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(54) **Door and/or window frame with adjustable width**

Tür- und/oder Fensterrahmen mit verstellbarer Breite

Cadre de porte et/ou de fenêtre à largeur réglable

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Description

Technical field

[0001] The present invention provides a frame with posts, the width of which being adjustable to the thickness of the wall. Furthermore, the invention relates to a door, wherein this frame consists of two upright frames and one transverse frame, and a window, comprising a frame with two upright and two transverse frames.

Background of the invention

[0002] A door is composed of two parts, namely a fixed part, called door frame or door casing, and a moving part, called door leaf. The function of the frame is finishing the opening in the structure of a building, and furthermore it offers a doorstop for the door leaf and the possibility to attach hinges and lock pieces. The frame consists of two upright posts and one transverse post which are attached to the wall and which are composed of finishing frames at both sides of the wall which grip the casing, usually provided with a doorstop. The frame of a window is often composed in the same way, except with the difference that two transverse posts are provided instead of one.

[0003] When casing doors and windows, the frame needs always to be adapted to the thickness of the wall, which often may differ, for example according to the type of stone, the thickness of the plasterwork or the type of inner wall. At present, this is done by sawing the casing down to size or by using a kind of prefab frame which operates by means of a sliding system in the finishing frame.

[0004] However, the problem with this finishing system is that the finishing frame is located too far from the casing which leads to aesthetic deviations. Moreover, only a difference in thickness of maximum 2 to 3 cm may be accommodated, such that a dealer still needs to have several widths of casings on stock.

[0005] Also, when sawing the casing down to size, several problems arise. As an individual seldom has the necessary tools for sawing down a casing, the casing is often processed to the exact width by a skilled person with a professional expensive saw. Then, the skilled person has the choice to carry out this narrowing at its workshop, which is not very practical from an organizational and logistical point of view, or he can choose to saw down the casing at the construction site, which is again very laborious and rather time-consuming.

[0006] As can be clearly concluded from the problems described above, there is a need for a door and/or window frame which does not show these disadvantages.

[0007] Door frames and casings of which the width is adjustable have been disclosed in the art, for instance in WO 2004/005658, DE 297 13 541 U1 or US 4 782 630. However, although such frames provide increased adjustability, there is a need in the art to further improve adjustability of frames with a limited kit of parts.

[0008] Hence, the present invention provides a solution for these problems by providing a frame which can be adapted in a very simple manner to the thickness of the wall.

Summary of the invention

[0009] In its most general form, the present invention provides a frame or casing according to claim 1, wherein the width of the frame is adjustable by comprising breaking areas in the longitudinal direction. Because of this, the frame may be ordered and assembled without knowing in advance the thickness of the wall, and time-consuming and impractical pretreatments, such as sawing the casing down to size, become redundant. Furthermore, it offers also a solution to the dealer who does not need to store a vast stock of casings with a lot of different widths. Also, another advantage is that the adaptation in the frames is not visible compared to the effect obtained with the sliding system in the finishing frame.

[0010] The frame of the invention is further **characterized in that** a frame comprises two partial frames which fit into each other, the first partial frame having a fixed width, whereas the width of the second partial frame is adjustable. Preferably, the second partial frame contains breaking areas in the longitudinal direction, along which the partial frame may be easily and in a controlled manner be broken on certain predefined locations. In this way, after fitting the second, shortened partial frame with the first partial frame, a frame is composed and consequently also a frame with a smaller width, which is adapted to the thickness of the wall.

[0011] Fitting the two partial frames together is done by means of a fitting means, wherein the fitting means part of the second partial frame is at least partial complementary to that of the first partial frame. This complementarity ensures that both partial frames fit easily and firmly into each other. The fitting means consists of a male and female part, preferably respectively a long lip with breaking areas and a recess, wherein the recess is able to receive at least a part of the long lip. The female part is present in the partial frame with fixed width, whereas the male, adjustable part is present in the partial frame with adjustable width. To ensure additional anchoring of both partial frames, in one embodiment of the invention both parts of the fitting means are provided with interlocking hook elements.

[0012] Depending on the desired finishing, the frames of the casing can be made of MDF, another type of fibreboard, a type of wood, aluminium or a plastic.

[0013] Finally, the present invention also relates to a door with an adjustable frame as described above, consisting of two upright posts and one transverse post, and it further provides a window composed of a frame with two upright and two transverse posts according to the invention.

