

TERRACOTTA TILE ROOF HANGING SYSTEM, AND TERRACOTTA TILE MOUNTING METHOD AND STRUCTURE

TECHNICAL FIELD

5 The invention relates to the technical field of construction engineering, and in particular to a terracotta tile roof hanging system and terracotta tile mounting method and structure.

BACKGROUND

10 Terracotta tiles were used as waterproof building materials for roofs in ancient buildings in old times. Their main function was waterproofing. With the development of the times, more and more waterproof materials were used for roofs, and terracotta tiles were gradually eliminated. In modern antique buildings or ancient building maintenance, terracotta tiles are only used as decorative materials to form antique buildings with different styles or to repair the roof appearance of ancient buildings. Regarding the new uses of old materials like terracotta
15 tiles, how to adjustably mount terracotta tiles on the roofs of antique buildings to form predetermined profiles and features has become an urgent technical problem that needs to be solved in this field.

SUMMARY

20 An objective of the present invention is to provide a terracotta tile roof hanging system and terracotta tile mounting method and structure, so as to solve the problem of installation and adjustment of terracotta tiles on antique building roofs.

In order to solve the above technical problem, the present invention provides the technical solution below: a terracotta tile roof hanging system, including:

25 a keel seat, which includes a horizontally distributed base, a back seat arranged vertically upward on the base, and supporting seats arranged vertically upward at both ends of the base, the supporting seats being lower than the back seat in height;

a semicircular terracotta tile mounting assembly, which includes a hanging seat that is adjustable along a Z direction on the back seat of the keel seat, wherein a cambered plate that

matches a curvature of a semicircular terracotta tile extends from each end of the hanging seat in an X direction, and an insertion connection member connectable to a slot of the semicircular terracotta tile is arranged on the cambered plate in a normal direction;

shaft seats symmetrically arranged on both sides of the back seat of the keel seat in the X direction through a transverse bolt, each of the shaft seats being provided with a shaft hole opened in a Y direction; and

a planar terracotta tile mounting assembly, which includes a U-shaped auxiliary frame with a notch oriented in the X direction and a shaft plate arranged on the U-shaped auxiliary frame extending in an orientation opposite to the notch, wherein a tail end of the shaft plate is in a shape of a ball head and is hinged in the shaft hole of the shaft seat, wherein the notch of the U-shaped auxiliary frame serves as a mounting clamping opening for a planar terracotta tile, and a locking bolt in the Z direction penetrates through and connects to at least one frame plate of the U-shaped auxiliary frame arranged in the X direction.

Further, in the terracotta tile roof hanging system provided by the present invention, the hanging seat is provided with a through trench extending in the Y direction, and the hanging seat is sleeved on the back seat of the keel seat through the through trench, wherein the hanging seat is adjustably mounted on the back seat of the keel seat through an adjustment bolt passing through the hanging seat along the Z direction.

Further, in the terracotta tile roof hanging system provided by the present invention, a clamping slot is provided on the supporting seat, and a rubber strip is clamped in the clamping slot.

Further, in the terracotta tile roof hanging system provided by the present invention, multiple sets of fixing bolts arranged along the Y direction are symmetrically provided on the base of the keel seat on both sides of the back seat.

Further, in the terracotta tile roof hanging system provided by the present invention, the insertion connection member is Y-shaped.

In order to solve the above technical problem, the present invention provides another technical solution as follows: a terracotta tile mounting method, using the above-mentioned terracotta tile roof hanging system, including:

mounting keel seats of terracotta tile roof hanging systems on a mounting structure of an

antique building through fixing bolts, wherein each keel seat corresponds to a position of each row of semicircular terracotta tiles to be mounted;

at least arranging two shaft seats and two planar terracotta tile mounting assemblies along a length direction of each planar terracotta tile on each width-wise side of the planar terracotta tile at a to-be-mounted position, wherein the planar terracotta tile mounting assemblies are symmetrically arranged on the keel seat through the shaft seats;

clamping a side of each planar terracotta tile in the mounting clamping openings of the two planar terracotta tile mounting assemblies through buffer gaskets and locking the side of the planar terracotta tile with locking bolts;

adjusting an angle of installation surface of the planar terracotta tile by adjusting a rotation angle of the shaft plate of the corresponding planar terracotta tile mounting assembly in the shaft hole of the shaft seat around the Y direction;

adjusting an installation slope of the planar terracotta tile by adjusting a height of the shaft seat relative to the keel seat;

