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(54) **A VIBRATION DAMPER FOR AN UNDERROOF**

SCHWINGUNGSDÄMPFER FÜR EIN UNTERDACH

AMORTISSEUR DE VIBRATIONS DESTINE A ETRE INSTALLE SOUS UN TOIT

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Description

The present invention relates to an underroof vibration damper.

A problem in underroofs is that their cloth or foil during unfavourable wind condition may start vibrating, thereby making an undesirable noise or getting damaged.

The object of the invention is to avoid this drawback in underroofs.

US-A-2 919 476 discloses a spring floor for e.g. a gymnasium, which floor is carried by supporting springs which are housed between a fastening member for fastening an upper floor and a foot part resting on or abutting against and fastened to a lower floor structure. The purpose of the spring floor is to protect people jumping on the floor against injuries caused by shocks from the jumps. This implies that the size and spring rate of the supporting spring would make it useless as an underroof vibration damper.

The object is according to the invention met by means of an underroof vibration damper which is characteristic in comprising a fastening member for fastening to a roof construction member, a foot part connected with the fastening member and comprising an abutment face for abutment against an underroof cloth, and a spring between the fastening member and the foot part. By mounting the vibration damper according to the invention in a roof construction it is obtained that the underroof cloth, when not vibrating, may be pressed slightly downwards, which makes it more difficult to start vibrating, and the spring has the effect that there is no danger of overloading of the underroof cloth by thermic movement or in case of heavy wind from an unfavourable direction, which might otherwise make the underroof cloth vibrate or flutter heavily.

The fastening member and the foot part may be interconnected by means of the spring, or the fastening member and the foot part may be interconnected by means of a flexible, but substantially unductile connecting member, the length of which in unbent condition preferably is smaller than the length of the spring in unloaded condition.

The invention will be explained in detail in the following by means of embodiments with reference to the drawing, in which

Figs. 1 and 1a show a roof construction with a vibration damper according to the invention, and Figs. 2a and 2b is a front view and a lateral view of a preferred embodiment of the vibration damper.

Fig. 1 shows a roof construction with rafters 1, above which lengths of underroof cloth 2 have been laid out, said cloth being secured by means of lists 3 over the rafters 1, and on which roof battens 4 are fastened for carrying the roof tiles 5.

On some of roof battens 4 in the interspaces be-

tween the rafters 1 vibration dampers 6 are provided to prevent the underroof cloth 2 from vibrating due to influence from wind.

The vibration dampers, one of which is shown in a principle embodiment in Fig. 1a, comprise a fastening member 7 for fastening a roof construction element such as a roof batten 4, for instance by means of a nails or a screw, which is passed through a hole 8. The vibration damper 6 furthermore has a foot 9, with which it may abut on the underroof cloth, pressure from the vibration damper towards the underroof cover being distributed over a certain area. Between the fastening member 7 and the foot 9 a spring 10 is provided which in the embodiment according to Fig. 1a is integral with the foot 9 and the fastening member 7. Hereby is achieved that the vibration damper 6 can abut resiliently onto the underroof cloth 2.

In a preferred embodiment shown in Figs. 2a and 2b of the vibration damper, the fastening member 7 is connected by two intermediate pieces 11 which are bendable on account of hinges 12. The intermediate pieces 11 are further hinged to the fastening member 7 and the foot 9, respectively, such that these two unimpeded by the intermediate pieces 11 can be moved towards each other. The spring 10' acts against such a movement, said spring being placed between the intermediate pieces and kept in place by protrusions on or recesses in the top side of the foot 9 and the underside of the fastening member 7. In the embodiment shown in Figs. 2a and 2b the fastening member 7, the foot 9 and the intermediate pieces 11 are formed integrally, the hinges 12 and the hinges between the intermediate pieces 11 and the fastening member 7 and the foot 9, respectively, are constituted by areas with reduced thickness as will be seen from Fig. 2a. The spring 10' may be dimensioned such that it is interlocked between the fastening member 7 and the foot 9, whereby the force, by which the underroof cloth under special wind conditions will act on the vibration damper 6, is to surpass the bias of the spring, before the cloth can move the foot 9 and consequently itself towards the roof batten 4, on which the vibration damper 6 is mounted.

Claims

1. An underroof vibration damper, **characterized** in a fastening member (7) for fastening to a roof construction member (4), a foot part (9) connected with the fastening member (7) and comprising an abutment face for abutment against an underroof cloth (2), and a spring (10) between the fastening member (7) and the foot part (9).
2. A vibration damper according to claim 1, **characterized** in that the fastening member (7) and the foot part (9) are interconnected by means of the spring (10).

3. A vibration damper according to claim 1, **characterized** in that the fastening member (7) and the foot part (9) are interconnected by means of a flexible, substantially inductile connecting member (11).