Short description of the figures

[0014]

Fig. 1 shows a cross section of a frame according to an embodiment of the invention in an assembled state.

Fig. 2 shows a cross section of a frame according to another assembled embodiment of the invention wherein the fitting means consists of interlocking hook elements.

Detailed description of the invention

[0015] The objective of the present invention is to provide a frame for a door and/or window, the width of which being adjustable to the thickness of the wall in a simple manner. For this, use is made of a frame consisting of two partial frames which fit into each other, one having a fixed width, the other having an adjustable width.

[0016] Fig. 1 shows a cross section of a frame according to one embodiment of the invention in an assembled state. The frame consists of a first (**2**) and a second (**3**) partial frame which is fitted between two finishing frames (**1, 4**), which have been placed at both sides of the wall (**10**). The first partial frame (**2**) has a fixed width and comprises a doorstop (**11**) for stopping the door leaf (**9**), and a protruding lip (**7**) with a recess (**12**) in between. The second partial frame (**3**) is characterized by an adjustable width and comprises a long lip (**8**) provided with breaking areas (**5**) by means of indentations made in the interior layer of the long lip (**8**). The two partial frames (**2, 3**) fit into each other by means of a (partially) complementary fitting means consisting of a female part, namely the recess (**12**) between the doorstop (**11**) and protruding lip (**7**) of the first partial frame (**2**), and a male part, namely the long lip (**8**) with breaking areas (**5**) of the second partial frame (**3**).

[0017] By means of triangular indentations at the interior, i.e. the non-visible side after assembly, breaking areas (**5**) are created in the long lip (**8**) of the second partial frame (**3**). Because of this, the desired part of the second partial frame (**3**) may easily be broken off. When subsequently fitting both partial frames (**2, 3**) together, the part where the long lip (**8**) has been broken off, fits the recess (**12**) under the doorstop (**11**) in a concealed way. In this way, the width of the second partial frame (**3**) can be shortened until, after fitting together, the total width of both partial frames (**2, 3**) approximately corresponds to the thickness of the wall. The fact that a recess (**12**) has been provided which receives the broken part of the long lip (**8**), has several advantages. It ensures a good connection and attachment of both partial frames (**2, 3**) after assembly, the broken part is not visible after assembly and no fragments may further break off after the breaking.

[0018] As shown in Fig. 2, in another embodiment, the long lip (**8**) of the second partial frame (**3**) also comprises hook areas (**6**) adjacent to the breaking areas (**5**). In this figure, a hook element is located at the interior of the long lip (**8**), between each two adjoining breaking areas (**5**), here a semi-ball, which forms the hook area (**6**), and attached to it is a more planar part which is rounded towards the next breaking area (**5**). The protruding lip (**7**) of the first partial frame (**2**) comprises a hook element essentially complementary to the semi-ball-shape of the long lip (**8**). By implementing the long (**8**) and protruding (**7**) lip in this way, it is possible to hook the second, tailor-made broken partial frame (**3**) into the first partial frame (**2**), such that both partial frames (**2, 3**) are more firmly fitted together before they are fitted in between both finishing frames (**1, 4**).

[0019] The assembly of a frame according to the present invention occurs in the following manner. Firstly, the first partial frame (**2**) is exactly positioned and levelled at its position and screwed tightly against the wall. The screws are preferably introduced in the protruding lip (**7**), as this part is not visible after assembly. The broken to size partial frame (**3**) is hooked into the first partial frame (**2**) and is thus immediately levelled. When using the embodiment of Fig. 1, the hooking comprises sliding the broken to size long lip (**8**) into the recess (**12**). When mounting the embodiment of Fig. 2, the second partial frame (**3**) with the part where the long lip (**8**) has been broken of, is firstly positioned perpendicular to the protruding lip and subsequently put in place by moving and rotating at the same time the second partial frame (**3**) with respect to the first partial frame (**2**). The long lip (**8**) is moved over the more planar rounded part until the broken part has disappeared in the recess (**12**) and the hook element is located in the complementary part of the protruding lip (**7**). Subsequently, along both sides of the composed frame (**2, 3**) a finishing frame (**1, 4**) is placed which ensures the further fitting of the composed frame (**2, 3**). Eventually everything may be injected or fixed with construction foam.