at least arranging two semicircular terracotta tile mounting assemblies along the length direction of each semicircular terracotta tile at the to-be-mounted position, with each of the semicircular terracotta tile mounting assemblies arranged on the keel seat; and adjusting an installation slope of the semicircular terracotta tile by adjusting a height of each semicircular terracotta tile mounting assembly relative to the keel seat;

inserting the semicircular terracotta tiles through the slots into the insertion connection members of the semicircular terracotta tile mounting assemblies on both ends, so as to hang the semicircular terracotta tile on the semicircular terracotta tile mounting assemblies, wherein the semicircular terracotta tile covers part of the planar terracotta tile and is spaced above the planar terracotta tile, wherein an end surface of the semicircular terracotta tile is aligned with an end surface of the planar terracotta tile in the length direction; and

arranging a baffle between adjacent semicircular terracotta tiles in the length direction to prevent moving of adjacent semicircular terracotta tiles and adjacent planar terracotta tiles in the length direction.

Further, in the terracotta tile mounting method provided by the present invention, backside adhesive tapes are provided on lower surfaces of the planar terracotta tiles and lower surfaces

of the semicircular terracotta tiles before mounting the planar terracotta tiles and the semicircular terracotta tiles.

Further, in the terracotta tile mounting method provided by the present invention, the planar terracotta tiles are placed on and connected to the supporting seats of the keel seat through
5 buffer gaskets provided on the supporting seats; or clamping slots are provided on the supporting seats of the keel seat and rubber strips are clamped in the clamping slots, and the planar terracotta tiles are placed on and connected to the supporting seats through the rubber strips.

Further, in the terracotta tile mounting method provided by the present invention, the
10 semicircular terracotta tile mounting assemblies and/or the planar terracotta tile mounting assemblies are made of a single metal material or an alloy material.

In order to solve the above technical problem, the present invention provides a further technical solution: a terracotta tile mounting structure, including:

a standing seam roof arranged on a building structure;

15 a standing seam bracket disposed on the standing seam roof and extending upward over the standing seam roof;

a steel purlin mounted above the standing seam roof through an adapter connected to the standing seam bracket;

20 a terracotta tile roof hanging system mounted on the steel purlin through a fixing bolt, wherein the terracotta tile roof hanging system is the terracotta tile roof hanging system described above;

25 a planar terracotta tile clamped in a mounting clamping opening of the terracotta tile roof hanging system through a buffer gasket, wherein the planar terracotta tile is locked through a locking bolt of the terracotta tile roof hanging system and is placed on and connected to a supporting seat of the terracotta tile roof hanging system through a rubber strip in the supporting seat;

a semicircular terracotta tile hung on an insertion connection member of a semicircular terracotta tile mounting assembly of the terracotta tile roof hanging system through a slot on the semicircular terracotta tile; and

a baffle arranged on the keel seat or steel purlin between adjacent semicircular terracotta tiles and between adjacent planar terracotta tiles covered by the semicircular terracotta tiles.

Compared with the prior art, the beneficial effects of the present invention are as follows:

5 In the terracotta tile roof hanging system and the terracotta tile mounting method and structure of the present invention, the system is arranged on a mounting structure through the keel seat; an integral curved surface of the planar terracotta tiles of the terracotta tile roof is adjustable by adjusting a rotation of the planar terracotta tile mounting assembly around the Y direction relative to the shaft seat provided on the keel seat; an integral gradient of the planar terracotta tiles of the terracotta tile roof is adjustable by adjusting a height of each shaft seat
10 relative to the keel seat; semicircular terracotta tiles are adjustably mounted in the Z direction using semicircular terracotta tile mounting assemblies, so as to adjust an integral gradient of the semicircular terracotta tiles of the terracotta tile roof to meet the overall decoration and styling requirements of the terracotta tile roof.

15 The terracotta tile mounting method and structure of the present invention prevent adjacent semicircular terracotta tiles and adjacent planar terracotta tiles from moving in the length direction through baffles, thereby improving the reliability, stability and safety of the terracotta tile installation, avoiding the safety risk of slipping caused by movement of the terracotta tiles.

20 In the terracotta tile mounting method and structure of the present invention, the semicircular terracotta tile covers part of the planar terracotta tiles and is arranged above and spaced apart from the underlying planar terracotta tiles. The spacing distance allows rainwater to flow and avoids the hidden danger of gravity caused by rainwater gathering on the terracotta tiles.

