(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) EP 3 741 923 A1

(12) EUROPEAN PATENT APPLICATION

(43) Date of publication:
25.11.2020 Bulletin 2020/48

(21) Application number: **20175458.7**

(22) Date of filing: **19.05.2020**

(51) Int Cl.:
E04D 9/00 *(2006.01)* ***A62C 2/06*** *(2006.01)*
B32B 33/00 *(2006.01)* ***E04B 1/94*** *(2006.01)*

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

(30) Priority: **24.05.2019 DK PA201970329**

(71) Applicants:
- **Pedersen, Erling Bach**
  8560 Kolind (DK)
- **Christensen, Carlo**
  8585 Glæsborg (DK)

(72) Inventors:
- **Pedersen, Erling Bach**
  8560 Kolind (DK)
- **Christensen, Carlo**
  8585 Glæsborg (DK)

(74) Representative: **Tellefsen, Jens J. et al**
Patrade A/S
Ceresbyen 75
8000 Aarhus C (DK)

(54) FIRE-PROOF THATCHED ROOF CONSTRUCTION

(57) The object of the present inventions is to provide an improved and more reliable fire protection of a thatched roof construction without the risk of rotting the straw material of the thatched roof. It is also the object of the present invention to provide a method where the thatching of the thatched roof is more agile, fast and thereby reduces costs. The present invention addresses this by providing an improved and more reliable fire protection of a roof construction for a thatched roof, said roof having side edges, eaves and one or more roof ridges, where said roof construction comprises at least one rafter and a thatched roof, where at least one fire-resistant plate provides a fire-protection, where said fire-resistant plate is arranged between said rafter and said thatched roof covering on a first area of said roof construction, where said first area is located along one or more roof edges of the roof construction, where said roof edge is the roof ridge, side edges, the eaves and/or openings in the roof construction, where a plurality of laths is approximately evenly distributed between said rafter and said thatched roof in a second area of said roof construction.

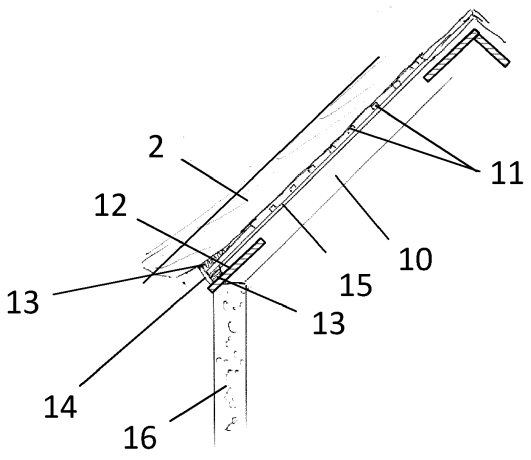

Fig. 2

EP 3 741 923 A1

Description

Field of the Invention

[0001] The present invention relates to a fire-proof roof construction for thatched roofs.

Background of the Invention

[0002] Thatched houses do present a well-known fire risk, and are often harder to insure because of the perceived risk of fire. There have been many suggestions in order to find a solution that introduces a fire safe thatched roof.

[0003] For example, the document EP1464772B1, describes a fire-proof solution for a thatched roof. A glass matting is placed on the laths of the roof construction and preferably covering the entire roof construction. A mineral wool mat is disposed between the thatched roof and the glass matting along the side edges and eaves of the thatched roof. Along the roof ridge of the thatched roof, between the thatched roof and the glass matting is furthermore placed a mineral wool mat.

[0004] Even though the purpose of the document EP1464772B1 is to provide an improved fire-proofing of a thatched roof while simultaneously ensuring sufficient ventilation of the thatched roof, it still has drawbacks. Because thatching is labor-intensive, it is expensive to thatch a roof. The mineral wool and other materials are difficult to handle in stormy and/or rainy weather, when building the roof construction and thatching the roof, it is very complicated to place the straws correctly. Also the mineral wool easily absorbs water, but dries very slowly. This presents a risk of rotting the straws too fast. So the mineral wool complicates the process of thatching the roof, and is therefore very unpopular to use.

[0005] The thatched roof are often constructed so that the roof, also if the roof is fire protected, often is in the risk of water damage, causing the organic material to rot, thereby reducing the life span of the roof, and increasing the costs of maintenance.

[0006] And even though the thatched roof is constructed so the roof is fire protected, the fire risk is still too high. The safety distance for the thatched houses is still large, and the rules and regulation are very demanding.

Object of the Invention

[0007] The object of the present invention is to provide an improved and more reliable fire protection of a thatched roof construction without the risk of rotting the straw material of the thatched roof. It is also the object of the present invention to provide a method where the thatching of the thatched roof is more agile, fast and thereby reduces costs.

Description of the Invention

[0008] The present invention addresses this by providing an improved and more reliable fire protection of a roof construction for a thatched roof, said roof having side edges, eaves and one or more roof ridges, where said roof construction comprises at least one rafter and a thatched roof, where at least one fire-resistant plate provides a fire protection, where said fire-resistant plate is arranged between said rafter and said thatched roof covering on a first area of said roof construction, where said first area is located along one or more roof edges of the roof construction, where said roof edge is the roof ridge, side edges, the eaves and/or openings in the roof construction, where a plurality of laths is approximately evenly distributed between said rafter and said thatched roof in a second area of said roof construction.

