

Floor Leveling Device

Field of Invention

5 The present invention relates to a floor leveling and framing member combination device for facilitating construction of concrete floors. In particular, an adjustable floor leveling device in combination with a framing member that has a bracket fixture aligns the floor panels into a required level by adjusting the level of a threaded bolt of the floor leveling device and further to detect irregular floor surfaces.

BACKGROUND ART

10 Floor leveling particularly sub-flooring is essential in the construction industry to ensure a smooth surface. This is such as concrete slabs used in the construction industry vary in thickness and evenness. This causes irregularities of the floor surface which may cause further problems.

15 Having a leveled floor ensures ease of installation of floorings of different materials such as hardwood, tiles, laminate or vinyl. An uneven surface may cause the pieces of materials to not be secured in a fixed manner to the sub-flooring. A leveled floor will also prevent damages on the materials used and to prevent the floor surface from squeaking or bouncing when one walks on the floor.

20 Leveling compounds and sanding are generally used in fixing uneven floors to ensure that a smooth sub-flooring surface is attained. However, there is a need to ensure that the leveling compounds and sanding are smoothen and leveled before installation of the floorings. Hence, a floor leveling device is required to ensure that the installation process can be carried out efficiently.

25 Numerous floor leveling devices have been invented for leveling floors or in particular underlying concrete slabs or other base construction of the sub-flooring.

30 One example of a floor leveling device is disclosed in Australian Patent Publication No. AU 2016262120 B2 (hereinafter referred to as the AU 120 B2 Patent) entitled "Floor Levelling Arrangement and Method Therefor" having a filing date of 11 May 2016 (Applicant: Andrew CRESTANI and Paul CRESTANI) relates to a settable material

aligning arrangement and method therefor. The AU 120 B2 Publication discloses a device for allowing settable material to be aligned to a desired level before the settable material sets. The device comprises of a base arrangement, an aligning formation and a coupling arrangement.

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Another example is provided in Korean Utility Model Publication No. KR 200246028 Y1 (hereinafter referred to as the KR 028 Y1 Publication) entitled "Concrete Leveling Rod" having a filing date of 12 June 2001 (Applicant: KIM, Jin Sul) relates to a level rod for leveling concrete. The KR 028 Y1 Publication discloses a level rod for concrete
10 comprising a base member, a height control member, a position control member, an elastic member and a cap member. The height control member further comprises a threaded screw.

A further example of a floor leveling device is provided in Chinese Utility Model
15 Publication No. CN 203175052 U (hereinafter referred to as the CN 052 U Publication) entitled "Leveler for Building Floor Beam Slab Construction" having a filing date of 30 January 2013 (Applicant: CHEN KAITAI) relates to a leveling device for slab construction. CN 052 U Publication discloses a leveler for slab construction comprises a bottom plate, a positioning cylinder, a screw rod and a top plate. The bottom end of the positioning
20 cylinder is fixed to the bottom plate while the top end of the positioning cylinder is fixed to a threaded screw rod.

As outlined above, various floor leveling devices have been developed to ensure a levelled floor. However, there is need for an improved floor leveling device for use in
25 leveling the floor of building construction whereby floor constructions can be provided completely levelled and in a relatively economical way.

The present invention is an improvement of the inventor's floor leveling device in Malaysian Patent Application No. PI 2016703763 now granted as patent number MY-
30 191561-A. The present invention provides an improved floor leveling device having a bracket fixture. The present invention relates to floor leveling device with an adjustment means that allows for variation in thickness of the floor. The floor leveling device in combination with a framing member is adjustable left, right, up, and down by means of

bolts and nuts until a completely leveled arrangement is obtained. The device is removable upon installation and completion of the flooring.

SUMMARY OF INVENTION

The present invention relates to a floor leveling device and framing member combination device for facilitating construction of concrete floors. In particular, an adjustable floor
 5 leveling device in combination with a framing member that has a bracket fixture aligns the floor panels into a required level by adjusting the level of a threaded bolt of the floor leveling device and further to detect irregular floor surfaces.

One aspect of the present invention provides a floor leveling and frame member
 10 combination device for building construction comprising a longitudinal framing member with supporting plate having a planar surface for supporting at least two floor leveling device in abutting position to the longitudinal framing member, and each floor leveling device is constituted by a bracket fixture, a threaded bolt is secured to a bottom position of the bracket fixture, the threaded bolt is screwed into a first nut; the threaded bolt and
 15 the first nut is positioned into a floor supporting member through a second nut of the floor supporting member; the floor supporting member is constituted by a single column pole with said second nut on a central position of a top part of the single column pole, the single column pole having a platform with an opening for receiving a screw or fastening means; said threaded bolt and the first nut positioned into the single column pole of the
 20 floor supporting member through the second nut on the central position of the top part of the single column pole. The bracket fixture is clasped to the longitudinal framing member in abutting position providing for a firm supporting means to the longitudinal framing member.

