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(54) **Fastener for windows and doors and method and system for installing a window or a door**

(57) A fastener (1) for windows and doors, comprising at least: threads (2), a head part (3), and screwable elements (4) of the fastener, by means of which the fastener (1) can be screwed. In an example, the fastener (1) comprises a shape, to which a threaded adjustment screw (13) can be connected, and the threaded adjustment screw (13). In the method, the fastener (1) is applied in such a way that at least one fastener (1) for windows

and doors is fastened to the insulation layer (8) of a wall structure, and a built-in frame (5) is fixed to at least one fastener (1) for windows and doors. A system for installing a window or a door in a wall structure comprises a built-in frame (5) for the window or door, a fastener (1) for windows and doors, and a fastening element (12) which is intended for fixing said built-in frame (5) to at least one fastener (1) for windows and doors.

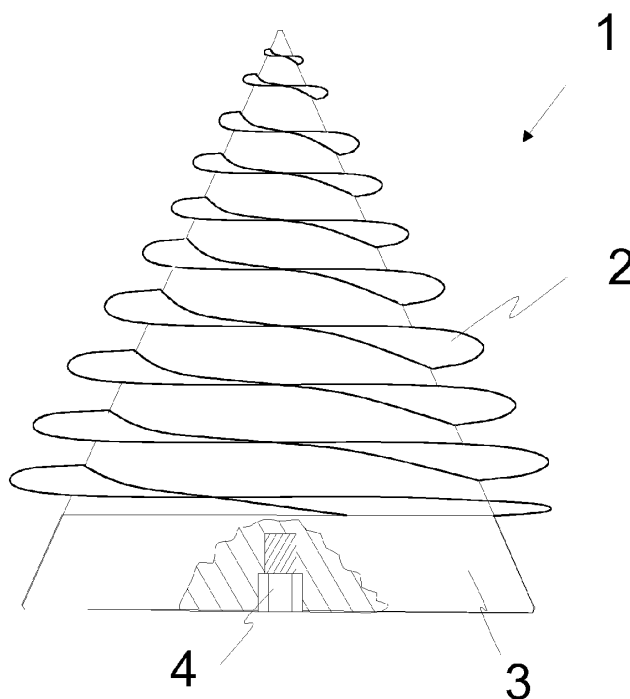


Fig.2a

Description

Field of the invention

[0001] The invention relates to a fastener for windows and doors. The invention also relates to a method and a system for installing a window or a door.

Background of the invention

[0002] The walls of houses, such as one-family houses, comprise a wall structure which may comprise, for example, elements, blocks, bricks, and/or metal sheets. The wall structure typically comprises an external skin and an internal skin, as well as an insulation layer left between the external and internal skins. The external skins typically comprise a suitable bearing material, such as for example concrete, bricks, metal, and/or expanded clay. The insulation layer may comprise, for example, EPS insulation which consists of expanded polystyrene, and/or insulation wool, such as for example so-called rock wool or glass wool.

[0003] In most cases, when houses with wall structures are constructed, said wall structures are provided with openings for windows and doors in desired locations. For example windows are then installed in these openings provided for the windows, often by a method that typically comprises the following general outlines:

- in the opening provided for the window, a recess for an installation support is made in the insulation layer in the wall structure;
- said installation support, which is normally made of wood material, is inserted in said insulation layer and sealed in the insulation layer by using a sealing material which may consist of, for example, urethane;
- the built-in frames of the window are fitted in the desired installation position by using wedges;
- the windows is sealed, typically with urethane;
- so-called extra parts of the wedges, protruding from the built-in frames, are removed. This can be done, for example, by cutting those parts of the wedges which protrude from the built-in frames, or in some cases also by pulling off the wedges and filling these openings with the sealing material used.

[0004] Also doors can be installed in a corresponding manner.

[0005] The installation described above takes a lot of time, for which reason the installation costs are relatively high. A particularly time-consuming stage is, for example, the fitting of the installation support required, because, among other things, some insulating material needs to be removed and the urethane used as the sealing material takes about one day to dry. Alternatively, in some cases, the installation support may have been installed already at the factory, which complicates the process of manufacturing the wall structure at said factory. The wall

structure may be, for example, a prefabricated element. Also the so-called finishing work, that is, removing or cutting of the wedges and possible application of new sealing material, takes its time. For this reason, there is a need in the industry for a solution by means of which the installation could be carried out faster and/or more easily and thereby also more cost-efficiently.

Brief summary of the invention

[0006] It is an aim of the invention to present a solution by which the installation of windows and/or doors of prior art can be performed by a method that is significantly simpler and faster than before. For this purpose, the present invention discloses a fastener for windows and doors. Furthermore, the invention discloses a method and a system for installing windows and doors.

[0007] By means of a fastener for windows and doors according to one embodiment, the installation of a window or a door can be performed in a substantially easier and/or faster way. The reason for this is that when applying the fastener for windows and doors, it is possible to make the single installation steps of prior art simpler and/or to eliminate them altogether. This can be implemented, for example, by any of the following methods:

- The window or door is not fitted in place by means of wedges for the time of the installation. Thus, the fixing of the built-in frame with wedges as well as the removal or cutting of the wedges at the end of the installation can be omitted.
- The addition of a piece of wood or a corresponding installation support to be fixed to the wall structure is totally eliminated from the steps of installation of a window and/or a door. Thus, the addition of both the installation support and the respective sealing material is left out from the installation steps.

