



166166



G00002

1

WORLD INTELLECTUAL PROPERTY ORGANIZATION
International Office

PCT

INTERNATIONAL APPLICATION PUBLISHED ACCORDING TO THE TREATY
REGARDING INTERNATIONAL COOPERATION IN THE AREA OF PATENTS (PCT)

(51) International patent classification⁶:

E04F 19/06

A1

**(11) International publication
number:** WO 99/01628

(22) International application date:

June 30, 1998

(43) International publication

date: January 14, 1999

(30) Priority dates:

297 11 606.1 July 2, 1997 Germany

(81) Designated nations: BR, CA,
CN, CZ, HU, JP, PL, SG, SK,
US, European Patent (Austria,
Belgium, Switzerland, Cyprus,
Germany, Denmark, Spain,
Finland, France, United
Kingdom, Greece, Ireland, Italy,
Luxembourg, Monaco,
Netherlands, Portugal, Sweden)

(71) Applicants (*for all designated states
except U.S.*): Herm, Friedrich Künne GmbH
& Co. (Germany/Germany), 9 Romerweg,
Lüdenscheid 58513, Germany

(73) Inventor and

(75) Inventor/applicant (*only for U.S.*):
Kemper, Hans, A. (Germany/Germany) 19
Wehestrasse, Kierspe 58566, Germany;
Sondermann, Frank (Germany/Germany); 5
Frankhäuserhö, Dreishagen/Frankhausen
57489, Germany

(74) Attorneys: Staeger, Sigurd etc.,
31 Müllerstrasse, Munich 80649, Germany

(54) Title: BRIDGING DEVICE

(54) Title: BRIDGING DEVICE

Published

*with international research
report. Prior to expiration of the
time allowed for amending the
claims; publication will be
republished if amendments made*

“BRIDGING DEVICE”

The invention relates to a height-adjustable bridging device for joints in accordance with the preamble of the main claim.

Such height-adjustable bridging devices are used where a transition must be created between a higher and a lower floor covering, such as between a parquet floor and a rug, or between a door sill and a floor covering at a lower level. It is also used for same-height transitions at the doorsill or as an expansion joint for subdividing larger surfaces.

Especially at locations that are subject to heavy use, it is necessary to replace a badly worn floor covering. In such a case, the bridging device should be loosened and re-used. The differing heights between such elements as a sill and an adjoining rug can be aligned by tapping on the upper element. However, here a danger exists that the upper element

will tip and move aside while being tapped on.

From DE 296 00 057 a joint profile for floor coverings is known in which a base strip has blades that point upwards and are placed at an interval from each other. On each of their sides that are oriented inwards, they are equipped with a saw tooth profile. The support device on the cover strip consists of two ribs placed at an interval from each other, each of which adjoins the outer side of the blade in gliding fashion. This embodiment shape had a disadvantage in that it cannot sufficiently carry out a supporting function, since it is configured to yield too readily. This flexibility is required to permit the blades of the base profile to move laterally outwards when the upper retaining bar is admitted, if the sawtooth holders are to move past each other until they reach their seating position. To make this outward motion possible, the ribs must be pliable. This, however, has the result that insufficient supporting function is guaranteed.

Therefore the object of the invention of creating a height-adjustable bridging device in which tipping and lateral motion are largely avoided.

The problem is solved by the features indicated in the characterizing part of the main claims.

The invention-specific support device advantageously consists of a support bar placed at an interval from the upper retaining bar, which, with a force uptake piece, exerts a combined effect on the base element. The fact that the support device is provided at an interval from the upper support bar generates a large leverage which counteracts the tipping moment.

Advantageous configurations of the invention are indicated in the subordinate claims.

The invention is explained in greater detail in the drawings. Shown in the drawings are:

Figure 1: a height-adapted bridging device in a side view.

Figure 2: a height-adapted bridging device in the invention-specific form as a wall border in the upper position.

Figure 3: the device as per figure 2 in the lower position.

Figure 4: a bridging device for bridging a joint between same-height floor coverings, such as laminated or parquet floors, in the upper position;

Figure 5: the device as per figure 4 in the lower position

Figure 6: a base element, and

Figure 7: a bridging device according to the invention with an alternative base profile.

Figure 1 shows the bridging device according to the invention. In essence it consists of an upper element 2 and a base element 3. In the embodiment depicted, upper element 2 has cover wings 2' and 2'' of differing width, which extend to both sides of a middle section 2'''. Beneath middle section 2''' in the embodiment depicted, a retaining bar 4 is attached. In the angle between retaining bar 4 and side wing 2', a bending channel 4' is configured. Retaining bar 4 is held by two bars 6, 6' that project upward, which are attached elastically to base element 3. For holding, a holding device 5, is placed both on the retaining bar 4 and on the retaining bars 6, 6' which point upwards.