[0009] The fire protection may be provided using fire-resistant plates in the roof construction forming an efficient fire barrier, so that the thatched roof cannot easily burn into the roof construction. The fire remains in the edges of the roof and on the roof surface. The fire cannot easily spread under the entire roof like a wild fire, and the spreading speed of the fire is reduced. The fire protection reduces also the harmful and hidden fire, which may crawl under or into the roof construction, e.g. from the eaves and side edges along the thatched roof. If the fire has occurred in the thatched roof, for example in the case of fires from a fireplace, fireworks or direct fire, it will in most cases be limited and/or extinguished without damage to the entire interior of the house. If the thatched roof and/or house are fire protected, it may in some cases allow a reduction in the fire insurance premiums, which is a benefit for the resident.

[0010] When thatching a roof construction, where the roof construction comprises side edges, eaves and roof ridges, the straw material is laid from the eaves and upwards to the roof ridges.

[0011] The roof ridge of the roof construction is finished with a roof ridge part on top of the roof ridge. The said large-scale fire tests furthermore showed that problems arise around the roof ridge of the thatched roof, since the thatched roof has less material thickness around the roof ridge, simultaneously with the roof ridge is typically closed with a roof ridge part of porous material, as e.g. heather, seaweed or straw, and by cross-pieces, entailing that the fire has some material to ignite.

[0012] By igniting fire on a thatched roof in a test set-up, it was observed that the flame border moves from the side edges and/or eaves into the roof face of the thatched roof, and that the flame border moves with a speed determined by the humidity of the straw material and by the wind conditions.

[0013] The thatched roof construction may be constructed so that the roof, which may be built up of organic materials, such as e.g. straw, rushes, seaweed and the like, without the risk of rotting the organic material.

[0014] The first area may be the area along the roof

edges of the roof construction, where the fire-resistant plates along the eaves and the side edges may be 50-80 cm wide, preferably 60 cm. Also the roof ridge is considered to be a first area of the roof construction, where the fire-resistant plates along the roof ridge may be 50-80 cm wide, preferably 60-70 cm. Between the first part area along the roof ridge and the first part area along the eaves and the side edges, a second area is provided. In the second area openings may be provided, such as skylights and attics etc. The edges around openings may also be considered as first area, and provided with fire-resistant plates along the edges of the openings which may be 50-80 cm wide.

[0015] In an advantageous embodiment of the invention a thickness of said fire-resistant plate is substantially equal to the height of the laths, thereby retaining a substantially even slope of the roof construction.

[0016] In the first area of the roof construction at least one fire-resistant plate may be arranged between said rafter and said thatched roof along the roof edges, such as the roof ridge, side edges, the eaves and/or openings in the roof construction. The first area may enclose a second area, where the second area may be provided with a plurality of laths that are approximately evenly distributed between the rafters and the thatched roof. The thickness of the fire-resistant plate may correspond to the height of the laths, when extending from the rafters forming a substantially even slope of the roof construction, so the thatched roof is arranged on an even surface.

[0017] An example could be that the height of the laths is approximately 38 mm, and the fire-resistant plate is 18 mm, the two fire-resistant plates may be arranged on top of each other, and provide a total thickness of 36 mm. There will be no need to arrange the fire-resistant plate on laths, because the fire-resistant plate may be fastened directly to the rafters.

[0018] In a further advantageous embodiment, one or more fire-resistant mats are arranged between the fire-resistance plate and said thatched roof, where a total thickness of said fire-resistant plate and said fire-resistant mats substantially equal to the height of the laths, thereby retaining a substantially even slope of the roof construction.

[0019] Along the first area of the roof construction is the area along the roof ridges, eaves and side edges, fire-resistant plates may arranged between the rafters 10 and fire-resistant mats. The fire-resistant mats are arranged between the fire-resistant plates and the thatched roof on top of and adjacent to the fire-resistant plates. The fire-resistant plates and fire-resistant mats are arranged on top of fillers, parallel to the rafters and thereby following the slope of the roof construction. The fire-resistant plates may be provided as plywood or other similar material with a high fire-resistant. The fire-resistant mats may be glass mats, rock-wool or similar.

[0020] The fire-resistant plate and the fire-resistant mats are arranged in contact with a board edge plate, as the board edge plate is arranged substantially perpendicular to the end of the fire-resistant plate and the fire-resistant mats. The thickness of the fire-resistant plate and the fire-resistant mats together are substantially equal to the height of the laths. This provides a smooth and uniform transition from the fire-resistant plates and mats to the laths. This is a very efficient way of providing fire safety to the building and to the residents.

[0021] In a further advantageous embodiment of the invention glass matting fully or partially covers parts of or the roof construction, preferably arranged between said fire-resistant plates and said thatched roof, and said laths and said thatched roof.

[0022] To prevent fire jumps from the thatched roof and into the roof construction glass mattings are provided, where the glass matting is placed and fastened directly upon the fire-resistant plate and/or the laths of the roof construction. The glass matting is a combination tissue, which may be composed of a layer of glass fabric and a layer of glass splinters, providing the glass matting with the required strength and stability during construction.