[0008] According to another embodiment, the fastener for windows and doors is used to secure that the window or door does not substantially move out of place in any direction in the course of years. This is based on the fact that the structure and the shape of the fastener for windows and doors prevent substantially the lateral movement of the window.

[0009] The fastener according to the invention for windows and doors is presented in claim 1. The method according to the invention for installing windows and doors is presented in claim 5. The system according to the invention for installing windows and doors is presented in claim 9.

Description of the drawings

[0010] In the following, the invention will be described in more detail with reference to the appended drawings, in which

- Fig. 1 shows an approach of prior art to fasten a window or a door, in a cross-sectional view from above;
- Figs. 2a, 2b and 2c show some examples of a fastener for windows and doors;
- Fig. 3 shows an example of fixing a window or a door by means of the fastener for windows and doors, shown in Fig. 2, in a cross-sectional view from above; and
- Fig. 4 shows an example for aligning a window or a door by means of the fastener for windows and doors shown in Fig. 2.

Detailed description of the invention

[0011] Figure 1 shows an approach of prior art to fasten a window or a door, in a cross-sectional view from above. Figure 1 shows a built-in frame 5, a window panel (or door) 6, an external skin 7 in a wall structure, an insulation layer 8 in the wall structure, an installation support 9, wedges 10, sealing material 11, and a fastening element 12.

[0012] The installation operation of prior art typically comprises the following steps:

- The installation support 9 is inserted in the insulation layer 8 of the wall structure 8. In this context, sealing material 11, which typically consists of (poly)urethane, is added into the insulation layer 8.
- The built-in frame 5 is fitted in the desired position by means of wedges 10.
- The built-in frame 5 is fastened to the installation support 9 by fastening elements 12.
- The space between the built-in frame 5 and the wall structure is filled with sealing material 11, which sealing material 11 is typically the same as the sealing material used for fastening to the installation support 9.
- The wedges 5 are either cut off in such a way that the wedges do not protrude from the edges of the built-in frame 5, or alternatively, the wedges 5 are pulled off and the gaps left by the wedges 5 are filled with the sealing material 11.

[0013] This kind of an installation operation according to prior art is slow and therefore relatively expensive. The installation operation is made particularly slow by the fact that the inserting of the installation support 9 is quite laborious and the (poly)urethane typically used as the sealing material takes about one day to dry. Furthermore, the use of wedges 10 in the fitting of the built-in frame 5 as well as the cutting off or removal of said wedges after the installation slow down the installation operation even more.

[0014] Figures 2a, 2b and 2c show an example of a

fastener 1 for windows and doors, which will also be called a fastener hereinbelow. Further, Fig. 2b shows some advantageous fastening and adjusting elements suitable for the fastener 1. The figures show the fastener 1 for windows and doors, the threads 2 of the fastener 1, the head 3 of the fastener 1, and the screwable elements 4 of the fastener. Furthermore, Fig. 2b shows an adjustment screw 13 for the fastener 1, as well as a fastening element 12 for the fastener 1.

[0015] Preferably, the fastener 1 for windows and doors has a substantially conical shape. However, it does not need to be symmetrical throughout, but the fastener 1 may be asymmetric for example in such a way that the head 3 of the fastener is wider than it would be in a symmetrical cone, as shown in Fig. 2c. By means of such variations, the fastener 1 for windows and doors may be easier to install in its place than otherwise.

[0016] The fastener 1 can be made of suitable materials of prior art. The head part 3 of the fastener 1 can be made of either the same material as the rest of the fastener 1, or a different material. Except for the head part 3, the fastener 1 can be made of, for example, various light metals or steel. The whole fastener 1, including the head part, can be made of, for example, a variety of plastics or chipboard, and in some cases also of wood. It is essential that the head part 3 of the fastener is made of such a material, to which the fastening element 12 can be connected.

[0017] Advantageously, the fastener 1 for windows and doors comprises threads 2, by means of which the fastener 1 can be threaded like a screw into the insulation layer 8 of the wall structure. The threads 2 may be provided either essentially in the tip part of the fastener 1 only (shown, for example, in Fig. 2a), or the threads may also extend to the head part 3, for example over the whole head part 3. Advantageously, the fastener 1 for windows and doors is threaded substantially entirely in the insulation layer 8 of the wall structure, preferably in such a way that the head 3 of the fastener 1 is substantially at the same level as the surface of the insulation layer 8 of the wall structure (shown in Fig. 3). The head part of the fastener 1 can be formed in such a way that the diameter of the head part in relation to the largest diameter of the threaded part may be particularly large. In this case, the head part may resemble a flange-like structure.

[0018] For threading the fastener 1, said fastener is preferably provided with screwable elements 4, by means of which the fastener 1 can be easily fastened to the insulation layer of the wall structure. The screwable elements may comprise, for example, a hexagonal socket in the fastener 1, from which socket the fastener 1 can be driven like a screw into the insulation layer 8 of the wall structure (shown in Fig. 3), for example by means of an Allen wrench or a corresponding tool. The screwable elements 4 of the fastener may also comprise a different shape, by means of which the fastener 1 can be wrenched into the insulation layer 8 of the wall structure, when a suitable wrench is connected to said shape. The

threads 2 of the fastener 1 can be designed either in such a way that the fastener 1 is fastened to the insulation layer of the wall structure by wrenching counterclockwise, or in such a way that it is connected to the insulation layer by wrenching clockwise.

