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(54) **INSTALLATION STRUCTURE OF THE
INDOOR FLOATING DECORATING
FLOORBOARDS AND THE INSTALLATION
METHOD THEREOF**

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(57) **ABSTRACT**

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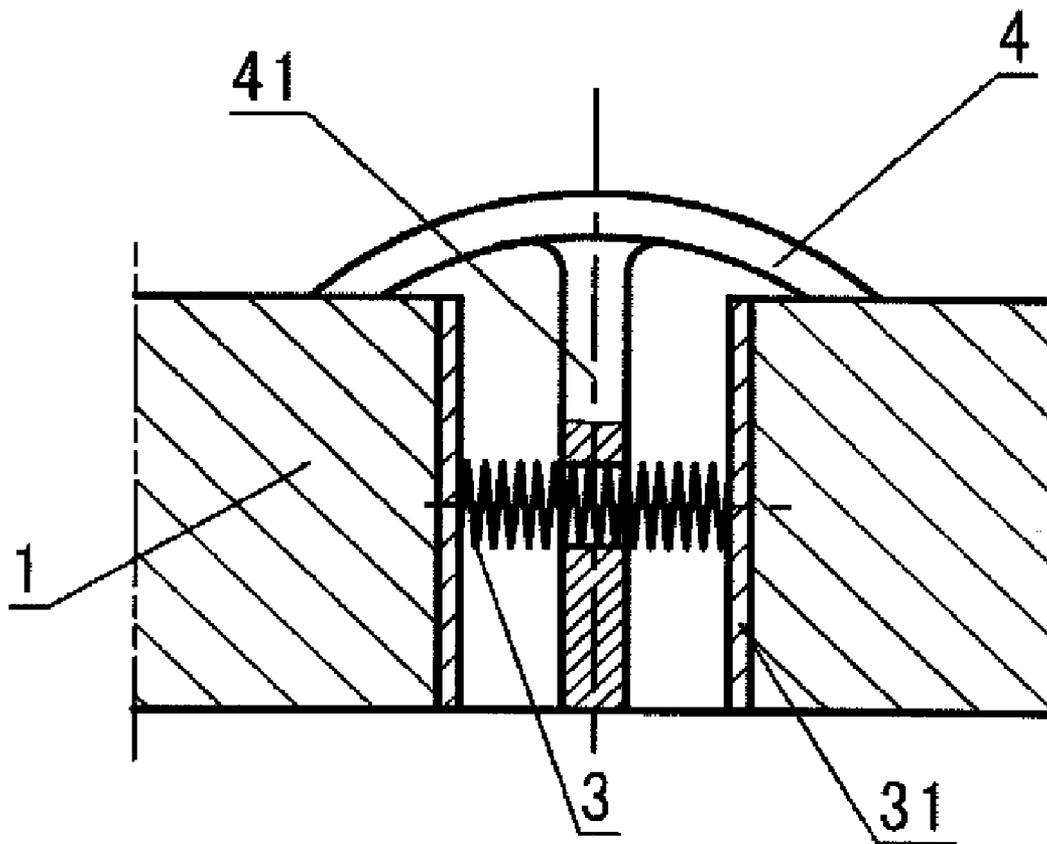
This present invention relates to an installation structure of the indoor floating decoration floorboards and the installation method thereof, and the installation structure comprises a floor main body by joining several floorboards together, a telescopic space which is equipped with mechanical elastic telescopic parts links astride the floor main body and the adjoining wall, and the parts are existed between the floor main body and the adjoining wall, and the method comprises joining the floorboards one by one to form the floor main body according to the shape and size of the floor of one room, pre-reserving a telescopic space between the floor main body and the adjoining wall, and fixing astride parts between the floor main body and the adjoining wall. The present invention can avoid various crevices, so the floor is firm and durable, and can bring high quality enjoyment to people's home life and office work.

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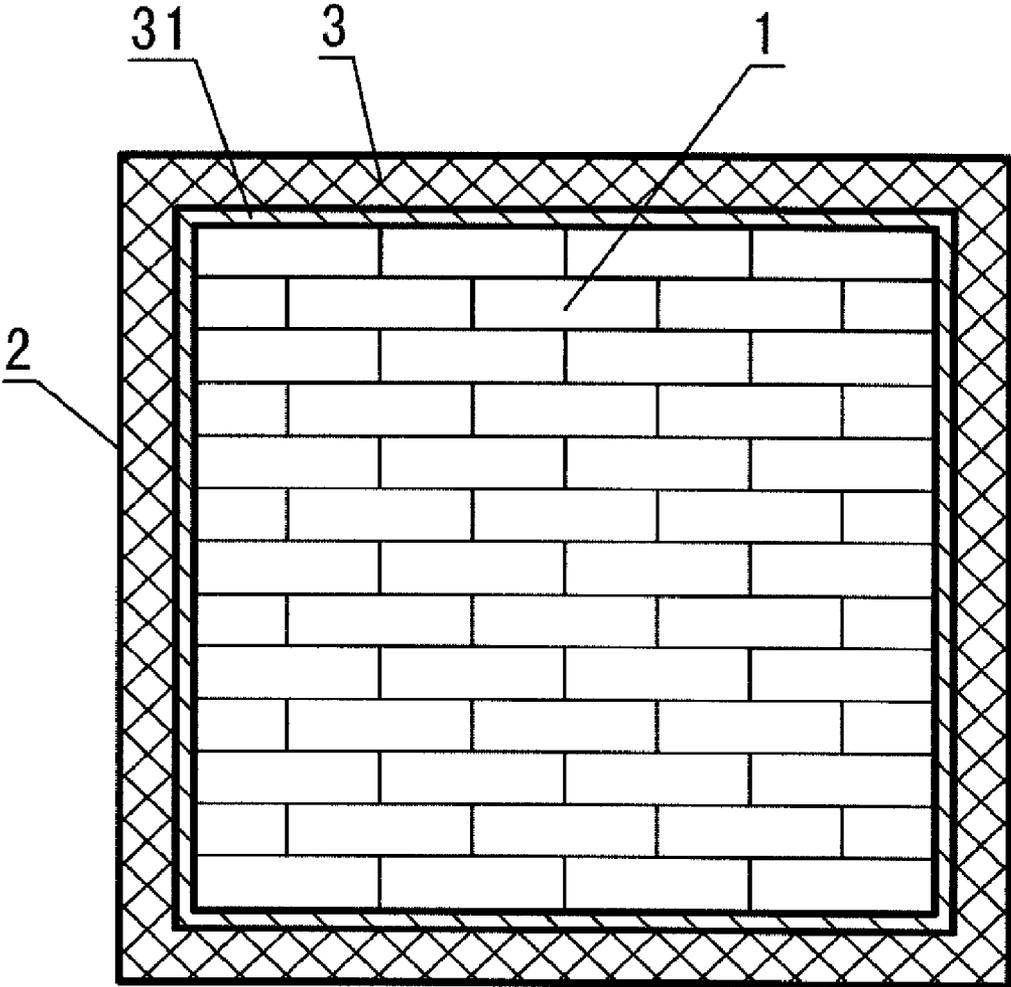