[0023] The glass matting may be attached directly on the fire-resistant plates and/or the laths and straightened during the mounting, so that the inner side of the thatched roof appears as a relatively smooth and even structure. The glass matting is turned so that the glass fabric layer faces fire-resistant plate or the laths. This also entails that even if melting of the seams holding the glass matting together are melted, the glass fabric layer will hold up the glass splinter layer, and thereby the protecting function of the glass matting will not be critically reduced.

[0024] Due to the less material thickness around the roof ridge, the heat radiation from the flames may more easily cause melting of the underlying glass matting and bumthrough into the roof construction. In order to avoid this, fire-resistant plates are provided along the roof ridge of the thatched roof.

[0025] In a still further advantageous embodiment of the invention a ventilation space is arranged in the entire roof construction, provided by displacement of said fire-resistant plate in relation to said rafter, and said laths in relation to said rafter, thereby retaining said substantially even slope of the roof construction.

[0026] The displacement of the fire-resistant plates in relation to said rafter and the laths in relation to said rafter is to provide natural ventilation to the straw material. The fire-resistant plates and the laths may be lifted away from the rafters so a ventilation cavity may be provided between the straw material, and/or glass matting, and the isolation of the roof. Still the fire-resistant plates and the laths may be lifted equally so the surface still forms a substantially even slope of the roof construction.

[0027] The advantage is that the thatched roof can be easily ventilated, since natural ventilation of the straw material may be provided due to the construction, whereby the straw material of the thatched roof do not rot and decompose. If the thatched roof is placed directly down against a closed surface where there is little air flow or none at all, the thatched roof cannot be ventilated, and

rot can arise in the straw material, whereby the useful lifespan is strongly reduced.

[0028] In a still further advantageous embodiment of the invention one or more cavities between the adjacent edges of the roof construction and a wall construction are filled with fire-resistant material.

[0029] Along the adjacent edges of the roof construction and the wall construction, where the roof construction is resting on the top surface of the wall construction, cavities will arise and provide an opening for the fire to penetrate. To prevent the fire crawling under the roof construction, the wall construction will be formed so an edge is in contact with the inner side of the thatched roof, in such a way that the closing the roof construction and the wall construction is closed from the outside of the building. The cavity between the roof construction and the top surface of the wall construction on the inner side of the thatched roof may be filled with fire-resistant material, such as mineral wool or mortar.

[0030] Along the adjacent edges of the roof construction and the wall construction, where the roof construction is resting on the top surface of the wall construction, where the roof construction and the top surface of the wall construction on the inner side of the thatched roof may not be in contact, cavities will arise both on the inner side and the outer side of the building, providing a huge opening for the fire to penetrate.

[0031] To prevent the fire crawling through the opening and under the roof construction, a board edge plate may be attached between the thatched roof and the wall construction on the outer side of the building forming a barrier. On the inner side of the building, between the thatched roof and the top surface of the wall construction, a cavity may arise, especially between the rafters. The cavity may be filled with fire-resistant material, such as mineral wool, providing an effective fire protection against fire crawling under roof construction.

[0032] Method for establishing a roof construction for a thatched roof, comprising following steps:

a) arranging at least one fire-resistant plate as fire-protection relative to one or more rafter covering a first area of said roof construction,

b) arranging a plurality of laths approximately evenly distributed relative to one or more rafter in a second area of said roof construction,

c) thatching the roof.

[0033] The method for establishing an improved fire protection of a roof construction for a thatched roof may at the same time be a method the thatching of the thatched roof in a more agile and fast building process. The method reduces the construction and maintains costs, and ensures high safety for the workers, for the residents and for the timespan of the building. The roof construction comprises rafters and a thatched roof, and fire-resistant plates providing a fire-protection when integrated into the roof construction. The fire-resistant plate is arranged between the rafters and the thatched roof covering a bounded area along the eaves and side edges of the thatched roof.

[0034] The method acts of establishing a roof construction for a thatched roof comprises following acts, so the thatching is agile and easy to handle.

[0035] A first act may be arranging at least one fire-resistant plate as fire-protection relative to one or more rafter covering a first area of the roof construction. The first area of the roof construction is the area along the roof ridges, eaves and side edges, where the fire-resistant plates are arranged between the rafters and the thatched roof following the slope of the roof construction. Thatched roof may easily be provided on top of the fire-resistant plates.

[0036] A second act may be arranging a plurality of laths approximately evenly distributed relative to one or more rafter in a second area of said roof construction. The roof construction's second area is bounded by the first area. The second area is provided with a plurality of laths. The laths are approximately evenly distributed crossing the rafters in the second area. The thatched roof may easily be provided on top of the laths.

[0037] A third act may be thatching the roof. The thickness of the fire-resistant plate may be substantially equal to the height of the laths, forming a smooth sloped roof construction, from the roof ridge to the eaves and edges, for the thatched roof to rest on.

[0038] The method further comprises covering the entire roof construction with a glass-matting before thatching the roof, so said glass matting is arranged on said fire-resistant plate or said laths.

[0039] The glass matting may be laid out across the entire roof construction on top of both the laths and the fire-resistant plate, and forms a smooth sloped surface for the thatched roof to rest on. The glass matting is a further fire protection, to prevent the fire to spread downwards and into the house, and to prevent the fire to spread easily under the thatched roof.