25 The terracotta tile mounting method and structure of the present invention can prevent the planar terracotta tiles from cracking due to clamping stress by mounting the planar terracotta tiles with buffer gaskets.

BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 is a schematic structural diagram of the terracotta tile roof hanging system.

30 Fig. 2 is a schematic structural diagram of the keel seat of the terracotta tile roof hanging system.

Fig. 3 is a schematic structural diagram of the semicircular terracotta tile mounting assembly of the terracotta tile roof hanging system.

Fig. 4 is a schematic structural diagram showing the shaft seat of the semicircular terracotta tile mounting assembly and the planar terracotta tile mounting assembly in an assembled state
5 of the terracotta tile roof hanging system.

Fig. 5 is a schematic structural diagram showing the shaft seat of the semicircular terracotta tile mounting assembly and the planar terracotta tile mounting assembly in a disassembled state of the terracotta tile roof hanging system.

Figs. 6 to 7 are schematic cross-sectional structural diagrams of terracotta tiles mounted
10 using the terracotta tile roof hanging system.

Fig. 8 is a schematic structural diagram of the longitudinal distribution of adjacent terracotta tiles mounted using the terracotta tile roof hanging system.

Fig. 9 is a schematic structural diagram of terracotta tiles mounted on a standing seam roof through the terracotta tile roof hanging system.

15 In the figures:

100 - terracotta tile roof hanging system;

110 - keel seat, 111 - base, 112 - back seat, 113 - supporting seat, 1131 - slot;

120 - semicircular terracotta tile mounting assembly, 121 - hanging seat, 1211 - through
trench, 122 - cambered plate, 123 - insertion connection member;

20 130 - shaft seat, 131 - shaft hole;

140 - planar terracotta tile mounting assembly, 141 - U-shaped auxiliary frame, 142 - shaft
plate, 143 - mounting clamping opening, 144 - locking bolt;

150 - transverse bolt;

160 - fixing bolt;

25 170 - adjustment bolt;

201 - planar terracotta tile, 202 - semicircular terracotta tile;

301 - backside tape, 302 - rubber strip, 303 - buffer gasket, 304 - baffle;

401 - standing seam roof, 402 - standing seam bracket, 403 - adapter, 404 - steel purlin.

DETAILED DESCRIPTION

The present invention will be described in detail below in conjunction with the accompanying drawings: the advantages and features of the present invention will become clearer from the following description. It should be noted that the drawings are in a very simplified form and use imprecise proportions, and are only used to conveniently and clearly assist in explaining the embodiments of the present invention.

Embodiment 1

Please refer to Figs. 1 to 7. Embodiment 1 of the present invention provides a terracotta tile roof hanging system 100, which includes a keel seat 110, a semicircular terracotta tile mounting assembly 120, a shaft seat 130 and a planar terracotta tile mounting assembly 140, wherein:

Please refer to Figs. 1 to 2. The keel seat 110 includes a horizontally distributed base 111 and a back seat 112 arranged vertically upward on the base 111. Both ends of the base 111 are provided with supporting seats 113 arranged vertically upward with a lower height compared to the back seat 112. The keel seat 110 is in the shape of Chinese character "山".

Please refer to Fig. 1, 3, 6 and 7. The semicircular terracotta tile mounting assembly 120 includes a hanging seat 121 which is adjustable along the Z direction on the back seat 112 of the keel seat 110. Cambered plates 122 matching a curvature of the semicircular terracotta tiles 202 are extended from both ends of the hanging seat 121 in the X direction. An insertion connection member 123 for insertion into a slot of the semicircular terracotta tile 202 is provided on the cambered plate 122 in a normal direction. In order to reduce costs, the insertion connection member 123 may be in a "Y" shape.

Please refer to Figs. 1, 4 and 5. The shaft seats 130 are symmetrically arranged on both sides of the back seat 112 of the keel seat 110 in the X direction through a transverse bolt 150. The shaft seat 130 has a shaft hole 131 opened in the Y direction.