25 Another aspect of the present invention provides that the floor supporting member of the floor leveling device sets the floor panels into required level by adjusting the level of the threaded bolt screwed into the first nut; said adjustment is a vertical adjustment wherein the threaded bolt and first nut is vertically spaced as it is interposed into the single column pole of the floor supporting member.

30 Yet another aspect of the present invention provides that the longitudinal framing member with supporting plate having a planar surface enables the floor leveling device to rest on the longitudinal framing member whereby the longitudinal framing member enables the flooring to be within a required level plane through its planar surface.

Another aspect of the present invention provides that the first nut on the central position of the top part of the post of the floor supporting member is of a diameter that is large enough to enable the threaded bolt and nut to be positioned into the single column pole.

- 5 Yet another aspect of the present invention provides that the bracket fixture of the floor leveling device is made of steel.

Another aspect of the present invention provides that the nut and bolt is a fastening means where the fastening means may be made of steel.

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Yet another aspect of the present invention provides that the vertical adjustment of the threaded bolt and nut allows for adjustment of the floor level until a level and flat flooring of a required height is obtained.

- 15 Another aspect of the present invention provides that adjustment of the floor level is at a margin of less than 2mm in height.

The present invention consists of features and a combination of parts hereinafter fully described and illustrated in the accompanying drawings, it being understood that various
20 changes in the details may be made without departing from the scope of the invention or sacrificing any of the advantages of the present invention.

BRIEF DESCRIPTION OF ACCOMPANYING DRAWINGS

To further clarify various aspects of some embodiments of the present invention, a more particular description of the invention will be rendered by references to specific
5 embodiments thereof, which are illustrated in the appended drawings. It is appreciated that these drawings depict only typical embodiments of the invention and are therefore not to be considered limiting of its scope. The invention will be described and explained with additional specificity and detail through the accompanying drawings in which:

- 10 FIG. 1.0 illustrates the floor leveling and framing member combination device for building construction of the present invention.

DETAILED DESCRIPTION OF THE DRAWINGS

The present invention relates to a floor leveling and framing member combination device for facilitating construction of concrete floors. In particular, an adjustable floor leveling device in combination with a framing member that has a bracket fixture aligns the floor panels into a required level by adjusting the level of a threaded bolt of the floor leveling device and further to detect irregular floor surfaces. . The floor leveling device of the present invention is economical as it is simple and low in cost. Further, the floor leveling device of the present invention is environmental friendly in view of the convenience in operating the floor levelling device which eliminates the need of sand ash. Hereinafter, this specification will describe the present invention according to the preferred embodiments. It is to be understood that limiting the description to the preferred embodiments of the invention is merely to facilitate discussion of the present invention and it is envisioned without departing from the scope of the appended claims.

With the present invention, a simple mechanism of ensuring a levelled floor is achieved by using the floor leveling and framing member combination device. The floor leveling and frame member combination device (100) is for use in building construction.

The main features of the floor leveling and frame member combination device (100) is a longitudinal framing member (102), floor leveling device (104a, 104b), threaded bolts (108a, 108b) and a single column pole (120a, 120b) of a floor supporting member

Longitudinal framing member

The floor leveling and frame member combination device (100) comprises a longitudinal framing member with supporting plate (102) having a planar surface for supporting at least two floor leveling device (104a, 104b) in abutting position to the longitudinal framing member (102).

Floor leveling device

Each floor leveling device (104a, 104b) is constituted by a bracket fixture (106a, 106b) that is clasped to the longitudinal framing member (102) in abutting position. The bracket fixture provides a firm supporting means to the longitudinal framing member. The floor

leveling device (104a, 104b) is able to rest on the longitudinal framing member (102) whereby the longitudinal framing member (102) enables the flooring to be within a required level plane through its planar surface. The bracket fixture (106a, 106b) of the floor leveling device (104a, 104b) is preferably made of steel.

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Threaded bolts

A main component that fixes the longitudinal framing member (102) to the floor leveling device (104a, 104b) is threaded bolt (108a, 108b). The threaded bolt (108a, 108b) is secured to a bottom position of the bracket fixture (106a, 106b) where the threaded bolt (108a, 108b) is screwed into a first nut (110a, 110b). The threaded bolt (108a, 108b) and the first nut (110a, 110b) is positioned into a floor supporting member through a second nut (118a, 118b) of the floor supporting member.

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Single Column Pole of a Floor Supporting Member

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The floor supporting member is constituted by a single column pole (120a, 120b) with said second nut (118a, 118b) on a central position of a top part of the single column pole (120a, 120b), the single column pole having a platform (122a, 122b) with an opening (124a, 124b) for receiving a screw or fastening means. The fastening means may be screws or bolts for securing the floor leveling and frame member combination device to the ground. To fix the single column pole (120a, 120b) to the longitudinal framing member, the diameter of the first nut is large enough to enable the threaded bolt (108a, 108b) and nut (110a, 110b) to be positioned into the single column pole (120a, 120b).