[0040] The invention has now been explained with reference to a few embodiments which have only been discussed in order to illustrate the many possibilities and varying design possibilities achievable with the fire protection for thatched roof according to the present invention.

Description of the Drawing

[0041] The embodiments of the invention are described in the following with reference to:

Fig. 1: Shows a house with a thatched roof.

Fig. 2: Shows a section of a first building construction with thatched roof comprising fire-resistant plates.

Fig. 3: Shows a section of a second building construction with thatched roof comprising fire resistant plates.

Fig. 4: Shows a section of a first building construction

with thatched roof comprising fire-resistant plates and mats.

Fig. 5: Shows a section of a second building construction with thatched roof comprising fire resistant plates and mats.

Detailed Description of the Invention

[0042] One embodiment of the invention is explained in the following detailed description. It is to be understood that the invention is not limited in its scope to the following description or illustrated in the drawings. The invention is capable of other embodiments and of being practiced or carried out in various ways.

[0043] Fig. 1 shows a house with a thatched roof, where the house has a roof construction 1, which is a thatched roof 2. The roof construction is in this example provided with half hipped gables 3. The roof construction is bounded by roof ridges 4, eaves 5 and side edges 6. The house is also provided with a chimney, skylights 7 and attics 8. Every opening is bounded, showed with a shaded area, where the shaded area is a first area provided with a fire protection, such as fire-resistant plates. The arrangement of the fire-resistant plates in the roof construction will be explained in the following figures, fig. 2 and fig. 3. The dotted area, bounded by the shaded area, is a second area of the thatched roof 2.

[0044] Fig. 2 shows a section of a first building construction comprising a roof construction 1 with thatched roof 2. The roof construction 1 comprises a plurality of rafters 10 and a plurality of laths 11. The rafters 10 are arranged so that the rafters 10 extend from the roof ridge 4 to the eaves 6, forming the slope of the roof construction 1. On top of the rafters 10, fillers 15 are attached along the rafters from roof ridge 4 to the eaves 6. A roofing underlay may be provided between the rafters 10 and the fillers 15. A similar construction may be arranged without the fillers 15.

[0045] The first area of the roof construction is the area along the roof ridges 4, eaves 5 and side edges 6, as showed in fig. 1. Fire-resistant plates 12 are arranged between the rafters 10 and the thatched roof 2 covering the first area of roof construction 1. The fire-resistant plates 12 are arranged on top of the fillers 15 parallel to the rafters 10, and thereby following the slope of the roof construction 1. The fire-resistant plates may be provided as plywood or other similar material with a high fire-resistant.

[0046] A second area of said roof construction is bounded by the first area, where the second area is provided with laths 11. The laths 11 are approximately evenly distributed between the rafters 10 and said thatched roof in the second area of said roof construction. The laths 11 are attached to the fillers 15 perpendicular to the rafters 10, so the laths 11 are arranged over at least two rafters 10.

[0047] The fire-resistant plates 12 provide a fire barrier, so the thatched roof 2 cannot burn on the back side of the thatched roof 2. The fire remains in the edges of the roof construction 1 and on the outside the thatched roof 2. The fire cannot easily spread under the entire roof construction 1, and the spreading speed of the fire is therefore reduced. If the fire has occurred in or under the thatched roof 2, for example in the case of fires from a fireplace located in the house, chimney fire, fireworks or direct fire, it will in most cases be limited and/or extinguished without damage to the entire interior of the house.

[0048] Along the eaves, between the thatched roof 2 and the wall construction 16, a board edge plate 14 is arranged, so the gap between the outer edge of the wall construction and eaves of the thatched roof 2 is covered by the board edge plate 14. The fire-resistant plate 12 is arranged in contact with the board edge plate 14, as the board edge plate 14 is arranged substantially perpendicular to the end of the fire-resistant plate 12. The cavity that arises between the board edge plate 14, the thatched roof 2 and the fire-resistant plate 12, and the cavity that arises between the board edge plate 14, the wall construction and the fire-resistant plate 12, are filled with fire-resistant material wool 13 or mortar, or similar fire-resistant material.

[0049] Fig. 3: Shows a section of a second building construction with thatched roof 2 comprising fire-resistant plates 12. The roof construction 1 in this example also comprises a plurality of rafters 10 and a plurality of laths 11. The rafters 10 are arranged so that the rafters 10 extend from the roof ridge 4 to the eaves 6, forming the slope of the roof construction 1.

[0050] Along the outer edge 17 of the wall construction 16, the outer edge 17 is arranged in direct contact with the eaves of thatched roof 2. The fire-resistant plate 12 is arranged resting on or in contact with the top of the wall construction 16. A cavity arises between the top of the wall construction 16, the thatched roof 2 and the fire-resistant plate 12, and between the top of the wall construction and the other side of fire-resistant plate 12. The cavities are filled with fire-resistant material wool 13, or similar fire-resistant material.