In the embodiment depicted, the holding device consists of a multiplicity of grooves 5' in retaining bar 4 which essentially run parallel in the longitudinal direction of the bridging device which engage into projections 6'' of retaining bars 6, 6'.

One particular feature is that retaining bars 6, 6' are of differing heights, with the resulting offset arrangement of retaining projections 6". This measure, and the insertion slant 7, allow retaining bar 4 to be put on with great ease.

A support device 8 is depicted from a perspective in the direction of the wider cover wing 2". Support device 8 has a retaining bar 9 which is placed at a distance from retaining bar 4 in the transition area between the middle section 2" and the lateral wing 2", beneath the upper element. Combined with this retaining bar 9 is a force uptake piece 10, which in the embodiment depicted is configured as a bar 12. Force transfer is accomplished through a toothed device 11.

In figure 1, the outlines of the wider wing 2" are depicted as both dashed and continuous. Normally the continuous-line setting is the configuration as installed. The dashed [*should be continuous- Tr.*] line of side wing 2" represents the delivered configuration which the upper element maintains when it is in the highest position. After installation, the blade assumes the continuous-line [*should be dashed-line - Tr.*] position, which can also be designated as the lower setting. To assume this position, the upper element is beaten down in the area of bar 4 with a hammer and a wooden support (impact block). This can lead to tipping which is absorbed by the holding device. As soon as blade 2' rests on the left-side surface, the seating process is complete, with the particular thickness of the left-side surface being taken into account at all points.

Figures 2 and 3 show that the device is adjustable on floor coverings that have differing thicknesses. In figure 2, the uppermost position, and 3, the lowest position, a bridging device for bordering on walls is depicted, whereby the retaining bar 15 becomes a support apparatus at the wall. In addition, however, if used at sills or platforms, it also serves as a cover, to largely hide from view the base element 3 which may be of a different color.

Figures 4 (uppermost position) and 5 (lowest position) depict a bridging device which is suited for use in joints between floor coverings at the same level, especially for bridging over expansion joints 16 in larger laminate or parquet floors.

Figure 7 shows a base element in detail. Figure 7 shows a further embodiment of the bridging device according to the invention. Here, the base element is equipped with a corrugated projection 13, whereby the corrugation is rectangular. On each outer edge of the corrugation, provision has been made of projections for the holding devices or toothed devices 11 for the support device. In one such base rail, a supporting moment is provided when the longer cover wing 2" is hammered downward, as is required in certain joint configurations.

Provision can also be made in the implementation according to Figure 1 to place the bar 12' not on the side as shown, but on the other side of bar 9. The depiction in the drawing is configured for laminated floors with thicknesses between 6 and 11 mm; the same principle holds true for parquet floors between 11 and 16 mm thick. Only where the height differences to be bridged are greater are these devices designed to be larger.

Height-adjustable Bridging Device

Claims

- 5 1. Height-adaptable bridging device (1) for joints between floor coverings, consisting of an upper (2) and a base element (3), whereby, on upper element (2), at least one upper retaining bar (4) is provided with a holding device (5) configured on it bilaterally, and
- 10 with upwardly projecting retainer bars (6,6') placed on the base element which embrace upper retainer bar (4) bilaterally on its holding device, and have complementary holding devices (5'),
- 15 as well as a support device (8) with a support bar (9) which prevents tipping between upper (2) and base element (3),
- 20 characterized in that
- 25 the support bar (9) operates jointly with a force uptake piece (10) placed at an interval from retaining bars (6,6') on base element (3).
- 30 2. Bridging device according to claim 1, characterized in that support bar (9) has a toothed device (14), which acts jointly with an appropriate device on force uptake piece (10).
- 35 3. Bridging device according to claim 1 or 2, characterized in that force uptake piece (10) is a bar (12) placed on base element (3) and pointing upwards.

4. Bridging device according to claim 1 or 2, characterized in that force uptake piece (10) is a corrugation-shaped projection (13) attached on base element (3).
5. Bridging device according to one of claims 1 to 5 [sic], characterized in that force uptake piece (10) is arrayed on the side of support bar (9) which faces the upper retaining bar.
6. Bridging device according to one of claims 1 to 6 [sic], characterized in that retaining bars (6,6') are of differing heights.
10. Bridging device according to one of claims 1 to 6, characterized in that retaining bar (6') which faces support bar (9) is lower than the opposite retaining bar (6).