Please refer to Figs. 1 and 4 to 7. The planar ceramic tile mounting assembly 140 includes a U-shaped auxiliary frame 141 with a notch oriented in the X direction and a shaft plate 142 arranged on the U-shaped auxiliary frame 141 extending in a direction opposite to the orientation of the notch. An end tail of the shaft plate 142 is in a shape of a ball head which is

hingedly arranged in the shaft hole 131 of the shaft seat 130. The notch of the U-shaped auxiliary frame 141 is a mounting clamping opening 143 for the planar terracotta tile 201. At least one frame plate of the U-shaped auxiliary frame 141 extending in the X direction is penetrated and connected with a locking bolt 144 arranged along the Z direction. In order to facilitate installation and avoid installation interference, the locking bolt 144 is provided in the upper frame plate arranged along the X direction in Figs. 4 and 5, and the corresponding upper frame plate is provided with internal threads. The length of the locking bolt 144 is not limited to the length shown in the figures, and can extend into the mounting clamping opening 143.

Please refer to Figs. 1 to 7. The terracotta tile roof hanging system 100 according to Embodiment 1 of the present invention is arranged on a mounting structure through the keel seat 110. Planar terracotta tile 201 can be mounted in an Ry adjustable manner by rotating the planar terracotta tile mounting assembly 140 relative to the shaft seat 130 provided on the keel seat 110 around the Y direction, so as to adjust an integral curved surface of the planar terracotta tiles 201 of the terracotta tile roof. And an integral gradient of the planar terracotta tiles 201 of the terracotta tile roof can be adjusted by adjusting the height of each shaft seat 130 relative to the keel seat 110. Semicircular terracotta tiles 202 are adjustably mounted in the Z direction using semicircular terracotta tile mounting assemblies 120, so as to adjust an integral gradient of the semicircular terracotta tiles 202 of the terracotta tile roof to meet the overall decoration and styling requirements of the terracotta tile roof.

Please refer to Fig. 1. In order to achieve an adjustable mounting of the semicircular terracotta tile mounting assembly 120 on the keel seat 110 in the Z direction, the terracotta tile roof hanging system 100 according to Embodiment 1 provides a through trench 1211 opened along the Y direction in the hanging seat 121. The hanging seat 121 sleeves over the back seat 112 of the keel seat 110 through the through trench 1211. The hanging seat 121 is adjustably disposed on the back seat 112 of the keel seat 110 through an adjusting bolt 170 passing through it along the Z direction. When the adjusting bolt 170 is adjusted, the hanging seat 121 can slide relative to the back seat 112, thereby adjusting the height of the semicircular ceramic tile mounting assembly 120 relative to the keel seat 110.

Please refer to Figs. 1, 6 and 7. In order to improve the reliability and stability of the installation of the planar terracotta tiles 202, the terracotta tile roof hanging system 100 according to Embodiment 1 of the present invention provides a slot 1131 on the supporting seat 113. A rubber strip 302 is clamped and disposed in the slot 1131. To facilitate the reliable

installation of the rubber strip 302, the slot 1131 may be a dovetail slot. The supporting seat 113 can support the planar terracotta tile 202 through the rubber strip 302 reliably to prevent the planar terracotta tile 202 from slipping or positional movement in case it is directly placed on the supporting seat 113.

5 Please refer to Figs. 1, 6 and 7. In order to fix the keel seat 110 on a belt mounting surface, the terracotta tile roof hanging system 100 according to Embodiment 1 of the present invention provides multiple sets of fixing bolts 160 on the base of the keel seat 110. The fixing bolts 160 are arranged along the Y direction and symmetrically arranged on both sides of the back seat 112. The keel seat 110 can be disposed on the mounting structure in a full length to facilitate
10 the mounting of each terracotta tile.

Embodiment 2

Please refer to Figs. 1 to 9. Embodiment 2 of the present invention provides a terracotta tile mounting structure, which includes:

15 a standing seam roof 401 mounted on a building structure as a lower roof for waterproofing and thermal insulation;

 a standing seam bracket 402 provided on the standing seam roof 401 and extends vertically upward over the standing seam roof 401;

20 a steel purlin 404 arranged above the standing seam roof 401 through an adapter 403 connected to the standing seam bracket 402, wherein a spacing between steel purlins 404 can be set adaptively according to a length of each piece of terracotta tile;

 a terracotta tile roof hanging system 100 implemented as the terracotta tile roof hanging system 100 of the above-mentioned Embodiment 1 and installed on the steel purlin 404 through fixing bolts 160, the steel purlin 404 serving as the mounting structure here;

25 planar terracotta tiles 201 clamped in the mounting clamping openings 143 of the terracotta tile roof hanging system 100 through buffer gaskets 303, wherein the planar terracotta tiles 201 are locked through the locking bolts 144 of the terracotta tile roof hanging system 100, and the planar terracotta tiles 201 are disposed on the supporting seat 113 of the terracotta tile roof hanging system 100 by resting on the rubber strip 302 provided in the supporting seat 113;

30 semicircular terracotta tiles 202 hung on the insertion connection members 123 of the semicircular terracotta tile mounting assemblies 120 of the terracotta tile roof hanging system

100 through the slots therein; and

baffles 304 arranged on the keel seat 110 or the steel purlin 404 between adjacent semicircular terracotta tiles 202 and planar terracotta tiles 201 covered by the semicircular terracotta tiles 202.