[0019] By the effect of its shape and said threads 2, the fastener 1 for windows and doors remains in place substantially in the cross direction in such a way that the fastener for windows and doors may simultaneously prevent a movement of the built-in frame in the cross direction. Thanks to this, the movement of the built-in frames 5 in the cross direction or in another direction may be substantially prevented in the years following the installation.

[0020] The fastening element 12 shown in Fig. 2b fixes the built-in frame 5 (shown in Fig. 3) by means of the fastener 1 for windows and doors to the insulation layer 8 of the wall structure and to the wall structure. The fastening element 12, which extends through the built-in frame 5, is connected to the fastener 1 for windows and doors preferably in the area of the head 3. The fastening element 12 may be, for example, a screw, for example a screw in the range from 5×60 to 6×100 . The structure of the head 3 is selected in such a way that it enables the reliable and strong fastening of the fastening element 12, for example by selecting the thickness and the material of the head in a suitable way.

[0021] Particularly in the case that the fastener 1 also comprises an adjustment screw 13, the fastening element 12 is connected to the fastener 1 for windows and doors in such a way that it is provided in another place in the head 3 of the fastener 1 than the place where the screwable elements 4 of the fastener are provided. Typically, the screwable elements 4 are provided substantially in the centre 3 of the head 3 and on the central line of the fastener 1.

[0022] By means of the adjustment screw 13 shown in Fig. 2b, it is possible to adjust the distance of the built-in frame 5 (shown in Fig. 3) from the insulation layer of the wall structure to be suitable. Thus, the built-in frames can be fitted directly to the desired location without needing wedges or corresponding arrangements for the installation. In one example of the fastener 1, the adjustment screw 13 is not necessary but it can be replaced by, for example, wedges of prior art. In this case, the fastener 1 constitutes a supporting and steady base for the wedges and the fastening element 12, and there is no need to use the above-mentioned installation supports. However, the use of the adjustment screw 13 may accelerate the installation substantially.

[0023] According to one embodiment, the head of the fastener 1 for windows and doors comprises, for example, one or more cuts, sockets, openings, holes, designs or other means, to which e.g. a tool can be supported and by means of which the fastener 1 can be kept stationary when adjusting the adjustment screw 13. In this way, it is possible to secure that the fastener 1 will not rotate together with the adjustment screw 13. According

to another embodiment, the threads of the fastener 1 for windows and doors are oriented in a different direction from the threads of the adjustment screw 13. Thus, when the adjustment screw 13 is being adjusted outwards, seen from the head 3, the fastener 1 bores more tightly into the insulation layer 8 of the wall structure. The above-mentioned solutions may be advantageous, for example, when no hexagonal socket or corresponding design is used for screwing in the fastener for windows and doors.

[0024] The diameter of the head 3 of the fastener 1 for windows and doors is, at its widest point, preferably at least 60 mm wide or at least 80 mm wide, more preferably 60 to 120 mm wide or 80 to 100 mm wide. The length of the fastener 1 for windows and doors is, measured at the longest point of the fastener 1 (length in depth direction, that is, from the head to the tip), preferably at least 80 mm or at least 100 mm long, more preferably at least 120 mm or at least 140 mm or 150 mm long. The length of the head part of the fastener for windows and doors in the depth direction is advantageously at least 20 mm or at least 25 mm, and it may be, for example, 20 to 30 mm. The suitable size of the fastener 1 for windows and doors is influenced by the insulation material used, among other things. For wools, for example, a relatively long fastener 1 is normally applied.

[0025] Figure 3 shows an example of fixing the built-in frame 5 for a window or a door by means of the fastener for windows and doors, shown in Fig. 2, in a cross-sectional view from above. The figure shows, among other things, the fastener 1 for windows and doors, the built-in frame 5, the glass panel (or door) 6, the exterior skin 7 of the wall structure, the insulation layer 8 of the wall structure, the sealing material 11, and the first fastening element 12.

[0026] The final result shown in Fig. 3 can be achieved, for example, by an installation operation which may comprise at least some of the following steps:

1. fastening fasteners for windows or doors to the insulation layer 8 of the wall structure,
2. fitting the built-in frame 5 in its place by means of wedges in such a way that the wedges are supported to the heads 3 of the fastener 1 for windows and doors (shown in Fig. 2),
3. fastening the built-in frame 5 to the fasteners for windows and doors by means of fastening elements 12,
4. sealing the gap between the built-in frame 5 and the wall structure with the sealing material 11, and
5. cutting off or removing the wedges and finishing the installation work.

[0027] By means of the fastener 1 for windows and doors, the built-in frame 5 can be installed in a window or door opening, for example, in the above described manner so that no installation support 9 with its sealing material 11 is needed. Furthermore, the shape of the fastener 1 for windows and doors has such an effect that

possible movement of the window or door installed, in the cross direction or another direction, can be prevented in the long run.