[0020] The choice of material the frames are made of, depends on the desired finishing. When a massive wooden door leaf is chosen, preferably the frame is also made of the same type of wood. Painted door leafs may also be framed with massive wood but as soon as the frame is also to be painted, preferably fibreboard is used and even more preferably MDF, because of its better painting results. When washability is an important factor, plastic or aluminium is preferred, which is also frequently chosen for its metal colour. Moreover, other types of material are also possible, but as the previous ones are the most common ones, others are not discussed here in further detail. Of course, it is clear for the skilled person that the present invention is not restricted to the described types of material, but that this discussion should be considered as purely illustrative.

[0021] The above described frames are especially designed for the formation of a frame or casing for a door and/or window. To this end, in the case of the door, at the side two upright frames and on top one transverse

frame is mounted. In the case of a window, at the bottom also a transverse frame is provided. The invention thus protects also a door and/or window comprising a frame with one or more features of the invention.

[0022] An essential feature of the invention is the presence of breaking areas (**5**). A further development is the combination of a hook connection (**6**) with a protruding lip (**7**), as a result of which the frames may be mounted much more easily and more rapidly, both by a skilled person and a layman. Furthermore, the frame may be adapted to the thickness of the wall in a very simple way, namely by breaking by hand, as a result of which the measuring in advance and time-consuming and cumbersome pretreatments, such as sawing down the casing, become superfluous. For a dealer, this has the advantage that he only needs to have a limited stock of casings with several widths available.

Claims

1. Frame or casing comprising a number of upright frames (1, 4) and at least one transverse frame (2, 3), which are suitable to be mounted in a wall recess, **characterized in that** the width of the frames is adjustable by comprising breaking **(5)** areas in the longitudinal direction.

2. Frame according to claim 1, wherein a frame comprises two partial frames **(2, 3)** that fit into each other, of which a first partial frame **(2)** has a fixed width and a second partial frame **(3)** has an adjustable width.

3. Frame according to any one of the preceding claims 1 to 2, wherein the two partial frames **(2, 3)** described in claim 2 fit into each other by means of an at least partially complementary fitting means.

4. Frame according to any one of the preceding claims 1 to 3, wherein the fitting means consist of a female part, preferably a recess **(12)** in the partial frame **(2)** with fixed width, and a male part, preferably a long lip **(8)** with breaking areas **(5)** on the partial frame **(3)** with adjustable width.

5. Frame according to any one of the preceding claims 1 to 4, wherein the fitting means consists of a number of interlocking hook elements **(6).**

6. Frame according to any one of the preceding claims 1 to 5, wherein a frame consists of MDF, another type of fibreboard, a type of wood, aluminium or a plastic.

7. Door comprising a frame according to any one of the preceding claims 1 to 6, consisting of two upright frames and one transverse frame.

8. Window comprising a frame according to any one of the claims 1 to 6, consisting of two upright frames and two transverse frames.

Patentansprüche

1. Rahmen oder Zarge, umfassend eine Anzahl aufrechter Rahmen (1, 4) und mindestens einen Querrahmen (2, 3), die sich zur Montage in einer Wandausnehmung eignen, **dadurch gekennzeichnet, dass** die Breite der Rahmen einstellbar ist, indem diese Abbrechabschnitte (5) in der Längsrichtung umfassen.

2. Rahmen nach Anspruch 1, wobei ein Rahmen zwei Teilrahmen (2, 3) umfasst, die ineinander passen und von denen ein erster Teilrahmen (2) eine feste Breite und ein zweiter Teilrahmen (3) eine einstellbare Breite aufweist.

3. Rahmen nach einem beliebigen der vorhergehenden Ansprüche 1 bis 2, wobei die beiden in Anspruch 2 beschriebenen Teilrahmen (2, 3) mittels eines mindestens teilweise komplementären Montagemittels ineinander passen.

4. Rahmen nach einem beliebigen der vorhergehenden Ansprüche 1 bis 3, wobei die Montagemittel aus einem weiblichen Teil, vorzugsweise einer Ausnehmung (12) in dem Teilrahmen (2) mit fester Breite, und einem männlichen Teil, vorzugsweise einer langen Lippe (8) mit Abbrechabschnitten (5) an dem Teilrahmen (3) mit einstellbarer Breite, bestehen.

5. Rahmen nach einem beliebigen der vorhergehenden Ansprüche 1 bis 4, wobei das Montagemittel aus einer Anzahl von ineinander greifenden Hakenelementen (6) besteht.