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4. A vibration damper according to claim 3, **characterized** in that the length of the connecting member (11) in unbent condition is smaller than the length of the spring (10) in unloaded condition.

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5. A method for damping vibrations in an underroof comprising:

- providing a vibration damper comprising a fastening member (7) for fastening to a roof construction member (4), a foot part (9) connected with the fastening member (7) and comprising an abutment face for abutment against an underroof cloth (2), and a spring (10) between the fastening member (7) and the foot part (9), and
- fastening said fastening member (7) to a roof construction member (4) and abutting said abutment face against an underroof cloth (2).

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Patentansprüche

1. Schwingungsdämpfer für ein Unterdach, dadurch **gekennzeichnet**, dass dieser ein Befestigungselement (7) zur Befestigung an ein Dachkonstruktionselement (4), einen mit dem Befestigungselement (7) verbundenen Fussteil (9) und eine Auflagefläche zum Abstützen an das Unterdachtuch (2) sowie eine Feder (10) zwischen dem Befestigungselement (7) und dem Fussteil (9) umfasst.

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2. Schwingungsdämpfer nach Anspruch 1, dadurch **gekennzeichnet**, dass das Befestigungselement (7) und der Fussteil (9) mittels der Feder (10) gegenseitig verbunden sind.

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3. Schwingungsdämpfer nach Anspruch 1, dadurch **gekennzeichnet**, dass das Befestigungselement (7) und der Fussteil (9) mittels eines flexiblen im wesentlichen undehnbaren Verbindungselementes (11) gegenseitig verbunden sind.

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4. Schwingungsdämpfer nach Anspruch 3, dadurch **gekennzeichnet**, dass die Länge des Verbindungselementes (11) in ungebogenen Zustände kleiner ist als die Länge der Feder (10) in unbelasteten Zustände.

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5. Verfahren zur Schwingungsdämpfung in einem Unterdach, umfassend:

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- Erzeugung einer Schwingungsdämpfung um-

fassend ein Befestigungselement (7) zur Befestigung an ein Dachkonstruktionselement (4), einen mit dem Befestigungselement (7) verbundenen Fussteil (9) und umfassend eine Auflagefläche zum Abstützen an das Unterdachtuch (2) sowie eine Feder (10) zwischen dem Befestigungselement (7) und dem Fussteil (9) und

- Befestigung des erwähnten Befestigungselements (7) an ein Dachkonstruktionselement (4) und Unterstützung der erwähnten Unterstützungsfläche am Unterdachtuch (2).

Revendications

1. Amortisseur de vibrations à installer sous un toit, **caractérisé** par une pièce (7) de fixation à un élément (4) de construction du toit, un pied (9) relié à la pièce de fixation (7) et comportant une surface d'appui contre un revêtement (2) sous le toit et un ressort (10) entre la pièce de fixation (7) et le pied (9).

2. Amortisseur de vibrations selon la revendication 1, **caractérisé** en ce que la pièce de fixation (7) et le pied (9) sont mutuellement reliés par le ressort (10).

3. Amortisseur de vibrations selon la revendication 1, **caractérisé** en ce que la pièce de fixation (7) et le pied (9) sont mutuellement reliés par une pièce flexible (11), essentiellement non-ductile.

4. Amortisseur de vibrations selon la revendication 3, **caractérisé** en ce que la longueur de la pièce de liaison (11) à l'état non plié est inférieure à la longueur du ressort (10) à l'état non chargé.

5. Procédé d'amortissement de vibrations sous un toit, comprenant:

- formation d'un amortisseur de vibrations comportant une pièce de fixation (7) à un élément (4) de construction du toit, un pied (9) relié à la pièce de fixation (7) et comprenant une surface d'appui contre un revêtement (2) sous le toit, et un ressort (10) entre la pièce de fixation (7) et le pied (9), et
- fixation de ladite pièce de fixation (7) à un élément (4) de construction du toit et mise en appui de ladite surface d'appui contre un revêtement (2) sous le toit.