[0028] The omission of the installation support 9 (shown in Fig. 1) from the installation operation facilitates the installation operation considerably, because no recess for the installation support needs to be chamfered in the insulation layer 8 of the wall structure. Thus, the step of fastening the installation support to the insulation layer 8 with sealing material 11 is also eliminated, wherein there is no need to wait for the drying of the sealing material 11 either.

[0029] Figure 4 shows an example of applying a fastener for windows and doors, shown in Fig. 2, in the installation of a window (or a door). The figure shows, among other things, the fastener 1 for windows and doors, the built-in frame 5, the insulation layer 8 of the wall structure, the sealing material 11, the fastening element 12, and the adjustment screw 13.

[0030] In the alternative shown in Fig. 4, the head 3 of the fastener 1 for windows and doors replaces at least some and preferably all of the installation supports 9 (shown in Fig. 1), and the adjustment screw 13 of the fastener for windows and doors replaces at least some, preferably all of the wedges 10. In an embodiment, the fastener 1 for windows and doors is first fastened substantially entirely to the insulation layer 8 of the wall structure in such a way that the head 3 of the fastener 1 is substantially on the same level with the end of the insulation layer 8 of the wall structure. After this, the length of the adjustment screw 13 in connection with the fastener 1 is adjusted so that the built-in frame 5 can be supported to the desired location in such a way that the built-in frame 5 is substantially straight; in other words, the built-in frame is not askew and all the edges of the built-in frame form an angle of substantially 90 degrees.

[0031] Preferably, the head of the adjustment screw has such a shape that it can be twisted by means of a wrench or a tool that is typically, for example, a fork wrench or an adjustable wrench, wherein the head has the shape of, for example, a hexagonal bolt head. In this way, it is possible to adjust the adjustment screw which is provided between the built-in frame and the wall structure.

[0032] This kind of an installation operation comprises at least some of the following steps:

1. Fasteners for windows and doors are fastened to the insulation layer 8 of the wall structure, preferably on the lower side of the window or door opening as well as on both (first and second) sides adjacent to the lower side.
2. Adjustment screws 13 are connected to said fasteners 1 for windows and doors.
3. The adjustment screws 13 on the lower side of the window or door opening as well as on the first side adjacent to the lower side are adjusted to a suitable length.

4. The built-in frame 5 is fitted in such a way that the built-in frame is substantially in contact with said adjustment screws on the two sides.

5. The adjustment screws on the second side adjacent to the lower side of the built-in frame are tightened against the built-in frame.

6. The built-in frame 5 is fastened to the fasteners for windows and doors by means of fastening elements 12.

7. The gap between the built-in frame 5 and the wall structure is sealed with the sealing material 11.

[0033] More precisely, said steps of the installation operation can be implemented preferably for example by the following methods:

1. The fastener 1 for windows and doors is fastened to a suitable location in the insulation layer 8 of the wall structure, preferably on the lower side of the window or door opening as well as on both the sides adjacent to the lower side.

- The fastener for windows and doors can be screwed into the insulation layer 8 of the wall structure, for example, with the help of a suitable shape of the head 3 of the fastener, such as a hexagonal socket made in the fastener 1 and an Allen wrench fitting in said shape.
- The fastener for windows and doors is advantageously installed in such a way that the head 3 of the fastener is substantially on the same level as the edge of the wall structure.
- A suitable number of fasteners for windows and doors should be applied in such a way that they are provided on at least three sides of the window or door opening, said sides comprising at least the lower side and the sides adjacent to it.

2. Adjustment screws 13 are connected to said fasteners for windows and doors.

3. The adjustment screws 13 on the lower side of the window or door opening as well as on the first side next to the lower side are adjusted to a suitable length.

- The suitable length for the adjustment screws is selected in such a way that the built-in frames lifted to abut the adjusted adjustment screws 13 form an angle of 90 degrees, and further, a suitable space, a so-called caulking space, is left for the sealing material between the built-in frames and the wall material.
- All the adjustment screws used are placed advantageously to abut the head of the fastener 1 before the built-in frames are lifted.
- The adjustment screws to be fitted on the lower side and the first side of the built-in frames are placed advantageously at a suitable distance

before the built-in frame is lifted into its place.

- This can be done, for example, by means of a bubble level or a corresponding tool, first for the first side to be adjusted and then for the second side to be adjusted.
- This can also be implemented, for example, in a way that is similar to other respects but such that the tool used already comprises sides at an angle of 90 degrees. In this case, it will suffice that the first side is set straight by means of a bubble level or the like, and the second side is set straight on the basis of the other side by means of said angle tool.
- Those adjustment screws which are on the side opposite to said first side of the built-in frames, that is, on the other side, are set advantageously short (that is, advantageously substantially within the fastener 1) so that the lifting of the built-in frame in its place becomes easier, as the available space is sufficient in view of the installation.

4. The built-in frame 5 is placed in such a way that the built-in frame is in contact with said adjusted adjustment screws.

- The built-in frame is set in the desired position when it is placed to abut the adjustment screws whose positions have been adjusted in advance.

5. The built-in frame 5 is pre-aligned in its position by tightening the adjustment screws on said second side so long that the built-in frame 5 has been aligned in its position.

- Also these adjustment screws preferably abut the fastener for windows and doors even before the built-in frames are lifted in place, wherein after the lifting of the built-in frames, the screws can be tightened with a suitable tool.