5 In the terracotta tile mounting structure according to Embodiment 2 of the present invention, an integrated roof composed of the mounted planar terracotta tiles 201 and semicircular terracotta tiles 202 can serve as a lower roof mainly used for decoration and heat insulation.

10 Please refer to Fig. 8. The planar terracotta tiles 201 and the semicircular terracotta tiles 202 of the terracotta tile roof mounted according to Embodiment 2 of the present invention are distributed in alignment.

Embodiment 3

15 Embodiment 3 of the present invention provides a terracotta tile mounting method using the terracotta tile roof hanging system 100 of the above-mentioned Embodiment 1. The method includes:

Step 501: Mounting keel seats 110 of the terracotta tile roof hanging system 100 on a mounting structure of an antique building through fixing bolts 160, wherein each keel seat 110 is located in correspondence with a position of each row of semicircular terracotta tiles 202 to be mounted.

20 Step 502: At least arrange two shaft seats 130 and two planar terracotta tile mounting assemblies 140 along a length direction of each planar terracotta tile 201 on each width-wise side of the planar terracotta tile 201 at a to-be-mounted position, wherein the planar terracotta tile mounting assemblies 140 are symmetrically arranged on the keel seat 110 through the shaft seats 130.

25 Step 503: Clamp a side of each planar terracotta tile 201 in the mounting clamping openings 143 of the two planar terracotta tile mounting assemblies 140 through buffer gaskets 303 and locking the side of the planar terracotta tile 201 with locking bolts 144.

30 Step 504: Adjust an angle of installation surface of the planar terracotta tile 201 by adjusting a rotation angle of the shaft plate 142 of the corresponding planar terracotta tile mounting assembly 140 in the shaft hole 131 of the shaft seat 130 around the Y direction.

Step 505: Adjust an installation slope of the planar terracotta tile 201 by adjusting a height of the shaft seat 130 relative to the keel seat 110. The construction order of steps 504 and 505 can be interchanged.

5 Step 506: At least arrange two semicircular terracotta tile mounting assemblies 120 along the length direction of each semicircular terracotta tile 202 at the to-be-mounted position, with each of the semicircular terracotta tile mounting assemblies 120 arranged on the keel seat 110, and adjust an installation slope of the semicircular terracotta tile 202 by adjusting a height of each semicircular terracotta tile mounting assembly 120 relative to the keel seat 110. Figs. 6 and 7 illustrate that the minimum distance between the semicircular terracotta tile 202 and the
10 planar terracotta tile 201 is 2 mm and the maximum distance is 17 mm.

Step 507: Insert the semicircular terracotta tiles 202 through the slots into the insertion connection members 123 of the semicircular terracotta tile mounting assemblies 120 on both ends, so as to hang the semicircular terracotta tile 202 on the semicircular terracotta tile mounting assemblies 120, wherein the semicircular terracotta tile 202 covers part of the planar
15 terracotta tile 201 and is spaced above the planar terracotta tile 201, wherein an end surface of the semicircular terracotta tile 202 is aligned with an end surface of the planar terracotta tile 201 in the length direction.

Step 508: Arrange a baffle 304 between adjacent semicircular terracotta tiles 202 in the length direction to prevent moving of adjacent semicircular terracotta tiles 202 and adjacent
20 planar terracotta tiles 201 in the length direction.

Please refer to Figs. 6 to 7. In order to prevent the safety risk of fragments falling off after the planar terracotta tile 201 and the semicircular terracotta tile 202 are broken, the terracotta tile mounting method provided in Embodiment 3 of the present invention adheres a backside
25 tape 301 to the lower surface of the planar terracotta tile 201 and the lower surface of the semicircular terracotta tile 202 is before the planar terracotta tile 201 and the semicircular terracotta tile 202 are mounted. The broken fragments of the planar terracotta tile 201 and the semicircular terracotta tile 202 are stuck by the backside tape 301 and do not fall off, thereby overcoming the safety risk of the fragments falling off.