Fig. 1

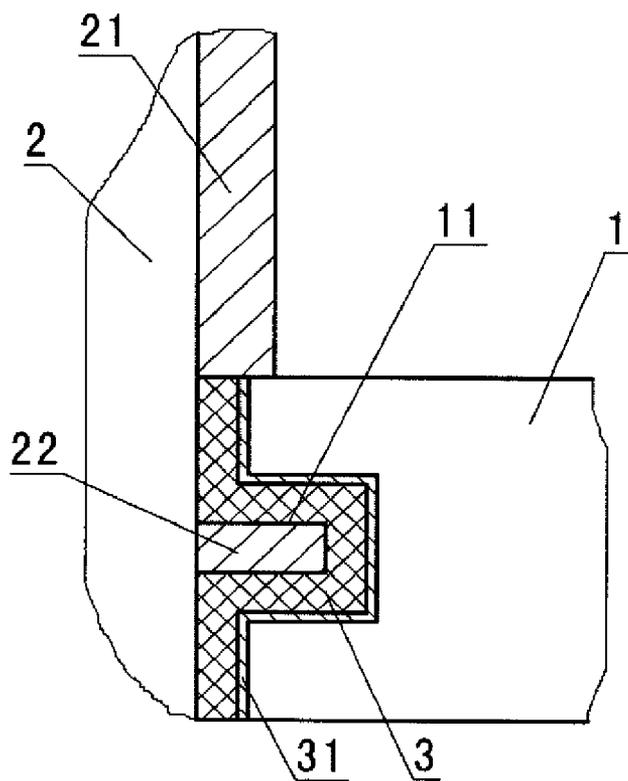


Fig. 2

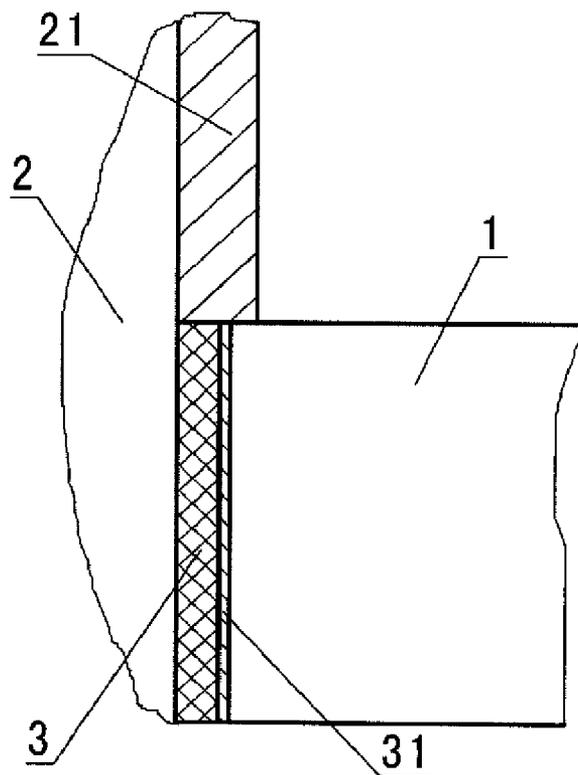


Fig. 3

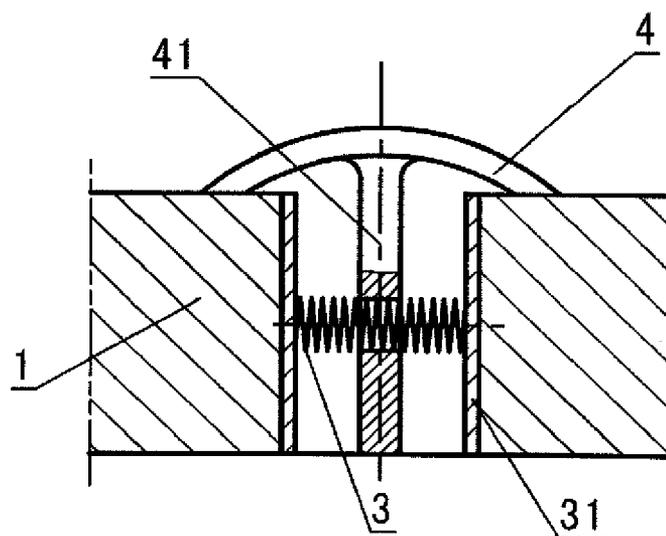


Fig. 4

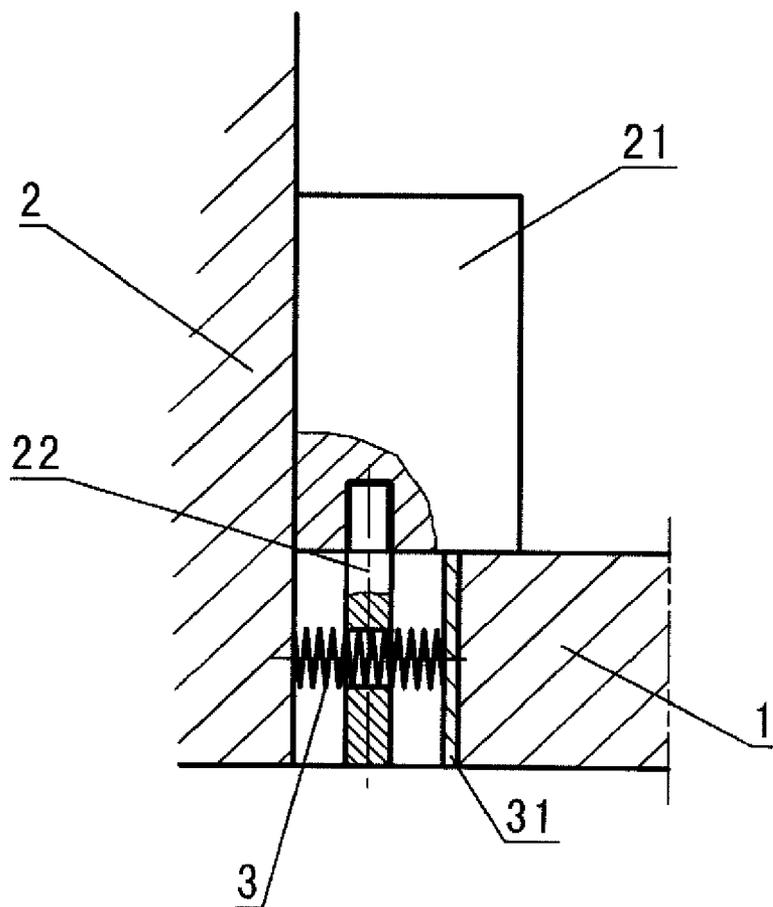


Fig. 5

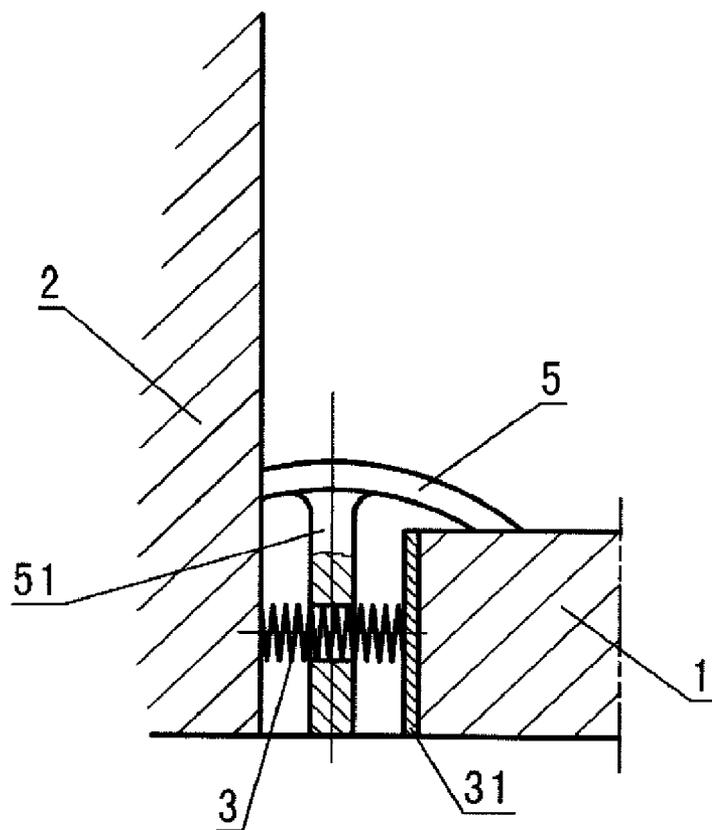


Fig. 6

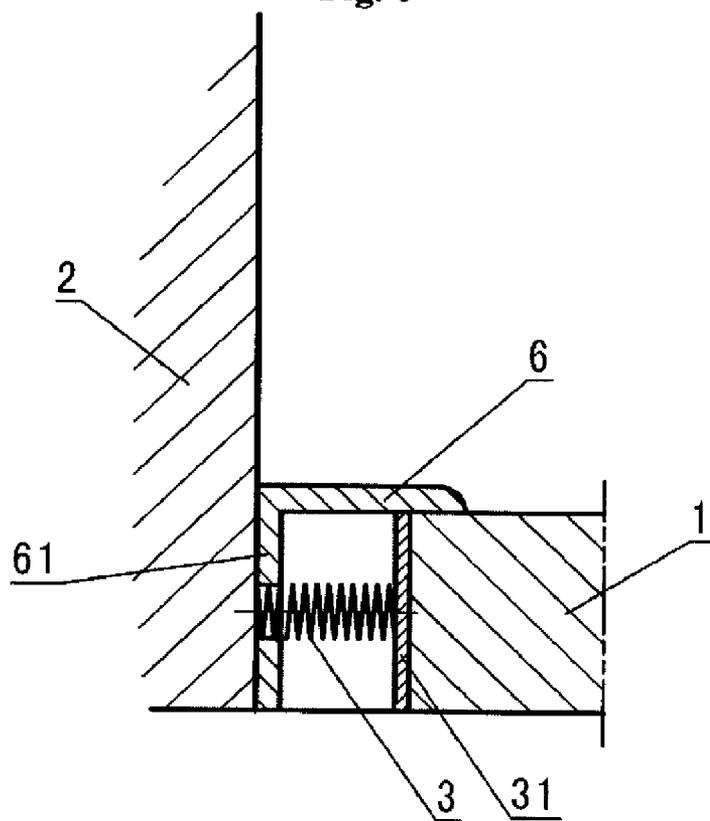


Fig. 7

**INSTALLATION STRUCTURE OF THE
INDOOR FLOATING DECORATING
FLOORBOARDS AND THE INSTALLATION
METHOD THEREOF**

**CROSS-REFERENCE TO RELATED
APPLICATIONS**

[0001] This application claims the benefit of and priority to Chinese Application No. 200610027927.X filed Jun. 21, 2006, and Chinese Application No. 200610119012.1 filed Dec. 1, 2006, the technical disclosures of which are hereby incorporated herein by reference.

FIELD OF INVENTION

[0002] The present invention relates to the field of the floor decoration technology, particularly to the field of usage and installation of the indoor floorboards and supplement materials, in particular to an installation structure of the indoor floating decoration floorboards and the installation method thereof.

DESCRIPTION OF RELATED ARTS

[0003] In modern society, people have higher and higher requests regarding the quality of life, especially the indoor environment they live in. In various indoor decorations, the most important is the floor decoration, and the comparatively popular installation method is the installation method of the floating floorboards which has mainly two types in the prior arts:

[0004] (1) Plane buckled tongue and groove installation: Applying glue on the tongue grooves of the floorboards, and gluing the floorboards, simultaneously pre-reserving the telescopic space around the floor main body for collapsing and distortion of the area produced by the future thermo-expansion and cold-shrinkage of the floor;

[0005] (2) Lock buckled floorboards installation: Processing the tongue grooves of the floorboards to be various self-locking-type buckle shapes, and self-locking each of the floorboards during installation to cause the entire installation area to be a whole body to reduce the crevices produced by thermo-expansion and cold-shrinkage of the floor itself, simultaneously pre-reserving the telescopic space around the floor main body for collapsing and distortion of the area produced by the future thermo-expansion and cold-shrinkage of the floor.