6. The built-in frame 5 is fixed to the fasteners 1 for windows and doors, preferably by means of the fastening elements 12.

- Advantageously, the fastening element 12 can be placed in almost any part of the head 3 of the fastener 1, except at the adjustment screw 13 or at the edge of the head 3, in which case the fastening would not be strong.

7. The gap between the built-in frame 5 and the wall structure is sealed with the sealing material 11.

[0034] The omission of wedges 10 (shown in Fig. 1) from the installation step reduces the amount of work substantially, because there is no need to place the wedges or to cut off or pull out them later, nor to add

sealing material. The omission of the installation support 9 (shown in Fig. 1) from the installation step also reduces the amount of work essentially, because there is no need to install the installation support or to fix the installation support with the sealing material 11. Consequently, the elimination of even one of these installation steps from the installation operation reduces the time of installation substantially.

[0035] According to an advantageous example, the screwable elements 4 for the fastener for windows and doors have the shape of a hexagonal socket, from which the fastener 1 is screwed into the insulation layer 8 of the wall structure by means of an Allen wrench. This is done advantageously before the built-in frames are lifted into place. The fastener 1 for windows and doors may also comprise another shape of the screwable element 4 for the fastener, from which shape the fastener 1 can be fixed by a suitable tool into the insulation layer 8 of the wall structure.

[0036] Particularly in the case that the fastener for windows and doors is intended to be used in combination with an adjustment screw 13, the fastener 1 may also comprise, for example, threads which are compatible with the adjustment screw. These threads or corresponding arrangements can be provided, as shown in Fig. 2, at the same point in the head of the fastener 1 as the actual screwable elements 4 of the fastener, wherein they are placed on the same longitudinal line of the fastener which is parallel to the central line, or on the central line of the fastener, one after or in the other. They may also be provided in other locations in the head 3 of the fastener than the actual screwable elements 4 of the fastener. It is also possible that these threads or the like, compatible with the adjustment screw, are not provided at all in the fastener 1 for windows and doors, but that the adjustment screw is screwed, for example, directly into the fastener 1 for windows and doors.

[0037] It should be noticed that one or more of the following features of the fastener to be presented may be valid in all the examples above:

- the shape of the fastener may be, instead of a partly conical shape, for example, partly or substantially entirely straight (that is, not substantially widening) or sleeve-like;
- the fastener may be partly or substantially entirely hollow; and
- the tip of the fastener may be "truncated".

[0038] The fastener for windows and doors according to the invention is suitable for use in connection with windows and doors of various shapes, such as for example rectangular, partly or totally circular, triangular and polygonal windows and doors.

[0039] The invention is not limited solely to the examples presented in the above description, but the configurations are characterized in what will be presented in the following claims.

Claims

1. A fastener (1) for windows and doors, **characterized in that** said fastener (1) comprises at least:

- threads (2) provided conically on the outer surface of the fastener (1), covering at least part of the outer surface of the fastener;
- a head part (3) provided substantially at that end of the fastener, where the diameter of the fastener is larger than at the other end of the fastener;
- screwable elements (4) of the fastener, by means of which the fastener (1) can be screwed.

2. The fastener (1) according to claim 1 for windows and doors, **characterized in that** said fastener (1) comprises a shape that can be provided with a threaded adjustment screw (13).

3. The fastener (1) according to claim 1 or 2 for windows and doors, **characterized in that** said fastener (1) comprises a threaded adjustment screw (13).

4. The fastener according to any of the claims 1 to 3 for windows and doors, **characterized in that** the length of the head part of the fastener (1) in the depth direction is at least 20 mm or at least 25 mm, and/or the diameter of the head part (3) of the fastener (1), measured at the widest point of the head part (3), is at least 60 mm or at least 80 mm, and/or said fastener (1) has a length, measured at the longest point of the fastener (length of the fastener in the depth direction), of at least 80 mm, at least 100 mm or at least 120 mm.

5. A method for installing a window or a door in a wall structure, **characterized in that** in the method, a fastener (1) for windows and doors is applied, said fastener comprising at least:

- threads (2) provided on the outer surface of the fastener (1), covering part of the outer surface of the fastener;
- a head part (3) provided substantially at that end of the fastener, where the diameter of the fastener is larger than at the other end of the fastener;
- screwable elements (4) of the fastener, by means of which the fastener (1) can be screwed, and that the method comprises at least:
- fastening at least one fastener (1) for windows and doors to the insulation layer (8) of the wall structure by screwing said fastener (1) by means of the screwable elements (4) of the fastener clockwise or counterclockwise; and
- fastening a built-in frame (5) to at least one fastener (1) for windows and doors.

6. The method according to claim 5, **characterized in that** the method further comprises at least:

- supporting the built-in frame (5) by means of wedges (10) to the head part (3) of the fastener (1) for windows and doors.

7. The method according to claim 5, **characterized in that** the method further comprises at least:

- fastening fasteners (1) for windows and doors in such a way that at least two fasteners are provided on the lower side of the window or door opening and on the side adjacent to said lower side;
- fastening the adjustment screws (13) to at least part of said fasteners (1) for windows and doors;
- adjusting the adjustment screws (13) on said two adjacent sides to a suitable length;
- placing the built-in frame (5) in such a way that the built-in frame (5) is in contact with said adjusted adjustment screws.