Please refer to Figs. 1, 6 and 7. In the terracotta tile mounting method provided in
30 Embodiment 3 of the present invention, a slot 1131 is provided on the supporting seat 113 of the keel seat 110, and a rubber strip 302 is clamped in the slot 1131. The planar terracotta tile

201 is disposed on the supporting seat 113 by resting on the rubber strip 302.

In the terracotta tile mounting method provided in Embodiment 3 of the present invention, the planar terracotta tile 201 is placed on the supporting seat 113 of the keel seat 110 through a buffer gasket 303 provided on the supporting seat 113. At this time, the supporting seat 113 does not need to be provided with a slot 1131.

In the terracotta tile mounting method provided in Embodiment 3 of the present invention, in order to improve the service life and strength of the semicircular terracotta tile mounting assembly 120 and the planar terracotta tile mounting assembly 140, the tile mounting assemblies can be made of a single metal material or an alloy material.

In addition to the effects of Embodiment 1, the terracotta tile mounting method and structure of Embodiments 2 and 3 of the present invention can prevent adjacent semicircular terracotta tiles 202 and adjacent planar terracotta tiles 201 from moving in the length direction by arranging baffles 304, thereby ensuring the reliability, stability and safety of the terracotta tile mounting to avoid the safety risk of slipping caused by movement of the terracotta tiles.

In the terracotta tile mounting method and structure of Embodiments 2 and 3 of the present invention, the semicircular terracotta tile 202 covers part of the planar terracotta tiles 201 and is arranged above and spaced apart from the underlying planar terracotta tiles 201. The spacing distance allows rainwater to flow and avoids the hidden danger of gravity caused by rainwater gathering on the terracotta tiles.

In the terracotta tile mounting method and structure of Embodiments 2 and 3 of the present invention, installing the planar terracotta tile 201 through the buffer gasket 303 can prevent the planar terracotta tile 201 from cracking due to the stress of clamping.

The present invention is not limited to the above-mentioned specific implementations. Obviously, the above-described embodiments are part of the embodiments of the present invention, rather than all the embodiments. Based on the described embodiments of the present invention, all other embodiments obtained by those of ordinary skill in the art fall within the scope of protection of the present invention. Those skilled in the art may make other levels of modifications and changes to the present invention. Thus, if these modifications and variations of the present invention fall within the scope of the claims of the present invention, the present invention is also intended to include these modifications and variations.

CLAIMS

1. A terracotta tile roof hanging system, comprising:

5 a keel seat, which includes a horizontally distributed base, a back seat arranged vertically upward on the base, and supporting seats arranged vertically upward at both ends of the base, the supporting seats being lower than the back seat in height;

10 a semicircular terracotta tile mounting assembly, which includes a hanging seat that is adjustable along a Z direction on the back seat of the keel seat, wherein a cambered plate that matches a curvature of a semicircular terracotta tile extends from each end of the hanging seat in an X direction, and an insertion connection member connectable to a slot of the semicircular terracotta tile is arranged on the cambered plate in a normal direction;

shaft seats symmetrically arranged on both sides of the back seat of the keel seat in the X direction through a transverse bolt, each of the shaft seats being provided with a shaft hole opened in a Y direction; and

15 a planar terracotta tile mounting assembly, which includes a U-shaped auxiliary frame with a notch oriented in the X direction and a shaft plate arranged on the U-shaped auxiliary frame extending in an orientation opposite to the notch, wherein a tail end of the shaft plate is in a shape of a ball head and is hinged in the shaft hole of the shaft seat, wherein the notch of the U-shaped auxiliary frame serves as a mounting clamping opening for a planar terracotta tile, 20 and at least one frame plate of the U-shaped auxiliary frame arranged in the X direction is penetrated and connected with a locking bolt arranged in the Z direction.

25 2. The terracotta tile roof hanging system according to claim 1, wherein the hanging seat is provided with a through trench extending in the Y direction, and the hanging seat is sleeved on the back seat of the keel seat through the through trench, wherein the hanging seat is adjustably mounted on the back seat of the keel seat through an adjustment bolt passing through the hanging seat along the Z direction.

3. The terracotta tile roof hanging system according to claim 1, wherein a clamping slot is provided on the supporting seat, and a rubber strip is clamped in the clamping slot.