[0006] The disadvantages of the above installation (1) are that:

[0007] a. Using glue is influential to the environment;

[0008] b. Crevices will occur after the floor passes through the cold and hot circulation.

[0009] The disadvantages of the above installation (2) are that:

[0010] a. The installation is fussy for each of the floorboards should interlock each other during the installation;

[0011] b. That the four sides of each of the floorboards need the self-locking buckle shapes reduces the maximum yields of the floorboards in production and increases the production cost.

SUMMARY OF THE PRESENT INVENTION

[0012] The object of the present invention is to overcome the defects of the prior arts mentioned above to provide an

automatically adaptive responding to the thermo-expansion and cold-shrinkage of the floor, structure-simple and practical, firm and durable installation structure of the indoor floating decoration floorboards.

[0013] Another object of the present invention is to provide an installation method of the indoor floating decoration floorboards to realize the said installation structure, and that installation method assembles and unassembles conveniently, is environmental friendly, reduces the production cost, increases wood utilization ratio, and has a widespread applicable scope.

[0014] In order to realize the above objects, the installation structure of the indoor floating decoration floorboards and the installation method thereof of the present invention are as follows:

[0015] The installation structure of the indoor floating decoration floorboards comprises a floor main body by joining several floorboards together, and the main characteristics of the installation structure are that a telescopic space which is equipped with mechanical elastic telescopic parts links astride the floor main body and the adjoining wall, the mechanical elastic telescopic parts are existed between the floor main body and the adjoining wall, and transition spaces inside the floor main body are also equipped with the mechanical elastic telescopic parts linking astride and propped against the adjoining floorboards.

[0016] One end of the floor main body of the installation structure of the indoor floating decoration floorboards is fixed on the wall, and the mechanical elastic telescopic parts are arranged astride between the opposite end of the floor main body and the adjoining wall.

[0017] The mechanical elastic telescopic parts are arranged astride between the around of the floor main body of the installation structure of the indoor floating decoration floorboards and the adjoining wall.

[0018] The transition spaces inside the floor main body of the installation structure of the indoor floating decoration floorboards are equipped with transition strips, the lower parts of which are equipped with fixed axes extending along the vertical direction of the transition strips, and the fixed axes are equipped with the mechanical elastic telescopic parts, two ends of each of which link astride and are propped against the adjoining floorboards.

[0019] A skirting is fixed on the wall adjoining the floor main body of the installation structure of the indoor floating decoration floorboards, and the mechanical elastic telescopic parts are arranged astride between the skirting and the floor main body.

[0020] A skirting is fixed on the wall adjoining the floor main body of the installation structure of the indoor floating decoration floorboards, and the mechanical elastic telescopic parts are fixed on the skirting and link astride and are propped against the wall and the floor main body.

[0021] The lower part of the skirting of the installation structure of the indoor floating decoration floorboards is equipped with a fixed axis extending along the vertical direction, and the fixed axis is equipped with the mechanical elastic telescopic parts, two ends of each of which link astride and are propped against the wall and the floor main body.

[0022] Edge sealing strips are fixed on the wall adjoining the floor main body of the installation structure of the indoor floating decoration floorboards, and the mechanical elastic

telescopic parts are arranged astride between the edge sealing strips and the floor main body.

[0023] Edge sealing strips are fixed on the wall adjoining the floor main body of the installation structure of the indoor floating decoration floorboards, and the edge sealing strips are equipped with the mechanical elastic telescopic parts, two ends of each of which link astride and are propped against the wall and the floor main body.

[0024] The lower parts of the edge sealing strips of the installation structure of the indoor floating decoration floorboards are equipped with fixed axes extending along the vertical direction, and the fixed axes are equipped with the mechanical elastic telescopic parts, two ends of each of which link astride and are propped against the wall and the floor main body.

[0025] Contractive buckles are fixed on the wall adjoining the floor main body of the installation structure of the indoor floating decoration floorboards, and the mechanical elastic telescopic parts are arranged astride between the contractive buckles and the floor main body.

[0026] One end of each of the mechanical elastic telescopic parts of the installation structure of the indoor floating decoration floorboards is embedded in the inner walls, which are jointed to the wall, of the contractive buckles, and the other end is propped against the sides of the floor main body adjoining the contractive buckles.

[0027] The mechanical elastic telescopic parts of the installation structure of the indoor floating decoration floorboards are springs or spring laminations, and the interface of the springs or spring laminations with the floorboards is equipped with elastic buffering materials, and the springs are drum-shaped springs, laminated springs, annular springs, butterfly-shaped springs, rubber springs and nitrogen springs, and the elastic buffering materials are the elastic rubber materials, hydrogenated thermoplastic elastomer TPE or hydrogenated thermoplastic rubber SEBS.

[0028] The main characteristics of the installation method of the indoor floating decoration floorboards to realize the said installation structure are that the method comprises the following steps:

[0029] (1) Joining the floorboards one by one to form the floor main body according to the shape and size of the floor of one room;

[0030] (11) Forming the transition spaces inside the floor main body;

[0031] (12) Arranging astride the mechanical elastic telescopic parts in the transition spaces, and fixing astride the mechanical elastic telescopic parts between the adjoining floorboards;

[0032] (2) Pre-reserving a telescopic space between the floor main body and the adjoining wall;

[0033] (3) Fixing astride the mechanical elastic telescopic parts between the floor main body and the adjoining wall.

[0034] One end of each of the mechanical elastic telescopic parts of the installation method of the indoor floating decoration floorboards is embedded in the floor main body, and the step (3) is: Propping the other end of each of the mechanical elastic telescopic parts against the wall adjoining the floor main body.

[0035] One end of each of the mechanical elastic telescopic parts of the installation method of the indoor floating decoration floorboards is embedded in one floorboard of the floor main body, and the step (12) is: Propping the other end

of each of the mechanical elastic telescopic parts against another adjoining floorboard in the transition space.

[0036] The transition spaces inside the floor main body of the installation method of the indoor floating decoration floorboards are equipped with the transition strips, the lower parts of which are equipped with fixed axes extending along the vertical direction of the transition strips, and the fixed axes are equipped with the mechanical elastic telescopic parts, and the steps (12) is: Linking astride two ends of each of the mechanical elastic telescopic parts with and propping them against the adjoining floorboards in the transition spaces.

[0037] The step (3) of the installation method of the indoor floating decoration floorboards is:

[0038] (31) Fixing one end of the floor main body on the adjoining wall;

[0039] (32) Fixing astride the mechanical elastic telescopic parts between the oppositely free end of the floor main body and the adjoining wall.