8. The method according to claim 7, **characterized in that** the method further comprises at least:

- fastening fasteners for windows and doors in such a way that at least two fasteners are provided on each of the following sides:
- the lower side of the window or door opening, and
- both of the sides adjacent to said lower side; and
- fastening the built-in frame (5) in its place by tightening the adjustment screws (13) of one of the sides.

9. A system for installing a window or a door in a wall structure, comprising a built-in frame (5) for the window or door, **characterized in that** the system further comprises at least the following elements:

- a fastener (1) for windows and doors, comprising at least:
- threads (2) provided on the outer surface of the fastener (1), covering part of the outer surface of the fastener;
- a head part (3) provided substantially at that end of the fastener, where the diameter of the fastener is larger than at the other end of the fastener;
- screwable elements (4) of the fastener, by means of which the fastener (1) can be screwed to the insulation layer of the wall structure; and
- a fastening element (12) for fastening said built-in frame (5) to at least one fastener (1) for windows and doors, preferably to the head part (3) of said fastener (1).

10. The system according to claim 9, **characterized in that** the system further comprises at least:

- at least one threaded adjustment screw (13) which is connected to a shape in the fastener and intended for determining the distance between the built-in frame (5) and the fastener (1) for windows and doors.

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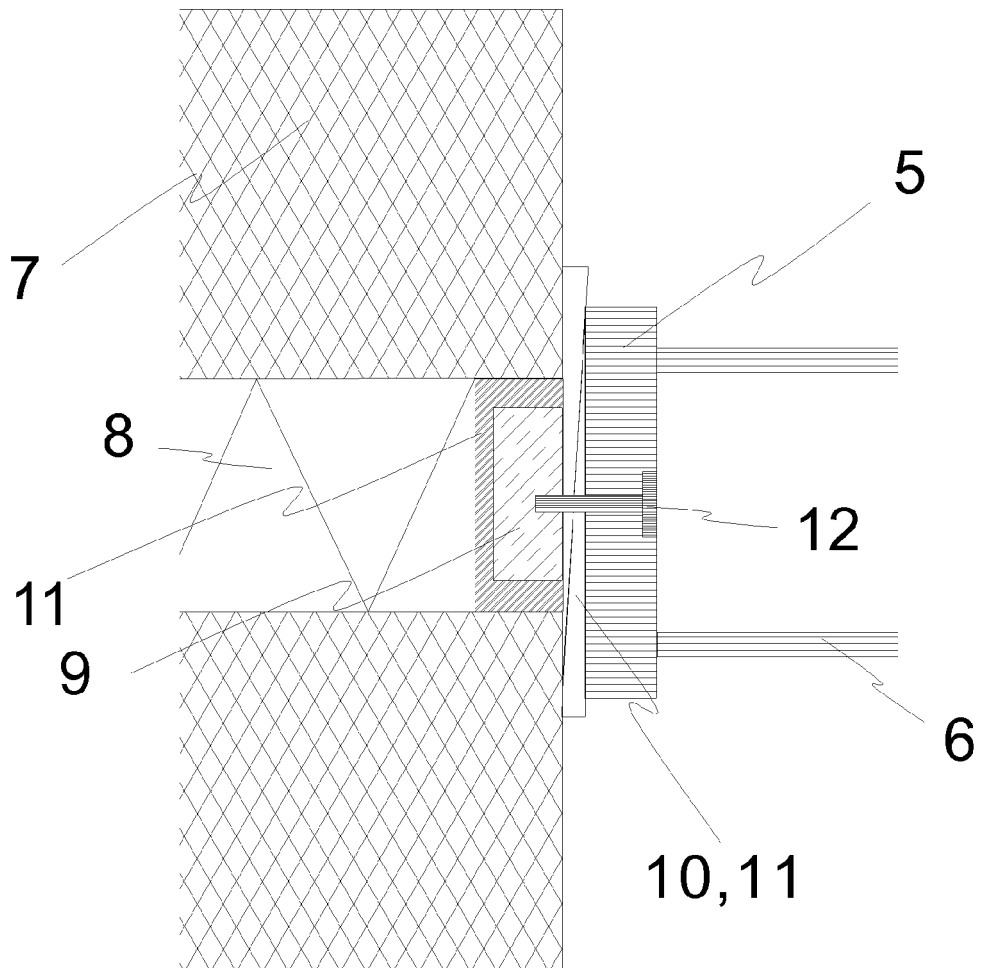