6. Rahmen nach einem beliebigen der vorhergehenden Ansprüche 1 bis 5, wobei ein Rahmen aus MDF, einer anderen Art von Faserplatte, einer Art von Holz, Aluminium oder einem Kunststoff besteht.

7. Tür, umfassend einen Rahmen nach einem beliebigen der vorhergehenden Ansprüche 1 bis 6, der aus zwei aufrechten Rahmen und einem Querrahmen besteht.

8. Fenster, umfassend einen Rahmen nach einem beliebigen der Ansprüche 1 bis 6, der aus zwei aufrechten Rahmen und zwei Querrahmen besteht.

Revendications

1. Cadre ou boîtier comprenant un certain nombre de

cadres verticaux (1, 4) et au moins un cadre transversal (2, 3), adaptés pour être montés dans un évidement de paroi, **caractérisé en ce que** la largeur des cadres peut être réglée par des zones de rupture (5) dans le sens longitudinal.

2. Cadre selon la revendication 1, dans lequel un cadre comprend deux cadres partiels (2, 3) s'emboîtant l'un dans l'autre, parmi lesquels un premier cadre partiel (2) possède une largeur fixe et un deuxième cadre partiel (3) possède une largeur réglable.

3. Cadre selon l'une quelconque des revendications précédentes 1 à 2, dans lequel les deux cadres partiels (2, 3) décrits dans la revendication 2 s'emboîtent l'un dans l'autre à l'aide de moyens d'emboîtement au moins partiellement complémentaires.

4. Cadre selon l'une quelconque des revendications précédentes 1 à 3, dans lequel les moyens d'emboîtement consistent en une pièce femelle, de préférence un évidement (12) dans le cadre partiel (2) de largeur fixe, et une pièce mâle, de préférence une longue lèvre (8) avec des zones de rupture (5) sur le cadre partiel (3) de largeur réglable.

5. Cadre selon l'une quelconque des revendications précédentes 1 à 4, dans lequel les moyens d'emboîtement consistent en un certain nombre d'éléments de crochet (6) inter-verrouillés.

6. Cadre selon l'une quelconque des revendications précédentes 1 à 5, dans lequel un cadre est constitué d'un panneau de fibres à densité moyenne (MDF) ou d'un autre type de panneau à fibres, d'un type de bois, d'aluminium ou de plastique.

7. Porte comprenant un cadre selon l'une quelconque des revendications précédentes 1 à 6, consistant en deux cadres verticaux et en un cadre transversal.

8. Fenêtre comprenant un cadre selon l'une quelconque des revendications 1 à 6, consistant en deux cadres verticaux et deux cadres transversaux.