[0040] One end of each of the mechanical elastic telescopic parts of the installation method of the indoor floating decoration floorboards is embedded in the oppositely free end of the floor main body, and the step (32) is: Propping another end of each of the mechanical elastic telescopic parts against the wall adjoining the oppositely free end of the floor main body.

[0041] Before the step (3), the installation method of the indoor floating decoration floorboards further includes the following step:

[0042] (21) Fixing the skirting on the wall adjoining the floor main body.

[0043] And the step (3) is: Fixing astride the mechanical elastic telescopic parts between the said skirting and the floor main body.

[0044] One end of each of the mechanical elastic telescopic parts of the installation method of the indoor floating decoration floorboards is embedded in the floor main body, and the step (3) is: Propping the other end of each of the mechanical elastic telescopic parts against the skirting adjoining the floor main body.

[0045] The lower part of the skirting of the installation method of the indoor floating decoration floorboards is equipped with a fixed axis extending along the vertical direction, and the fixed axis is equipped with the mechanical elastic telescopic parts, and the step (3) is: Linking astride two ends of each of the mechanical elastic telescopic parts with and propping them against the wall and the floor main body.

[0046] Before the step (3), the installation method of the indoor floating decoration floorboards further includes the following step:

[0047] (21) Fixing the edge sealing strips on the wall adjoining the floor main body.

[0048] And the step (3) is: Fixing astride the mechanical elastic telescopic parts between the said edge sealing strips and the floor main body.

[0049] One end of each of the mechanical elastic telescopic parts of the installation method of the indoor floating decoration floorboards is embedded in the floor main body, and the step (3) is: Propping the other end of each of the mechanical elastic telescopic parts against the edge sealing strips adjoining the floor main body.

[0050] The lower parts of the edge sealing strips of the installation method of the indoor floating decoration floor-

boards are equipped with fixed axes extending along the vertical direction, and the fixed axes are equipped with the mechanical elastic telescopic parts, and the step (3) is: Linking astride two ends of each of the mechanical elastic telescopic parts with and propping them against the wall and the floor main body.

[0051] Before the step (3), the installation method of the indoor floating decoration floorboards further includes the following step:

[0052] (21) Fixing the contractive buckles on the wall adjoining the floor main body.

[0053] And the step (3) is: Fixing astride the mechanical elastic telescopic parts between the said contractive buckles and the floor main body.

[0054] One end of each of the mechanical elastic telescopic parts of the installation method of the indoor floating decoration floorboards is embedded in the floor main body, and the step (3) is: Propping the other end of each of the mechanical elastic telescopic parts against the contractive buckles adjoining the floor main body.

[0055] One end of each of the mechanical elastic telescopic parts of the installation method of the indoor floating decoration floorboards is embedded in the inner walls, which are jointed to the wall, of the contractive buckles, and the step (3) is: Propping the other end of each of the mechanical elastic telescopic parts against the sides of the floor main body adjoining the contractive buckles.

[0056] With the installation structure of the indoor floating decorating floorboards and the installation method thereof of the present invention, because of the mechanical elastic telescopic parts fixed in the telescopic space between the floor main body and the adjoining wall and in the transition spaces inside the floor main body during the installation, with the characteristics of the relatively large telescopic scope and the relatively large durable strong elasticity of the mechanical elastic telescopic parts, the floor is propped up tightly by the elasticity produced by the mechanical elastic telescopic parts, and the retractility of the mechanical elastic telescopic parts themselves is used to satisfy the geometric changes of the floor produced by the cold and hot circulation or the dry and wet circulation, and because of the ceaseless telescopic adjustment of the mechanical elastic telescopic parts themselves, the floor at different geometric figures can receive the same pressure dynamically, which can avoid various crevices, so the floor is firm and durable, at the same time because the floor is propped up tightly by the mechanical force, no glue is needed to glue the floorboards during the floor installation, which is environmental friendly. Moreover the installation structure and the installation method of the present invention assembles and unassembles easily just by putting in or taking out the mechanical elastic telescopic parts, and it is flexible and convenient to determine the optional amounts of the mechanical elastic telescopic parts installed in somewhere of the floor main body according to different requirements, moreover the joining of the floorboards mainly depends on the elasticity produced by the mechanical elastic telescopic parts around, the floorboards themselves need no lock buckles, and just need the simple plane buckle structure, which can increase the maximum yields of the floorboards in production, reduce the production cost greatly, and increase the wood utilization ratio. So the installation structure and the installation method of the

present invention can be applied in many fields and bring high quality enjoyment to people's home life and office work.

BRIEF DESCRIPTION OF DRAWINGS

[0057] FIG. 1 is a schematic view of the whole appearance of the installation structure of the indoor floating decorating floorboards of the present invention.

[0058] FIG. 2 is a part schematic view of the linkage of the groove part of the floor main body and the adjoining wall with the mechanical elastic telescopic parts during the installation of the indoor floating decorating floorboards of the present invention.

[0059] FIG. 3 is a part schematic view of the linkage of the plane part of the floor main body and the adjoining wall with the mechanical elastic telescopic parts during the installation of the indoor floating decorating floorboards of the present invention.

[0060] FIG. 4 is a part schematic cutaway view of the linkage of the floorboards of the transition spaces with the mechanical elastic telescopic parts fixed on the transition strips during the installation of the indoor floating decorating floorboards of the present invention.

[0061] FIG. 5 is a part schematic cutaway view of the linkage of the wall and the floor main body with the mechanical elastic telescopic parts fixed on the skirting during the installation of the indoor floating decorating floorboards of the present invention.

[0062] FIG. 6 is a part schematic cutaway view of the linkage of the wall and the floor main body with the mechanical elastic telescopic parts fixed on the edge sealing strips during the installation of the indoor floating decorating floorboards of the present invention.

[0063] FIG. 7 is a part schematic cutaway view of the linkage of the wall and the floor main body with the mechanical elastic telescopic parts fixed on the telescopic buckles during the installation of the indoor floating decorating floorboards of the present invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

[0064] In order to understand the technical content of the present invention clearly, the present invention is farther exemplified by reference to the examples.