30 4. The terracotta tile roof hanging system according to claim 1, wherein multiple sets of fixing bolts arranged along the Y direction are symmetrically provided on the base of the keel

seat on both sides of the back seat.

5. The terracotta tile roof hanging system according to claim 1, wherein the insertion connection member is Y-shaped.

5 6. A terracotta tile mounting method, using the terracotta tile roof hanging system according to claim 4, comprising:

mounting keel seats of terracotta tile roof hanging systems on a mounting structure of an antique building through fixing bolts, wherein each keel seat corresponds to a position of each row of semicircular terracotta tiles to be mounted;

10 at least arranging two shaft seats and two planar terracotta tile mounting assemblies along a length direction of each planar terracotta tile on each width-wise side of the planar terracotta tile at a to-be-mounted position, wherein the planar terracotta tile mounting assemblies are symmetrically arranged on the keel seat through the shaft seats;

15 clamping a side of each planar terracotta tile in the mounting clamping openings of the two planar terracotta tile mounting assemblies through buffer gaskets and locking the side of the planar terracotta tile with locking bolts;

adjusting an angle of installation surface of the planar terracotta tile by adjusting a rotation angle of the shaft plate of the corresponding planar terracotta tile mounting assembly in the shaft hole of the shaft seat around the Y direction;

20 adjusting an installation slope of the planar terracotta tile by adjusting a height of the shaft seat relative to the keel seat;

25 at least arranging two semicircular terracotta tile mounting assemblies along the length direction of each semicircular terracotta tile at the to-be-mounted position, with each of the semicircular terracotta tile mounting assemblies arranged on the keel seat; and adjusting an installation slope of the semicircular terracotta tile by adjusting a height of each semicircular terracotta tile mounting assembly relative to the keel seat;

30 inserting the semicircular terracotta tiles through the slots into the insertion connection members of the semicircular terracotta tile mounting assemblies on both ends, so as to hang the semicircular terracotta tile on the semicircular terracotta tile mounting assemblies, wherein the semicircular terracotta tile covers part of the planar terracotta tile and is spaced above the planar terracotta tile, wherein an end surface of the semicircular terracotta tile is aligned with an end

surface of the planar terracotta tile in the length direction; and

arranging a baffle between adjacent semicircular terracotta tiles in the length direction to prevent moving of adjacent semicircular terracotta tiles and adjacent planar terracotta tiles in the length direction.

5 7. The terracotta tile mounting method according to claim 6, wherein backside adhesive tapes are provided on lower surfaces of the planar terracotta tiles and lower surfaces of the semicircular terracotta tiles before mounting the planar terracotta tiles and the semicircular terracotta tiles.

10 8. The terracotta tile mounting method according to claim 6, wherein the planar terracotta tiles are placed on and connected to the supporting seats of the keel seat through buffer gaskets provided on the supporting seats; or clamping slots are provided on the supporting seats of the keel seat and rubber strips are clamped in the clamping slots, and the planar terracotta tiles are placed on and connected to the supporting seats through the rubber strips.

15 9. The terracotta tile mounting method according to claim 6, wherein the semicircular terracotta tile mounting assemblies and/or the planar terracotta tile mounting assemblies are made of a single metal material or an alloy material.

10. A terracotta tile mounting structure, comprising:

a standing seam roof arranged on a building structure;

20 a standing seam bracket disposed on the standing seam roof and extending upward over the standing seam roof;

a steel purlin mounted above the standing seam roof through an adapter connected to the standing seam bracket;

25 a terracotta tile roof hanging system mounted on the steel purlin through a fixing bolt, wherein the terracotta tile roof hanging system is the terracotta tile roof hanging system according to claims 3 and 4;

a planar terracotta tile clamped in a mounting clamping opening of the terracotta tile roof hanging system through a buffer gasket, wherein the planar terracotta tile is locked through a locking bolt of the terracotta tile roof hanging system and is placed on and connected to a supporting seat of the terracotta tile roof hanging system through a rubber strip in the supporting

seat;

a semicircular terracotta tile hung on an insertion connection member of a semicircular terracotta tile mounting assembly of the terracotta tile roof hanging system through a slot on the semicircular terracotta tile; and

- 5 a baffle arranged on the keel seat or steel purlin between adjacent semicircular terracotta tiles and between adjacent planar terracotta tiles covered by the semicircular terracotta tiles.