of the floor is fixed with cleat frame or plywood and cleat frame together.

[0003] It does damage to the structure of house in this way, and it has to choose a professional decorator to finish.

[0004] It costs higher and inconvenient specially for the temporary fixing and the disassembling in this traditional way.

New practical content

[0005] This design offers one new kind of self-locking system in technical aspect, which is easy to install and disassembly, and cost lower.

[0006] In order to solve the technical problem listed above, the new design regarding self-locking floor works in the way listed below:

one new kind of self-locking system floor which is fixed by locking buckle. The self-locking system is composed of floor having a locking structure and locking buckle.

[0007] The floor and locking buckle can hook together perfectly, and two pieces of boards of the floor are in a horizontal level after they are fixed together.

[0008] The advantageous result for the new technical way as follows:

It is easy to fix and disassembly since the floor is fixed on special plastic locking buckle, people can make DIY at home. No hole needed in the ground, no damage to the structure of house either, as well as it costs lower.

Description of drawings:**[0009]**

Drawing 1: Horizontal section of the floor with self-locking system.

Drawing 2: Horizontal section of a locking buckle.

Drawing 3: Sketch of two boards put together already.

Drawing 4: Sketch of two plastic locking buckles put together already.

Drawing 5: Sketch of two boards fixed with locking buckles already.

Drawing 6: Sketch of locking buckle after heighten-

ing.

Process of construction

[0010] The new design regarding one new kind of self-locking system floor which is fixed with locking buckle. The self-locking system is composed of floor having a locking structure and locking buckle.

[0011] The floor and locking buckle can hook together perfectly, and two pieces of boards of the floor are in a horizontal level after they are fixed together.

[0012] Drawing 1 shows the horizontal section of the floor with self-locking system.

[0013] There are a first and a second concave slots 101 and 101' in a longitudinal way at the back of the floor 10, said two slots running parallel to each other.

[0014] The first side of the floor 10 has a locking structure, that is a third protruding buckle which we call tongue 104 in the first side. The tongue runs parallel to the first and second concave slots 101 and 101' in a longitudinal way at the back of the floor.

[0015] The second side of the floor 10 also has a locking structure, that is a third concave slot which we call groove 102 in the second side of the floor, on the contrary of the tongue 104 of the first side.

[0016] Two pieces of boards of the floor can be installed with the locking buckle through the tongue of the first side of the first board and the groove of the second side of the second board.

[0017] As shown in drawings 1, 2 and 3, there is a fourth concave slot 105, which runs parallel to the tongue 104, and there is a fourth protruding buckle 103 which runs parallel to the groove 102.

[0018] The first board 10 of the floor and a second board 10' of the floor can be fixed together with the locking buckle through the tongue 104 and the groove 102, also through the fourth concave slot 105 and the fourth protruding buckle 103.

[0019] A T molding gap is formed beneath and between the fourth concave slot 105 and the fourth protruding buckle 103 after the two pieces of boards are put together, said T molding gap being a fifth concave slot 106. As a matter of fact, the fifth concave slot 106 is composed of a gap between the fourth concave slot 105 and the fourth protruding buckle 103 and another gap beneath the fourth concave slot 105 and the fourth protruding buckle 103.

[0020] The fifth concave slot 106 engages with the fifth protruding buckle (206) which is in the middle of the locking buckle.

[0021] Drawing 2 shows the horizontal section of a locking buckle 20.

[0022] There are a first and a second protruding buckles 201 and 202 in a longitudinal way at the face of the locking buckle 20, which engages with the first and second concave slots 101 and 101' in a longitudinal way at the back of the board 10, and a fifth protruding buckle 206 which engages with the fifth concave slot 106.

[0023] The first and second protruding buckle are in a clasp shape, and the fifth protruding buckle is in a T shape. 5

[0024] Drawing 3 shows a sketch of two boards put together already. 10

[0025] You will find the fifth concave slot (106) after the first board (10) and second board (10') are put together. 15

[0026] Drawing 4 shows a sketch of two plastic locking buckles put together already. 20

[0027] The locking buckle 20 and another locking buckle 20' are put together. It is possible to heighten the height of the floor in this way; it is also possible to regular the level when the ground is not straight. 25

[0028] Drawing 5 shows a sketch of two boards fixed with the locking buckles already. 30

[0029] The first board 10 and second board 10' are fixed with locking buckles 20: in this way the boards are fastened stably, obtaining a new kind of self-locking floor. 35

[0030] Drawing 6 shows a sketch of a locking buckle after heightening. 40

[0031] There could be another locking buckle 20' put under the first locking buckle 20, and also more locking buckles may follow the second locking buckle 20' in the same way according to requirement. 45

[0032] It will be possible to heighten the floor through heightening locking buckles: this is a easy way to modify the level of the ground. 50