[0051] The thickness of the fire-resistant plate 12 is substantially equal to the height of the laths 11, so when a glass matting 18 has been laid out across the entire roof construction 1 on top of the laths 11 and the fire-resistant plate 12, and forms a smooth sloped surface for the thatched roof 2 to rest on. An example could be that the height of the laths 11, extending away from the rafters 10, which may approximately be 38 mm. The fire-resistant plate may then be 18 mm thick. Two fire-resistant plates 12 may be arranged on top of each other, and provide a total thickness of 36 mm, which is substantially the same as the height of the laths 11. There will be no need to arrange the fire-resistant plate on laths 11, because the fire-resistant plate may be fastened to the rafters 10.

[0052] Fig. 4 shows a section of a first building construction comprising a roof construction 1 with thatched

roof 2, similar to fig. 2. The roof construction 1 comprises a plurality of rafters 10 and a plurality of laths 11. The rafters 10 are arranged so that the rafters 10 extend from the roof ridge 4 to the eaves 6, forming the slope of the roof construction 1. On top of the rafters 10, fillers 15 are attached along the rafters from roof ridge 4 to the eaves 6. A roofing underlay may be provided between the rafters 10 and the fillers 15. A similar construction may be arranged without the fillers 15.

[0053] The first area of the roof construction is the area along the roof ridges 4, eaves 5 and side edges 6, as showed in fig. 1. Fire-resistant plates 12 are arranged between the rafters 10 and the fire-resistant mats 19, and the fire-resistant mats is arranged between the fire-resistant plates 12 and the thatched roof 2 covering the first area of roof construction 1. The fire-resistant plates 12 are arranged on top of the fillers 15 parallel to the rafters 10, and thereby following the slope of the roof construction 1. The fire-resistant plates may be provided as plywood or other similar material with a high fire-resistant. The fire-resistant mats may be glass mats, rockwool or similar.

[0054] A second area of said roof construction is bounded by the first area, where the second area is provided with laths 11. The laths 11 are approximately evenly distributed between the rafters 10 and said thatched roof in the second area of said roof construction. The laths 11 are attached to the fillers 15 perpendicular to the rafters 10, so the laths 11 are arranged over at least two rafters 10.

[0055] The fire-resistant plates 12 and mats 19 provide a fire barrier, so the thatched roof 2 cannot burn on the back side of the thatched roof 2. The fire remains in the edges of the roof construction 1 and on the outside the thatched roof 2. The fire cannot easily spread under the entire roof construction 1, and the spreading speed of the fire is therefore reduced, if the fire has occurred in or under the thatched roof 2.

[0056] Along the eaves, between the thatched roof 2 and the wall construction 16, a board edge plate 14 is arranged, so the gap between the outer edge of the wall construction and eaves of the thatched roof 2 is covered by the board edge plate 14. The fire-resistant plate 12 and the fire-resistant mats 19 are arranged in contact with the board edge plate 14, as the board edge plate 14 is arranged substantially perpendicular to the end of the fire-resistant plate 12 and the fire-resistant mats 19. The thickness of the fire-resistant plate 12 and the fire-resistant mats 19 together are substantially equal to the height of the laths 11.

[0057] The cavity that arises between the board edge plate 14, the thatched roof 2 and the fire-resistant mats 19, and the cavity that arises between the board edge plate 14, the wall construction and the fire-resistant plate 12, are filled with fire-resistant material wool 13 or mortar, or similar fire-resistant material.

[0058] Fig. 5: Shows a section of a second building construction with thatched roof 2 comprising fire-resistant plates 12 and fire-resistant mats 19. The roof construction 1 in this example also comprises a plurality of rafters 10 and a plurality of laths 11. The rafters 10 are arranged so that the rafters 10 extend from the roof ridge 4 to the eaves 6, forming the slope of the roof construction 1.

[0059] Along the outer edge 17 of the wall construction 16, the outer edge 17 is arranged in direct contact with the eaves of thatched roof 2. The fire-resistant plate 12 and the fire-resistant mat 19 are arranged resting on or in contact with the top of the wall construction 16. On top of and adjacent to the fire-resistant plates 12, the fire-resistant mats 19 are arranged, between the fire-resistant plates 12 and the thatched roof 2. A cavity arises between the top of the wall construction and the back side of fire-resistant plate 12. The cavities are filled with fire-resistant material wool 13, or similar fire-resistant material.

[0060] The thickness of the fire-resistant plate 12 and the fire-resistant mats 19 together are substantially equal to the height of the laths 11, so when a glass matting 18 has been laid out across the entire roof construction 1 on top of the laths 11 and the fire-resistant plate 12, and forms a smooth sloped surface for the thatched roof 2 to rest on. An example could be that the height of the laths 11, extending away from the rafters 10, which may approximately be 38 mm. The fire-resistant plate may then be 18 mm thick. Both the fire-resistant plates 12 and the fire-resistant mat 19 may be arranged on top of each other, and provide a total thickness of 38 mm, which is substantially the same as the height of the laths 11. There will be no need to arrange the fire-resistant plate on laths 11, because the fire-resistant plate may be fastened directly to the rafters 10.

Claims

1. Roof construction for a thatched roof, **characterised in that** said roof having side edges (6), eaves (5) and one or more roof ridges (4), where said roof construction (1) comprises at least one rafter (10) and a thatched roof (2), where at least one fire-resistant plate (12) provides a fire-protection, where said fire-resistant plate (12) is arranged between said rafter (10) and said thatched roof (2) covering on a first area of said roof construction, where said first area is located along one or more roof edges of the roof construction (1), where said roof edge is the roof ridge (4), side edges (6), the eaves (5) and/or openings in the roof construction (1), where a plurality of laths (11) is approximately evenly distributed between said rafter (10) and said thatched roof (2) in a second area of said roof construction (1).