Fig.1

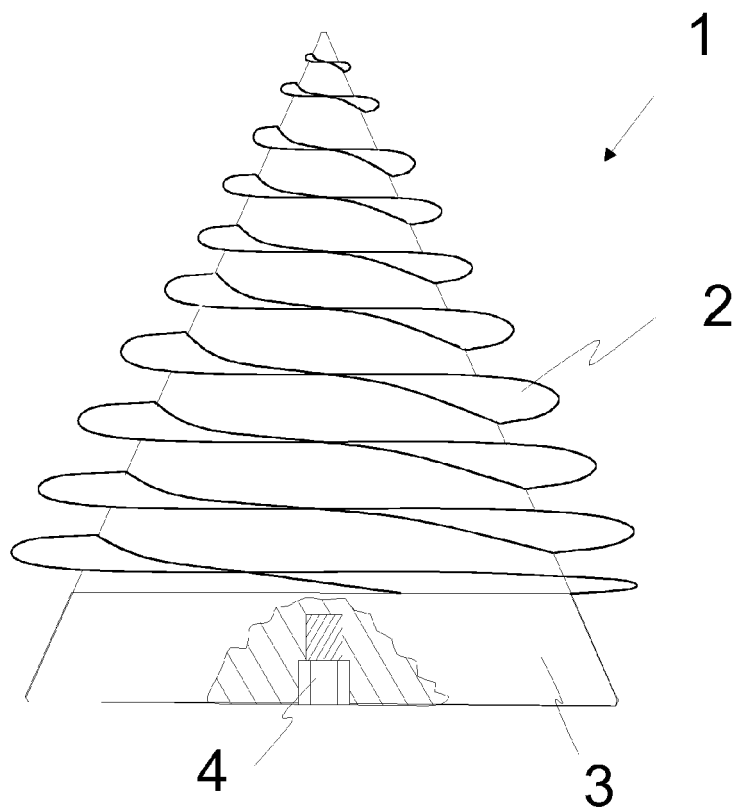


Fig.2a

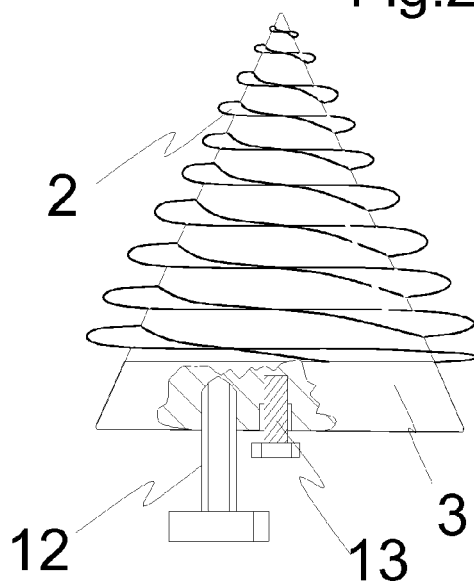


Fig.2b