[0033] Of course, if could be a buckle at the back of the floor and if could be concave a slot, they will work in the same way. 55

[0034] The protruding buckle and the concave slot as mentioned listed above could be in another shape, such as shape like I, triangle and trapezium. 60

[0035] The floor as mentioned above concerns hard-wood floor, bamboo floor, tile floor and engineered floor. 65

[0036] The locking buckle is one kind of resilient plastic block. 70

[0037] The new design suitable for small size house and for temporary fixing and disassembling of the floor, no professional decorator needed, no damage to the structure of the house either. 75

[0038] You can regular the height of the locking buckle if the floor don't match the height of the wall around. 80

[0039] A proper space underlay the floor for cables and electrical wires is required since there is only plastic buckle left. 85

[0040] This is a complete disclosure of a new kind of design for self-locking floor, as for the technician in this industry. If, on the basis of the concept of this new design, there will be a little change in the actual operation and the application scope, above all, the disclosure of this new design will comprise it and will not be limited to that. 90

by locking buckle, wherein said locking system is composed of floor having a locking structure and at least locking buckle; said floor and said locking buckle being hooked together perfectly, and two pieces of boards of the floor being in a horizontal level after they are fixed together with the locking buckle. 95

2. The self-locking system floor according to claim 1, comprising: a first and second concave slots (101, 101') in a longitudinal way at the back of the floor, and a first and second protruding buckles (201, 202) in a longitudinal way at the face of the locking buckle. 100

3. The self-locking system floor according to claim 1 and 2, wherein: 105

the first side of the floor has the locking structure, comprising a third protruding buckle or tongue (104) in the first side; said tongue running parallel to the first and second concave slots in a longitudinal way at the back of the floor; the second side of floor also has locking structure, comprising a third concave slot or groove (102) in the second side of the floor which engages with the tongue of the first side; two pieces of boards of the floor being installed with locking buckle through the tongue of the first side of the first board and the groove of the second side of the second board. 110

4. The self-locking system floor according to claim 3, wherein: 115

there is a fourth concave slot (105) which runs parallel to the tongue (104), and there is a fourth protruding buckle (103) which runs parallel to the groove (102); two pieces of boards of the floor are act to work together with the locking buckle through said tongue and said groove, and also through the fourth concave slot and the fourth protruding buckle; a gap (106) being formed beneath and between the fourth concave slot and the fourth protruding buckle after two pieces of boards are put together, and being called the fifth concave slot; said fifth concave slot engages with the fifth protruding buckle (206) which in the middle of the locking buckle. 120

5. The self-locking system floor according to claim 4, wherein: 125

Claims

1. A self-locking system floor which is apt to be fixed

The fifth concave slot and the fifth protruding buckle are in a T shape.

The first and second protruding buckles of the locking buckle are in a clasp shape.

7. The self-locking system floor according to claim 1,
2, 4 and 5, wherein:

5

there are concave slots on the back of the locking buckle, which opposite to the protruding buckle on the face of the locking buckle;
two pieces of the locking buckles being act to ¹⁰ be fixed together through concave slots and protruding buckle.

8. The self-locking system floor according to claim 1,
wherein:

15

the locking system is suitable for different kinds of floor like hardwood floor, bamboo floor, tile and laminated floor.

20

9. The self-locking system floor according to claim 1,
wherein:

the locking-buckle is made of plastic.