[0065] Please refer to FIG. 1~7, and the installation structure of the indoor floating decorating floorboards comprises a floor main body 1 by joining several floorboards together, wherein a telescopic space which is equipped with mechanical elastic telescopic parts 3 links astride the floor main body 1 and the adjoining wall 2, and the mechanical elastic telescopic parts 3 are existed between the floor main body 1 and the adjoining wall 2; and transition spaces inside the floor main body are also equipped with the mechanical elastic telescopic parts 3 linking astride and propped against the adjoining floorboards. Also the transition spaces inside the floor main body 1 can be equipped with transition strips 4, the lower parts of which are equipped with fixed axes 41 extending along the vertical direction of the transition strips 4, the fixed axes 41 are equipped with the mechanical elastic telescopic parts 3, two ends of each of which link astride and are propped against the adjoining floorboards. Moreover, in a preferred embodiment, a skirting 21 is fixed on the wall 2 adjoining the floor main body 1, and the mechanical elastic

telescopic parts 3 are arranged astride between the skirting 21 and the floor main body 1. And the lower part of the skirting 21 can also be equipped with a fixed axis 22 extending along the vertical direction, the fixed axis 22 is equipped with the mechanical elastic telescopic parts 3, two ends of each of which link astride and are propped against the wall 2 and the floor main body 1.

[0066] Moreover, edge sealing strips 5 can be fixed on the wall 2 adjoining the floor main body 1, and the mechanical elastic telescopic parts 3 are arranged astride between the edge sealing strips and the floor main body 1. And the lower parts of the edge sealing strips 5 are equipped with fixed axes 51 extending along the vertical direction, and the fixed axes 51 are equipped with the mechanical elastic telescopic parts 3, two ends of which link astride and are propped against the wall 2 and the floor main body 1.

[0067] Or, contractive buckles 6 can be fixed on the wall 2 adjoining the floor main body 1, and the mechanical elastic telescopic parts 3 are arranged astride between the contractive buckles 6 and the floor main body 1, wherein one end of each of the mechanical elastic telescopic parts 3 is embedded in the inner walls 61, which are jointed to the wall 2, of the contractive buckles 6, and the other end is propped against the sides of the floor main body 1 adjoining the contractive buckles 6.

[0068] The mechanical elastic telescopic parts 3 can be springs or spring laminations, and the interface of the springs or spring laminations with the floorboards is equipped with elastic buffering materials 31, and the springs can be drum-shaped springs, laminated springs, annular springs, butterfly-shaped springs, rubber springs or nitrogen springs, of course be other shape springs according to conditions, and the elastic buffering materials 31 are the elastic rubber materials, hydrogenated thermoplastic elastomer TPE or hydrogenated thermoplastic rubber SEBS, or other elastic soft materials.

[0069] The nitrogen spring is an elastic element. First, high pressure nitrogen is sealed in a certain container, and condensed by an outside force through a plunger lever, then a certain elastic force is obtained from the expansion of the high pressure nitrogen when removing the outside force. Please refer to the following links for the detailed description of the technology:

[0070] (1) <http://www.888th.com.cn/article/show.asp?id=6>;

[0071] (2) <http://www.mw35.com/article/apply/8219.html>.

[0072] In the first embodiment of the present invention, one end of the floor main body 1 can be fixed on the wall 2, and the mechanical elastic telescopic parts 3 are arranged astride between the opposite end of the floor main body 1 and the adjoining wall 2, which can save the raw and processed materials, and the floor has a better stability.

[0073] In the second embodiment of the present invention, the mechanical elastic telescopic parts 3 can be arranged astride between the around of the floor main body 1 and the adjoining wall 2, which can improve the floor's ability adapting to the hot & cold circulation and the dry & wet circulation, and is particularly suitable for the installation of the floor materials which are not treated specially and will distort greatly with the environmental changes.

[0074] The installation method of the indoor floating decoration floorboards to realize the said installation structure comprises following steps:

[0075] (1) Joining the floorboards one by one to form the floor main body 1 according to the shape and size of the floor of one room, and this step further includes following steps:

[0076] (11) Forming the transition spaces inside the floor main body 1;

[0077] (12) Arranging astride the mechanical elastic telescopic parts 3 in the transition spaces, and fixing astride the mechanical elastic telescopic parts 3 between the adjoining floorboards; And one end of each of the mechanical elastic telescopic parts is embedded directly in one floorboard of the floor main body, then this step is: Propping the other end of each of the mechanical elastic telescopic parts against another adjoining floorboard in the transition space; furthermore, the mechanical elastic telescopic parts 3 can be assembled with the floor transition strips 4 according to the aforementioned method to form a spring transition strips, then this step is: Linking astride two ends of each of the mechanical elastic telescopic parts with and propping them against the floorboards in the transition space.

[0078] (2) Pre-reserving a telescopic space between the floor main body 1 and the adjoining wall 2; and this step can further includes flowing steps:

[0079] (21) Fixing the skirting 21 on the wall 2 adjoining the floor main body 1; and using the edge sealing strips or contractive buckles;

[0080] (3) Fixing astride the mechanical elastic telescopic parts 3 between the floor main body 1 and the adjoining wall 2/the skirting 21 of the adjoining wall 2/the edge sealing strips 5 of the adjoining wall 2/the contractive buckles 6 of the adjoining wall 2; and corresponding to the first embodiment, this step can also be:

[0081] (31) Fixing one end of the floor main body 1 on the adjoining wall 2;

[0082] (32) Fixing astride the mechanical elastic telescopic parts 3 between the opposite end of the floor main body 1 and the adjoining wall 2; or

[0083] (31') Fixing one end of the floor main body 1 on the skirting 21 of the adjoining wall 2;

[0084] (32') Fixing two ends of each of the astride the mechanical elastic telescopic parts 3 between the opposite end of the floor main body 1 and the skirting 21 of the adjoining wall 2, thus one end of each of the mechanical elastic telescopic parts 3 is embedded in the floor main body 1, the other end of each of the mechanical elastic telescopic parts 3 is propped against the skirting 21 adjoining the floor main body 1, and the mechanical elastic telescopic parts 3 can be assembled with the floor skirting 21 according to the aforementioned method to form a mechanical elastic telescopic part skirting, then this step is: Linking astride two ends of each of the mechanical elastic telescopic parts with and propping them against the wall 2 and the floor main body 1; or

[0085] (31'') Fixing one end of the floor main body 1 on the edge sealing strips 5 of the adjoining wall 2;