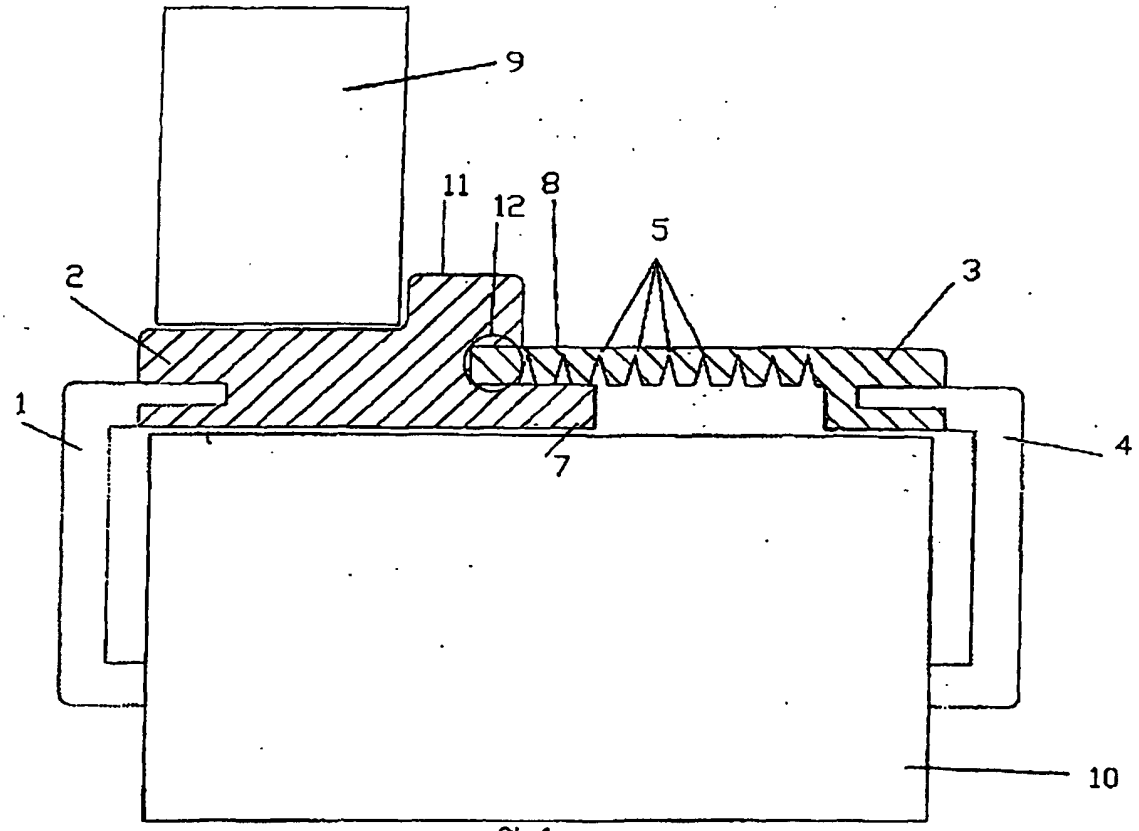


fig1

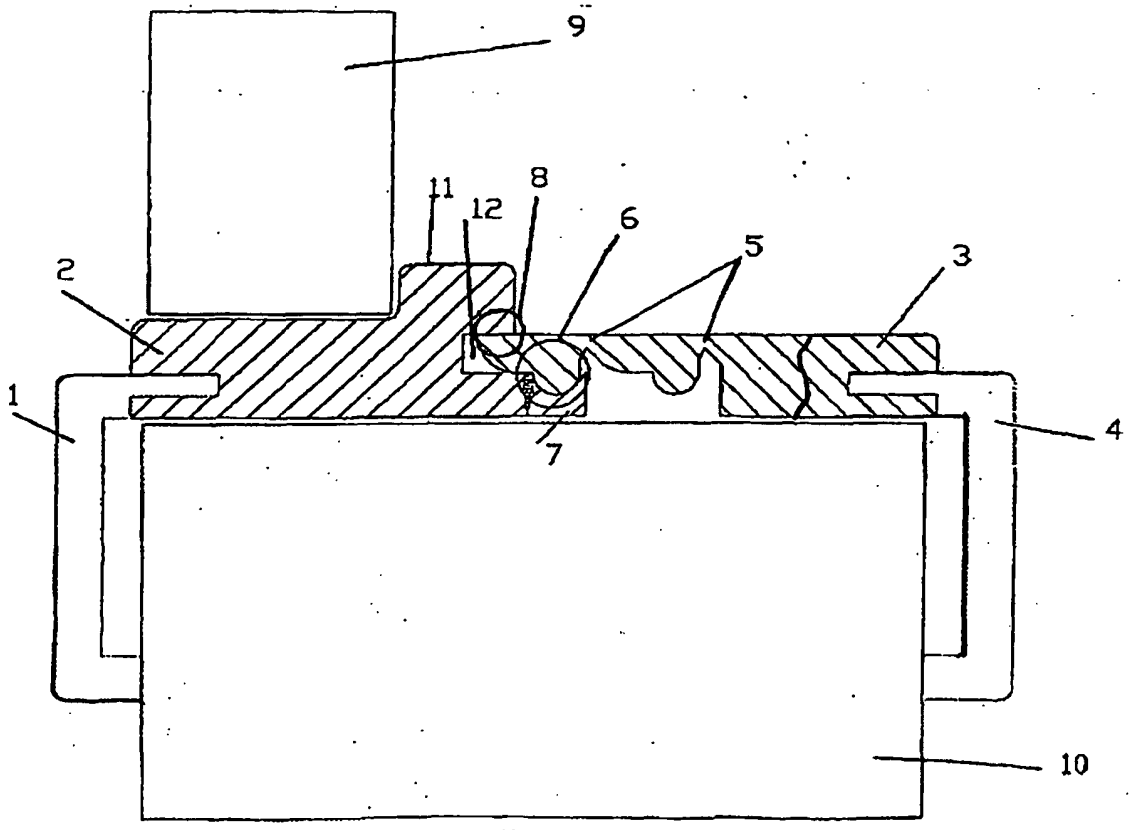


fig2

REFERENCES CITED IN THE DESCRIPTION

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