2. Roof construction according to claim 1, wherein a thickness of said fire-resistant plate (12) is substantially equal to the height of the laths (11), thereby retaining a substantially even slope of the roof con-

struction (1).

3. Roof construction according to claim 1 or 2, wherein one or more fire-resistant mats (19) are arranged between the fire-resistance plate (12) and said thatched roof (2), where a total thickness of said fire-resistant plate (12) and said fire-resistant mats (19) substantially equal to the height of the laths (11), thereby retaining a substantially even slope of the roof construction (1).

4. Roof construction according to any of the preceding claims, wherein a glass matting (18) fully or partially covers parts of or the roof construction (1), preferably arranged between said fire-resistant plate (12) or mats (19), and said thatched roof (2), and said laths (11) and said thatched roof (2).

5. Roof construction according to any of the preceding claims, wherein a ventilation space is arranged in the entire roof construction (1), provided by displacement of said fire-resistant plate (12) in relation to said rafter (10), and said laths (11) in relation to said rafter (10), thereby retaining said substantially even slope of the roof construction (1).

6. Roof construction according to any of the preceding claims, wherein one or more cavities between the adjacent edges of the roof construction (1) and a wall construction (16) are filled with fire-resistant material.

7. Method for establishing a roof construction (1) for a thatched roof (2), according to any of claims 1-5, **characterised by** comprising following steps:

a) arranging at least one fire-resistant plate (12) as fire-protection relative to one or more rafter (10), covering a first area of said roof construction (1),
b) arranging a plurality of laths (11) approximately evenly distributed relative to one or more rafter (10), in a second area of said roof construction (1),
c) thatching the roof.

8. Method according claim 7, covering the entire roof construction (1) with a glass-matting (18) before c) thatching the roof, so said glass matting (18) is arranged adjacent to said fire-resistant plate (12) or said laths (11).