25

30

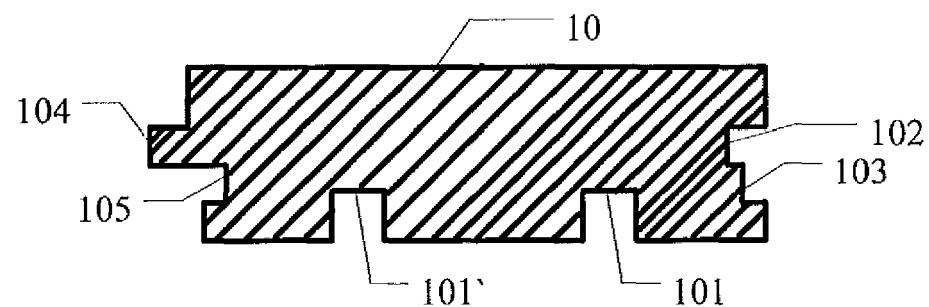
35

40

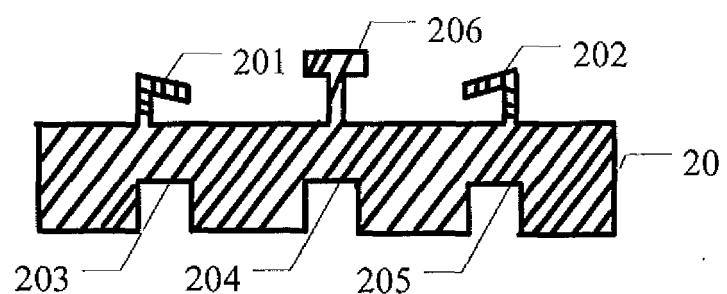
45

50

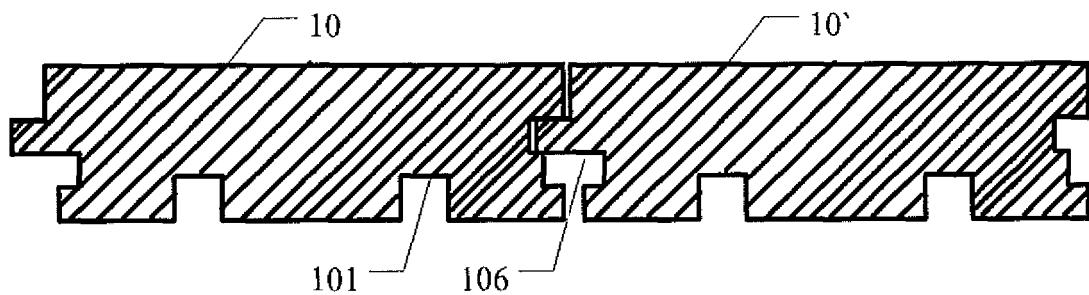
55



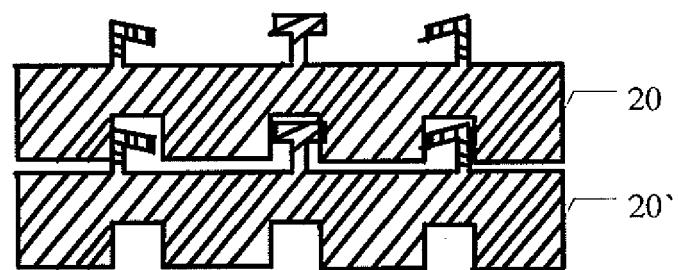
drawing 1



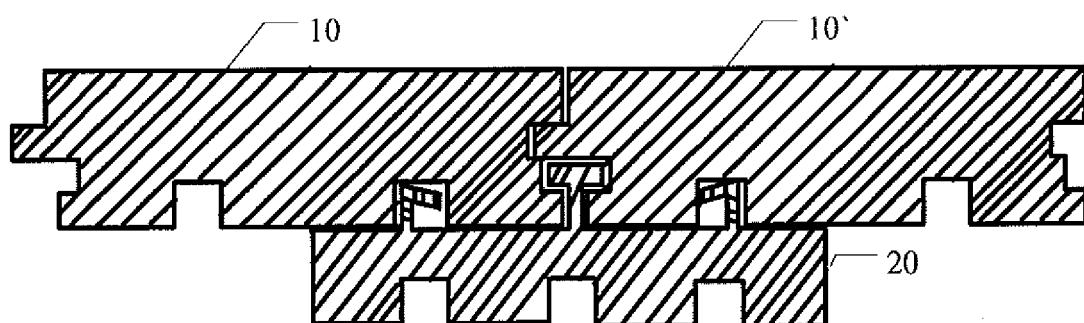
drawing 2



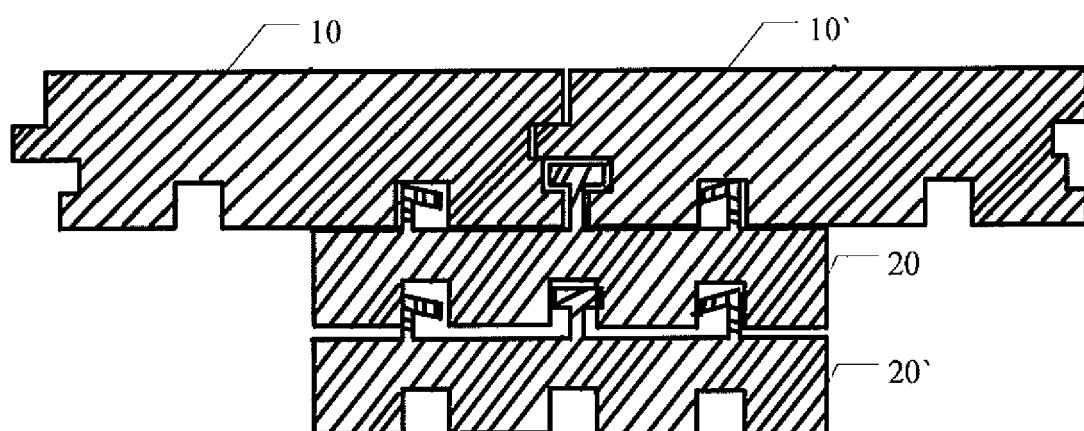
drawing 3



Drawing 4



drawing 5



drawing 6