[0086] (32'') Fixing astride the mechanical elastic telescopic parts 3 between the opposite end of the floor main body 1 and the edge sealing strips 5 of the adjoining wall 2, thus one end of each of the mechanical elastic telescopic parts 3 is embedded in

the floor main body 1, the other end of each of the mechanical elastic telescopic parts 3 is propped against the edge sealing strips 5 adjoining the floor main body 1, and the mechanical elastic telescopic parts 3 can be assembled with the floor edge sealing strips 5 according to the aforementioned method to form a mechanical elastic telescopic part edge sealing strips, then this step is: Linking astride two ends of each of the mechanical elastic telescopic parts with and propping them against the wall 2 and the floor main body 1; or

[0087] (31") Fixing one end of the floor main body 1 on the telescopic buckles 6 of the adjoining wall 2;

[0088] (32") Fixing astride the mechanical elastic telescopic parts 3 between the opposite end of the floor main body 1 and the telescopic buckles 6 of the adjoining walls 2, thus one end of each of the mechanical elastic telescopic parts 3 is embedded in the floor main body 1, the other end of each of the mechanical elastic telescopic parts 3 is propped against the telescopic buckles 6 adjoining the floor main body 1, and the mechanical elastic telescopic parts 3 can be assembled with the floor telescopic buckles 6 according to the aforementioned method to form a mechanical elastic telescopic part telescopic buckles, then this step is: Linking astride the mechanical elastic telescopic parts 3 with and propping them against the wall 2 and the floor main body 1.

[0089] Please refer to FIG. 2 again, and FIG. 2 is a part schematic view of the linkage of the groove part of the floor main body 1 and the adjoining wall 2 with the mechanical elastic telescopic parts 3, wherein the inside wall of the groove 11 of the floor main body 1 is equipped with the mechanical elastic telescopic parts 3, and a protruding block 22 is fixed on the corresponding position of the wall 2, the front of which has a shape engaged with the groove 11, thus the protruding block 22 can be inserted into the groove 11 to process the copulate installation.

[0090] Please refer to FIG. 3 again, and FIG. 3 is a part schematic view of the linkage of the plane part of the floor main body 1 and the adjoining wall 2 with the mechanical elastic telescopic parts, and under this condition, the mechanical elastic telescopic parts are just fixed directly on the plane part of the floor main body 1 and linked with the wall 2.

[0091] The following points should be noticed in the actual usage:

[0092] (1) The effect is best when the mechanical elastic telescopic parts are the drum-shaped springs, and the maximum value of the elasticity of the spring can not exceed the maximum pressure the sides of the floorboards can withstand.

[0093] (2) The interface of the springs or spring laminations with the floorboards can be equipped with elastic buffering materials, such as elastic rubber materials and so on, thus the part received force can be buffered, and the telescopic remaining quantity of the floor can be increased.

[0094] (3) All types of the mechanical elastic telescopic parts, drum-shaped springs, laminated springs, annular springs or butterfly-shaped springs or spring lamina-

tions, can be used single or combined, and also one end can be fixed on the wall, the other can be telescopic freely.

[0095] (4) The spring can be assembled with the supplement materials such as the floor skirting, transition strips, edge sealing strips, telescopic buckles and so on to form spring skirting, spring transition strips, spring edge sealing strips, spring telescopic buckles and so on.

[0096] With the installation structure of the indoor floating decorating floorboards and the installation method thereof described above, because of the mechanical elastic telescopic parts 3 fixed in the telescopic space between the floor main body 1 and the adjoining wall 2 and in the transition spaces inside the floor main body 1 during the installation, with the characteristics of the relatively large telescopic scope and the relatively large durable strong elasticity of the mechanical elastic telescopic parts 3, the floor is propped up tightly by the elasticity produced by the mechanical elastic telescopic parts 3, and the retractility of the mechanical elastic telescopic parts 3 themselves is used to satisfy the geometric changes of the floor produced by the cold & hot circulation and the dry & wet circulation, and because of the ceaseless telescopic adjustment of the mechanical elastic telescopic parts 3 themselves, the floor at different geometric figures can receive the same pressure dynamically, which can avoid various crevices, so the floor is firm and durable, at the same time because the floor is propped up tightly by the mechanical force, no glue is needed to glue the floorboards during the floor installation, which is environmental friendly. Moreover the installation structure and the installation method of the present invention assembles and unassembles easily just by putting in or taking out the mechanical elastic telescopic parts 3, and it is flexible and convenient to determine the optional amounts of the mechanical elastic telescopic parts 3 installed in somewhere of the floor main body 1 according to different requirements, moreover the joining of the floorboards mainly depends on the elasticity produced by the mechanical elastic telescopic parts 3 around, the floorboards themselves need no lock buckles, and just need the simple plane buckle structure, which can increase the maximum yields of the floorboards in production, reduce the production cost greatly, and increase the wood utilization ratio. So the installation structure and the installation method of the present invention can be applied in many fields and bring high quality enjoyment to people's home life and office work.

[0097] In the present specification, the present invention has been described according to the particular embodiments. But it is obvious that these embodiments can be modified or changed without departure from the spirit and scope of the present invention. Therefore, the specification and drawings described above are exemplary only and not intended to be limiting.

What is claimed is:

1. An installation structure of the indoor floating decoration floorboards, comprising a floor main body by joining several floorboards together, characterized in that a telescopic space which is equipped with mechanical elastic telescopic parts links astride the floor main body and the adjoining wall, and the mechanical elastic telescopic parts is existed between the floor main body and the adjoining wall; and transition spaces inside the floor main body are also equipped with the mechanical elastic telescopic parts linking astride and propped against the adjoining floorboards.

2. The installation structure of the indoor floating decoration floorboards of claim 1, characterized in that one end of the floor main body is fixed on the wall, and the mechanical elastic telescopic parts are arranged astride between the opposite end of the floor main body and the adjoining wall.

3. The installation structure of the indoor floating decoration floorboards of claim 1, characterized in that the mechanical elastic telescopic parts are arranged astride between the around of the floor main body and the adjoining wall.

4. The installation structure of the indoor floating decoration floorboards of claim 1, characterized in that the transition spaces inside the floor main body are equipped with transition strips, the lower parts of which are equipped with fixed axes extending along the vertical direction of the transition strips, and the fixed axes are equipped with the mechanical elastic telescopic parts, two ends of each of which link astride and are propped against the adjoining floorboards.

5. The installation structure of the indoor floating decoration floorboards of claim 4, characterized in that a skirting is fixed on the wall adjoining the floor main body, and the mechanical elastic telescopic parts are arranged astride between the skirting and the floor main body, or the mechanical elastic telescopic parts are fixed on the skirting and link astride and are propped against the wall and the floor main body.