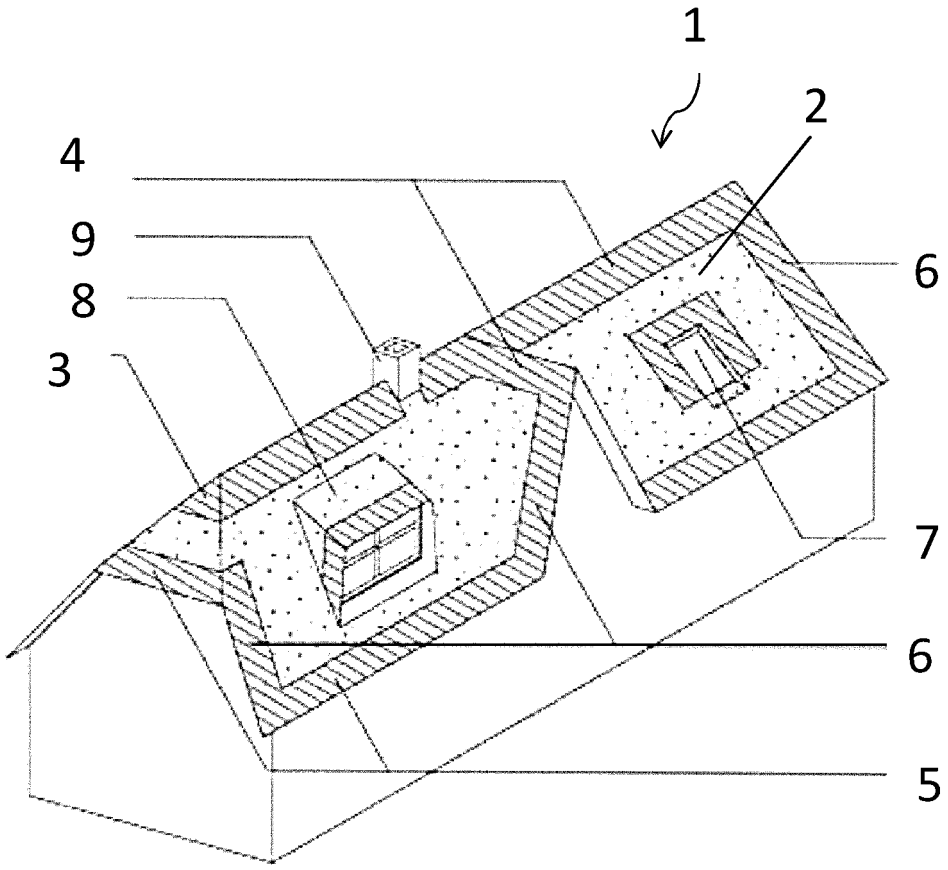

Fig. 1

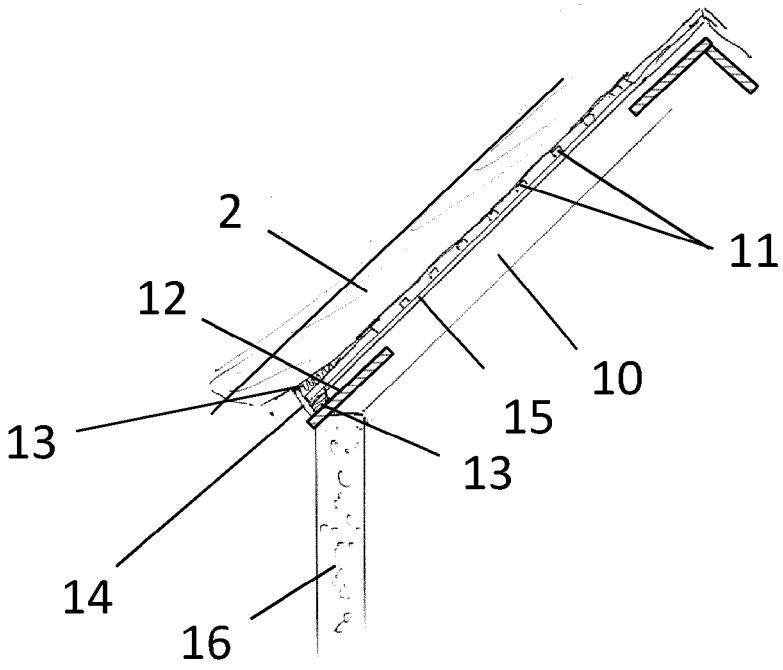

Fig. 2

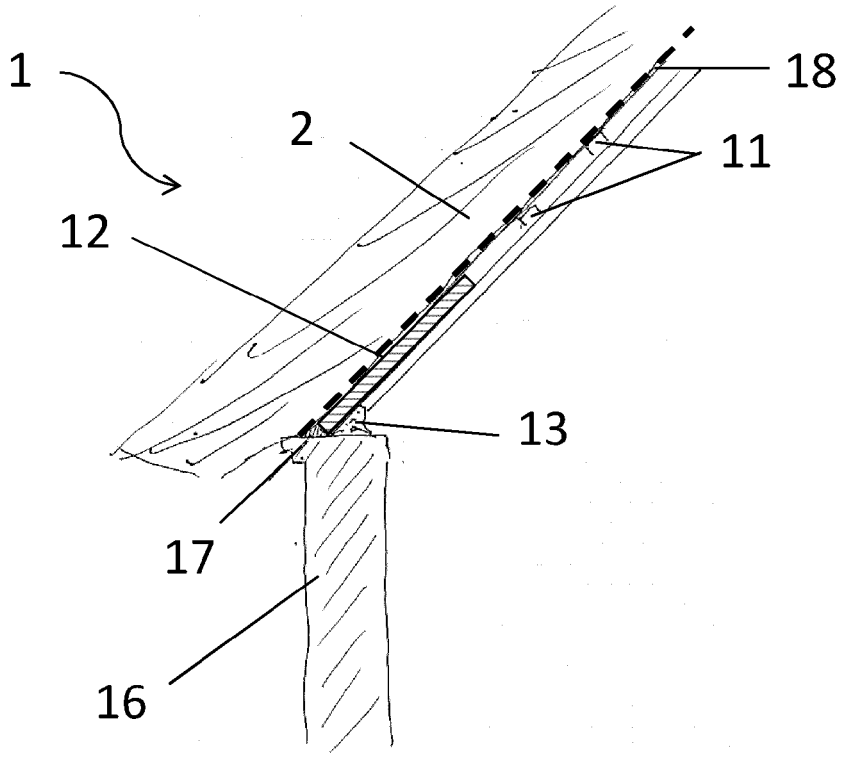

Fig. 3

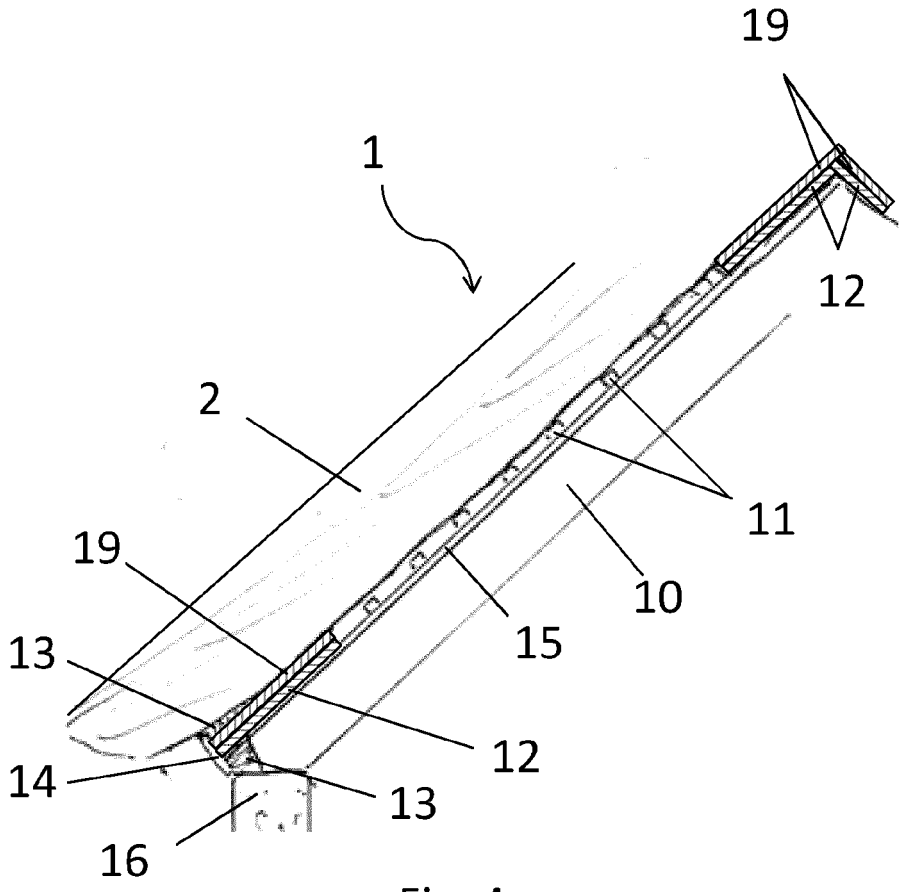

Fig. 4

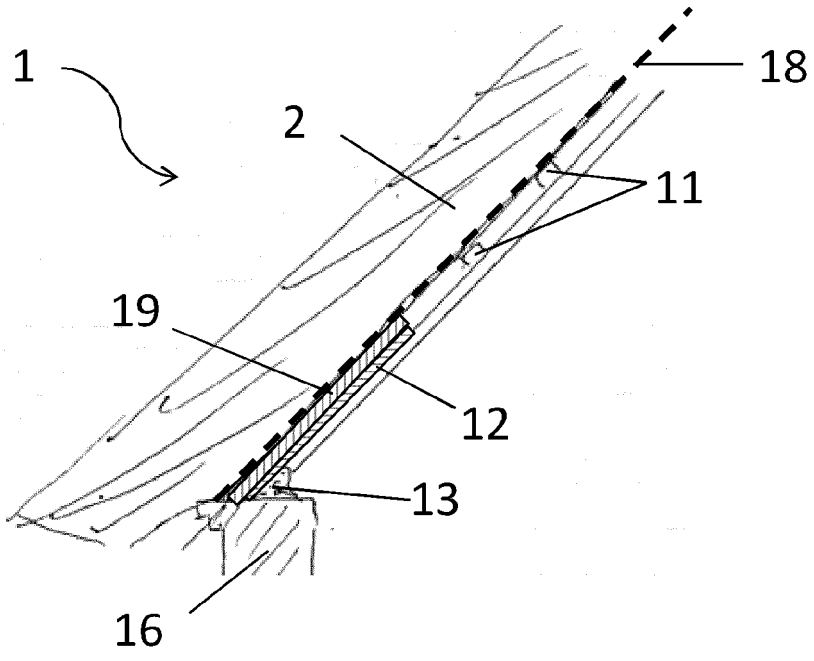

Fig. 5

Europäisches Patentamt
European Patent Office
Office européen des brevets

EUROPEAN SEARCH REPORT

Application Number
EP 20 17 5458

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	GB 2 013 753 A (OSTERGAARD P) 15 August 1979 (1979-08-15) * figures 1,2 * -----	1,2,6,7	INV. E04D9/00 A62C2/06 B32B33/00
X,D	EP 1 464 772 A1 (ERLING BACH PEDERSEN BRANDSIKR [DK]; CARLO F CHRISTENSEN AS [DK]) 6 October 2004 (2004-10-06) * paragraphs [0027], [0030]; figure 3 * -----	1,2,4-8	E04B1/94
X	EP 2 876 227 A1 (HISS REET SCHILFROHRHANDEL GMBH [DE]) 27 May 2015 (2015-05-27) * figure 2 * -----	1-3,6,7	

TECHNICAL FIELDS SEARCHED (IPC)

E04D
A62C
E04B
B32B

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	9 September 2020	Tran, Kim Lien

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
Y : particularly relevant if combined with another document of the same category
A : technological background
O : non-written disclosure
P : intermediate document

T : theory or principle underlying the invention
E : earlier patent document, but published on, or after the filing date
D : document cited in the application
L : document cited for other reasons

& : member of the same patent family, corresponding document

EPO FORM 1503 03.82 (P04C01)

ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 20 17 5458

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

09-09-2020

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
GB 2013753 A	15-08-1979	DE 2903946 A1	09-08-1979
		DK 55278 A	08-08-1979
		GB 2013753 A	15-08-1979
EP 1464772 A1	06-10-2004	AT 367491 T	15-08-2007
		DE 602004007565 T2	17-04-2008
		DK 1464772 T3	05-11-2007
		EP 1464772 A1	06-10-2004
		PL 1464772 T3	31-12-2007
EP 2876227 A1	27-05-2015	DE 102013224146 A1	28-05-2015
		DK 2876227 T3	27-02-2017
		EP 2876227 A1	27-05-2015

EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

REFERENCES CITED IN THE DESCRIPTION

This list of references cited by the applicant is for the reader's convenience only. It does not form part of the European patent document. Even though great care has been taken in compiling the references, errors or omissions cannot be excluded and the EPO disclaims all liability in this regard.

Patent documents cited in the description

- EP 1464772 B1 **[0003] [0004]**