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The threaded bolt (108a, 108b) and the first nut (110a, 110b) is positioned into the single column pole (120a 120b) of the floor supporting member through the second nut (118a, 118b) on the central position of the top part of the single column pole (120a, 120b). These nuts and bolts are a fastening means that may be made of steel.

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The floor leveling device (104a, 104b) comprises floor supporting members which sets floor panels into required levels by adjusting the level of the threaded bolt (108a, 108b) that is screwed into the first nut (110a, 110b). Further, the threaded bolt (108a, 108b) and the first nut (110a, 110b) is positioned into the single column pole (120a, 120b) of the floor supporting member by further screwing into the second nut (118a, 118b). The

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adjustment is a vertical adjustment wherein the threaded bolt (108a, 108b) and first nut (110a, 110b) is vertically spaced as it is interposed into the single column pole (120a, 120b) of the floor supporting member. The vertical adjustment of the threaded bolt (108a, 108b) and nut (110a, 110b) allows for adjustment of the floor level until a level
5 and flat flooring of a required height is obtained. The adjustment of the floor level is at a margin of less than 2mm in height

Throughout this specification, unless the context requires otherwise, the word “comprise”, or variations such as “comprises” or “comprising”, will be understood to imply
10 the inclusion of a stated step or element or integer or group of steps or elements or integers, but not the exclusion of any other step or element or integer or group of steps, elements or integers. Thus, in the context of this specification, the term “comprising” is used in an inclusive sense and thus should be understood as meaning “including principally, but not necessarily solely”.

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CLAIMS

1. A floor leveling and frame member combination device (100) for building construction comprising:
 - 5 a longitudinal framing member with supporting plate (102) having a planar surface for supporting at least two floor leveling device (104a, 104b) in abutting position to the longitudinal framing member (102), and each floor leveling device (104a, 104b) is constituted by a bracket fixture (106a, 106b),
 - 10 a threaded bolt (108a, 108b) is secured to a bottom position of the bracket fixture (106a, 106b), the threaded bolt (108a, 108b) is screwed into a first nut (110a, 110b); the threaded bolt (108a, 108b) and the first nut (110a, 110b) is positioned into a floor supporting member through a second nut (118a, 118b) of the floor supporting member; the floor
 - 15 supporting member is constituted by a single column pole (120a, 120b) with said second nut (118a, 118b) on a central position of a top part of the single column pole (120a, 120b), the single column pole having a platform (122a, 122b) with an opening (124a, 124b) for receiving a screw or fastening means;
 - 20 said threaded bolt (108a, 108b) and the first nut (110a, 110b) positioned into the single column pole (120a 120b) of the floor supporting member through the second nut (118a, 118b) on the central position of the top part of the single column pole (120a, 120b);
 - characterized in that
 - 25 the bracket fixture (106a, 106b) is clasped to the longitudinal framing member (102) in abutting position providing for a firm supporting means to the longitudinal framing member.
- 30 2. The device (100) according to Claim 1, wherein the floor supporting member of the floor leveling device (104a, 104b) sets the floor panels into required level by adjusting the level of the threaded bolt (108a, 108b) screwed into the first nut (110a, 110b); said adjustment is a vertical adjustment wherein the threaded bolt (108a, 108b) and first nut (110a, 110b) is vertically spaced as it is interposed into
- 35 the single column pole (120a, 120b) of the floor supporting member.

3. The device (100) according to Claim 1, wherein the longitudinal framing member with supporting plate (102) having a planar surface enables the floor leveling device (104a, 104b) to rest on the longitudinal framing member (102) whereby the longitudinal framing member (102) enables the flooring to be within a required level plane through its planar surface.
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4. The device (100) according to Claim 1, wherein the first nut (110a, 110b) on the central position of the top part of the post (120a, 120b) of the floor supporting member is of a diameter that is large enough to enable the threaded bolt (108a, 108b) and nut (110a, 110b) to be positioned into the single column pole (120a, 120b).
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5. The device (100) according to Claim 1, wherein the bracket fixture (106a, 106b) of the floor leveling device (104a, 104b) is made of steel.
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6. The device (100) according to Claim 1, wherein the nut and bolt is a fastening means; the fastening means may be made of steel.
7. The device (100) according to Claim 2, wherein the vertical adjustment of the threaded bolt (108a, 108b) and nut (110a, 110b) allows for adjustment of the floor level until a level and flat flooring of a required height is obtained.
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8. The device (100) according to Claim 7, wherein adjustment of the floor level is at a margin of less than 2mm in height.
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