6. The installation structure of the indoor floating decoration floorboards of claim 5 characterized in that the lower part of the skirting is equipped with a fixed axis extending along the vertical direction, and the fixed axis is equipped with the mechanical elastic telescopic parts, two ends of each of which link astride and are propped against the wall and the floor main body.

7. The installation structure of the indoor floating decoration floorboards of claim 4, characterized in that edge sealing strips are fixed on the wall adjoining the floor main body, and the mechanical elastic telescopic parts are arranged astride between the edge sealing strips and the floor main body, or the edge sealing strips are equipped with the mechanical elastic telescopic parts, two ends of each of which link astride and are propped against the wall and the floor main body.

8. The installation structure of the indoor floating decoration floorboards of claim 7, characterized in that the lower parts of the edge sealing strips are equipped with fixed axes extending along the vertical direction, and the fixed axes are equipped with the mechanical elastic telescopic parts, two ends of each of which link astride and are propped against the wall and the floor main body.

9. The installation structure of the indoor floating decoration floorboards of claim 4, characterized in that contractive buckles are fixed on the wall adjoining the floor main body, and the mechanical elastic telescopic parts are arranged astride between the contractive buckles and the floor main body, or one end of the mechanical elastic telescopic part is embedded in the inner walls, which are jointed to the wall, of the contractive buckles, and the other end is propped against the sides of the floor main body adjoining the contractive buckles.

10. The installation structure of the indoor floating decoration floorboards of claim 4, characterized in that the mechanical elastic telescopic parts are springs or spring

laminations, and the interface of the springs or spring laminations with the floorboards is equipped with elastic buffering materials, and the springs are drum-shaped springs, laminated springs, annular springs, butterfly-shaped springs, rubber springs and nitrogen springs, and the elastic buffering materials are elastic rubber materials, hydrogenated thermoplastic elastomer TPE or hydrogenated thermoplastic rubber SEBS.

11. An installation method of the indoor floating decoration floorboards to realize the installation structure of claim 1 comprising the following steps:

- (1) Joining the floorboards one by one to form a floor main body according to the shape and size of the floor of one room;
- (11) Forming a transition spaces inside the floor main body;
- (12) Arranging astride the mechanical elastic telescopic parts in the transition spaces, and fixing astride the mechanical elastic telescopic parts between the adjoining floorboards;
- (2) Pre-reserving a telescopic space between the floor main body and the adjoining wall;
- (3) Fixing astride the mechanical elastic telescopic parts between the floor main body and the adjoining wall.

12. The installation method of the indoor floating decoration floorboards of claim 11, characterized in that one end of each of the mechanical elastic telescopic parts is embedded in the floor main body, and the step (3) is: Propping the other end of each of the mechanical elastic telescopic parts against the wall adjoining the floor main body.

13. The installation method of the indoor floating decoration floorboards of claim 11, characterized in that one end of each of the mechanical elastic telescopic parts is embedded in one floorboard of the floor main body, and the step (12) is: Propping the other end of each of the mechanical elastic telescopic parts against another adjoining floorboard in the transition space; or

The transition spaces inside the floor main body are equipped with the transition strips, the lower parts of which are equipped with fixed axes extending along the vertical direction of the transition strips, and the fixed axes are equipped with the mechanical elastic telescopic parts, and the steps (12) is: Linking astride two ends of each of the mechanical elastic telescopic parts with and propping them against the adjoining floorboards in the transition spaces.

14. The installation method of the indoor floating decoration floorboards claimed of claim 11, characterized in that the step (3) is:

- (31) Fixing one end of the floor main body on the adjoining wall;
- (32) Fixing astride the mechanical elastic telescopic parts between the oppositely free end of the floor main body and the adjoining wall.

15. The installation method of the indoor floating decoration floorboards claimed of claim 14, characterized in that one end of each of the mechanical elastic telescopic parts is embedded in the oppositely free end of the floor main body, and the step (32) is: Propping another end of each of the mechanical elastic telescopic parts against the wall adjoining the oppositely free end of the floor main body.

16. The installation method of the indoor floating decoration floorboards of claim 11, characterized in that before the step (3), the installation method further includes the following step:

(21) Fixing the skirting on the wall adjoining the floor main body;

And the step (3) is: Fixing astride the mechanical elastic telescopic parts between the said skirting and the floor main body.

17. The installation method of the indoor floating decoration floorboards of claim 16, characterized in that one end of each of the mechanical elastic telescopic parts is embedded in the floor main body, and the step (3) is: Propping the other end of each of the mechanical elastic telescopic parts against the skirting adjoining the floor main body; or

The lower part of the skirting is equipped with a fixed axis extending along the vertical direction, and the fixed axis is equipped with the mechanical elastic telescopic parts, and the step (3) is: Linking astride two ends of each of the mechanical elastic telescopic parts with and propping them against the wall and the floor main body.

18. The installation method of the indoor floating decoration floorboards of claim 11, characterized in that before the step (3), the installation method further includes the following step:

(21) Fixing the edge sealing strips on the wall adjoining the floor main body;

And the step (3) is: Fixing astride the mechanical elastic telescopic parts between the said edge sealing strips and the floor main body.

19. The installation method of the indoor floating decoration floorboards of claim 18, characterized in that one end of each of the mechanical elastic telescopic parts is embedded in the floor main body, and the step (3) is: Propping the

other end of each of the mechanical elastic telescopic parts against the edge sealing strips adjoining the floor main body; or

The lower parts of the edge sealing strips are equipped with fixed axes extending along the vertical direction, and the fixed axes are equipped with the mechanical elastic telescopic parts, and the step (3) is: Linking astride two ends of each of the mechanical elastic telescopic parts with and propping them against the wall and the floor main body.

20. The installation method of the indoor floating decoration floorboards of claim 11, characterized in that before the step (3), the installation method further includes the following step:

(21) Fixing the contractive buckles on the wall adjoining the floor main body;

And the step (3) is: Fixing astride the mechanical elastic telescopic parts between the said contractive buckles and the floor main body.

21. The installation method of the indoor floating decoration floorboards of claim 18, characterized in that one end of each of the mechanical elastic telescopic parts is embedded in the floor main body, and the step (3) is: Propping the other end of each of the mechanical elastic telescopic parts against the contractive buckles adjoining the floor main body; or

One end of each of the mechanical elastic telescopic parts is embedded in the inner walls, which are jointed to the wall, of the contractive buckles, and the step (3) is: Propping the other end of each of the mechanical elastic telescopic parts against the sides of the floor main body adjoining the contractive buckles.

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