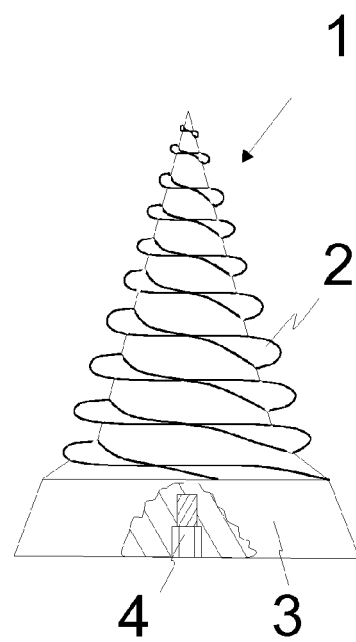


Fig.2c

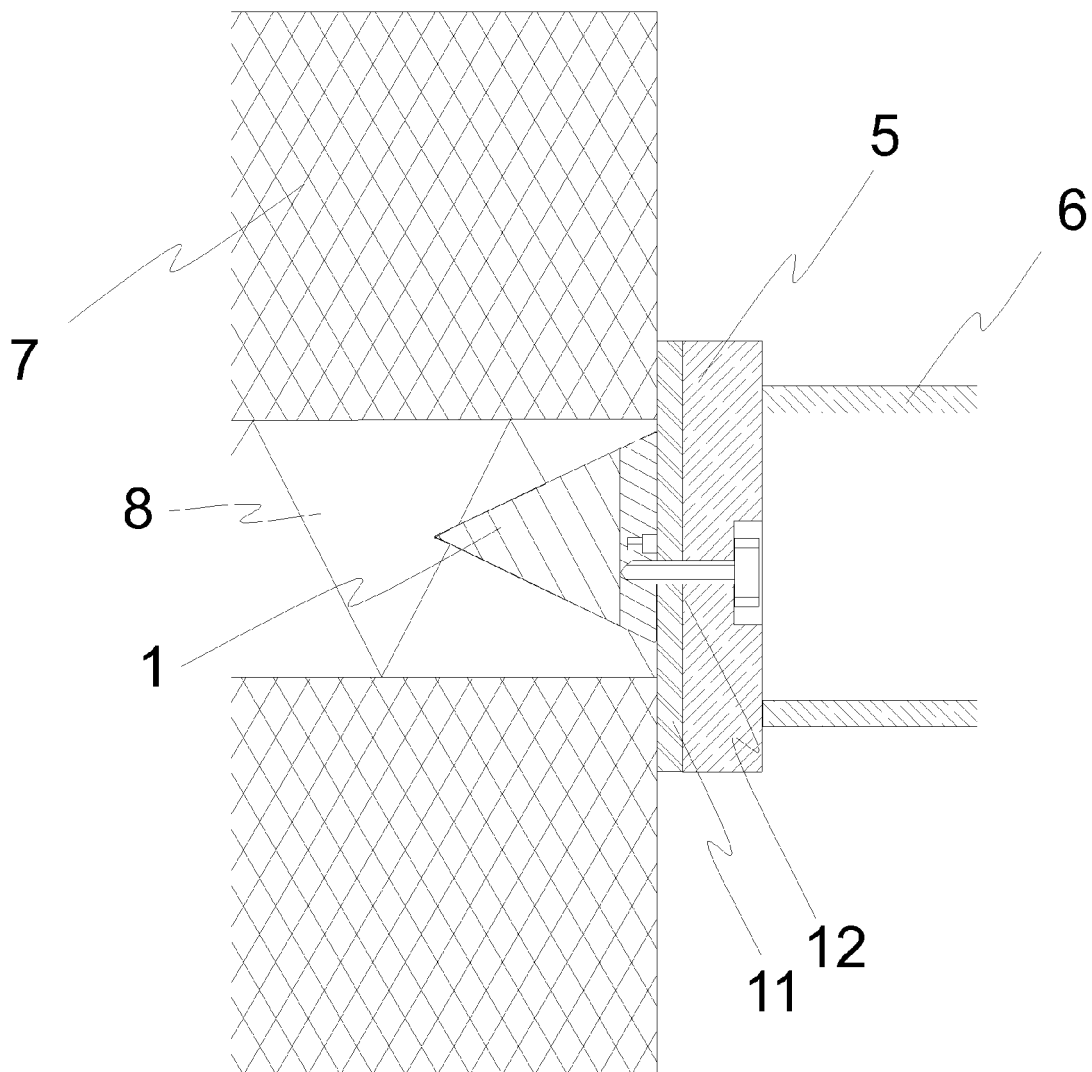


Fig.3

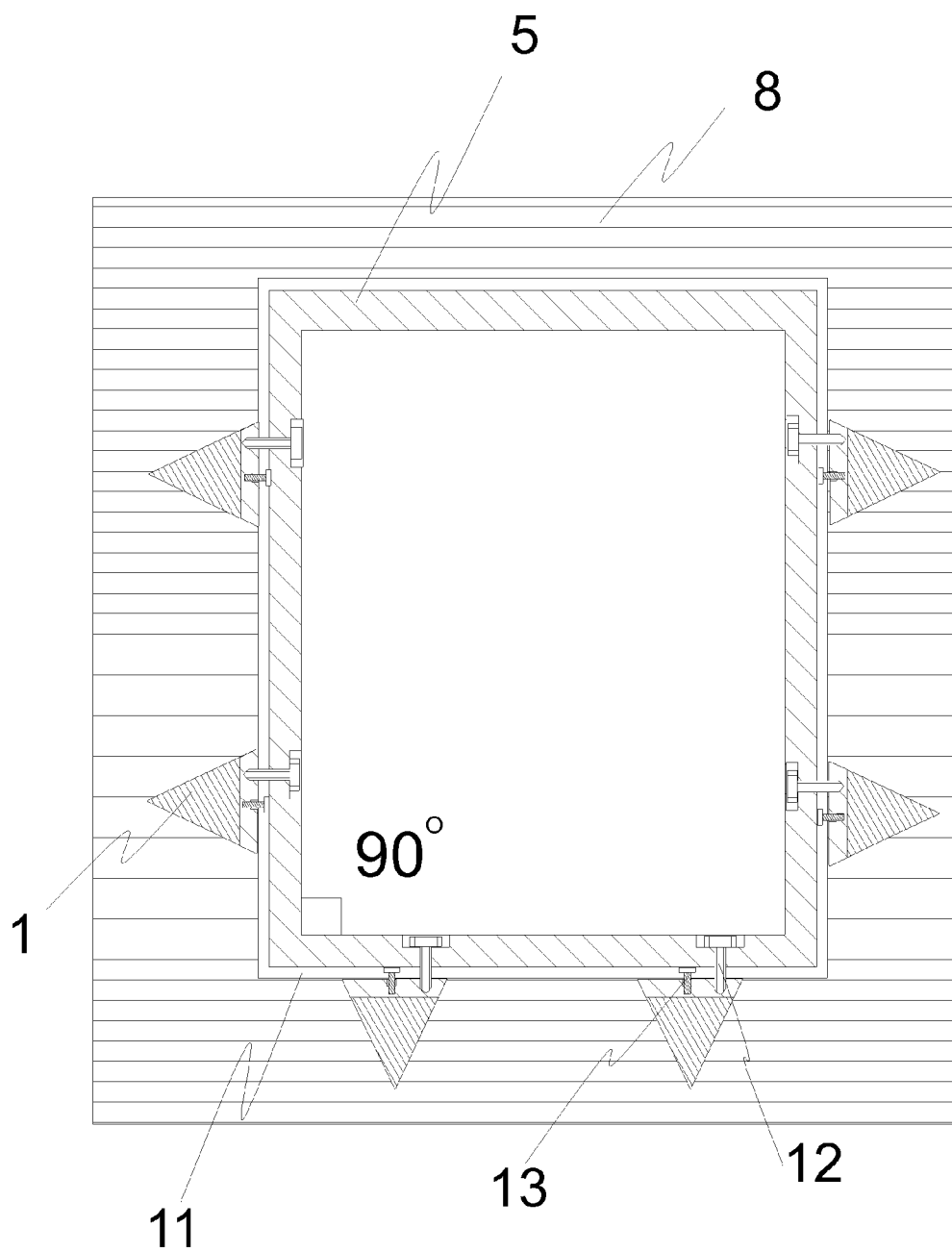


Fig.4