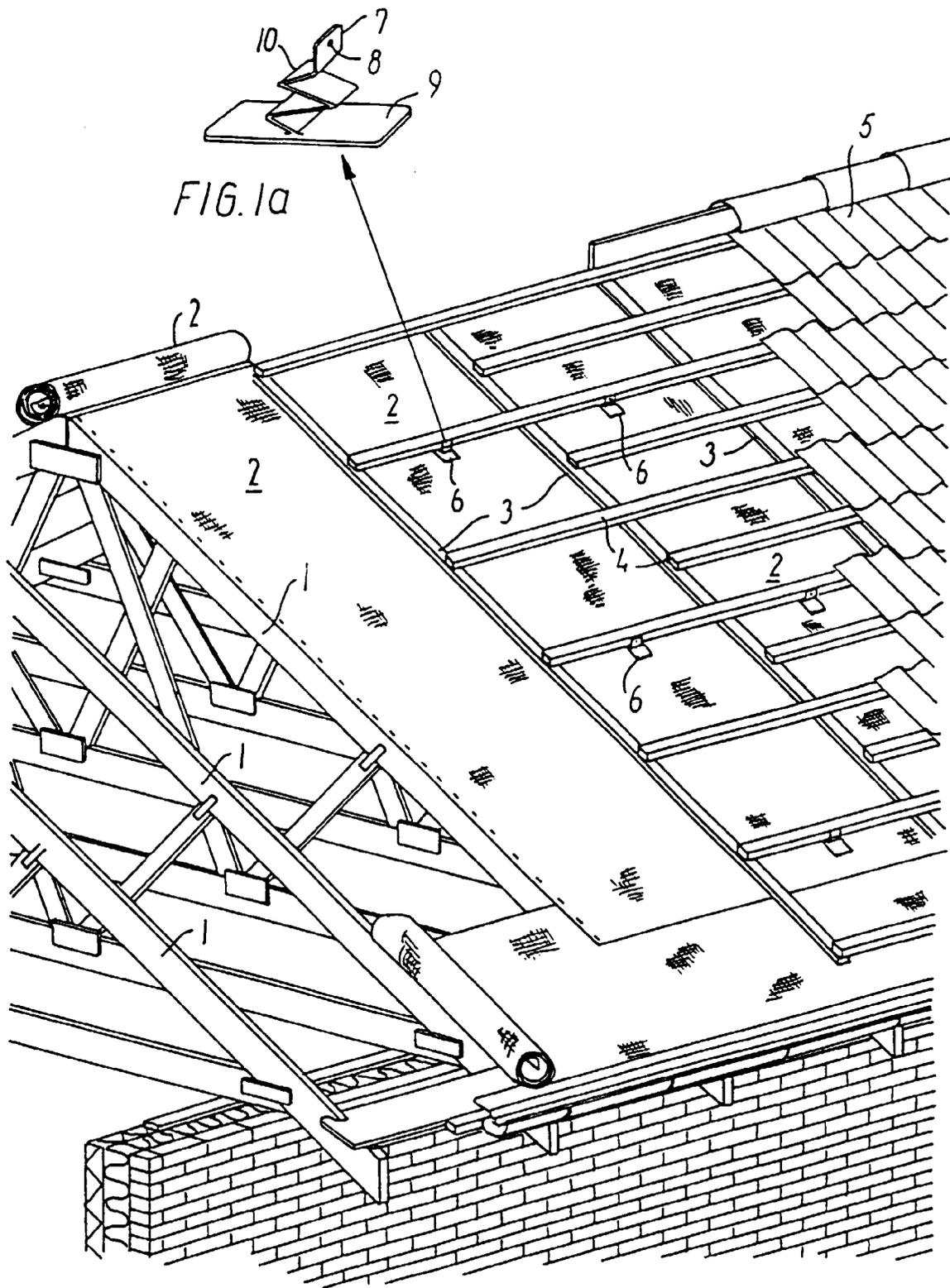


FIG. 1

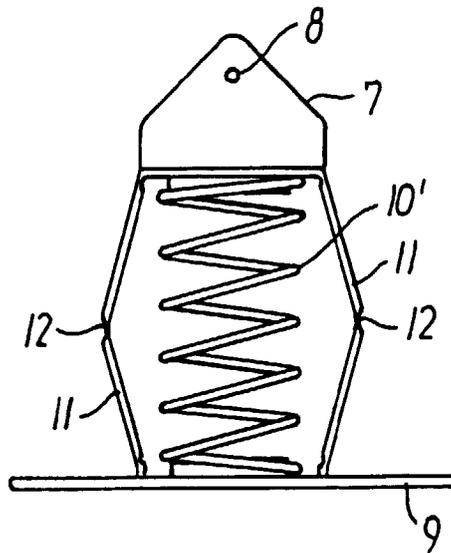


FIG. 2a

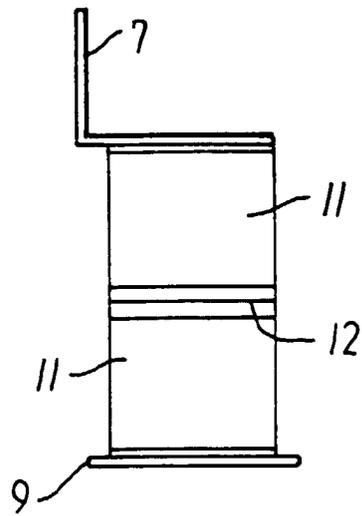


FIG. 2b