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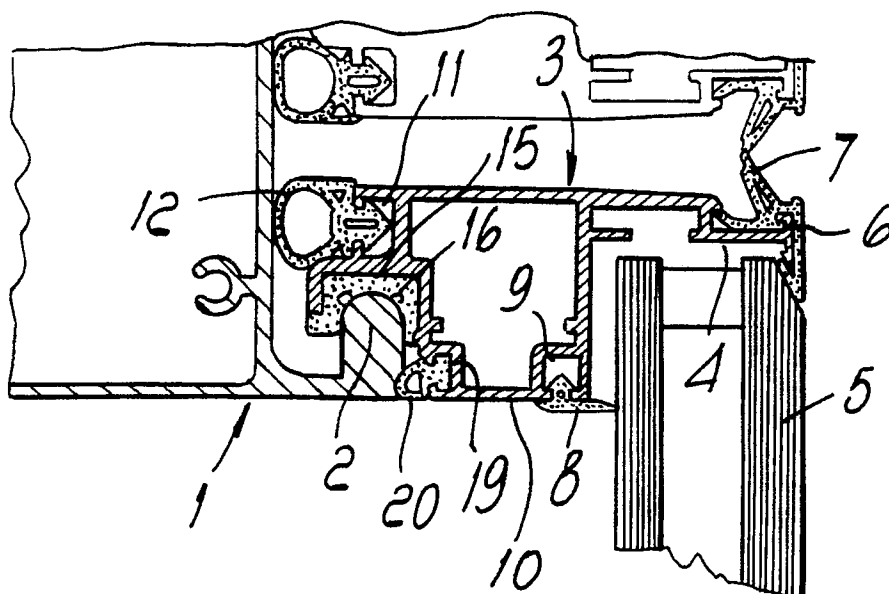
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(54) **Articulation structure between shutters and supporting frames, particularly in facades of buildings and the like.**

(57) The present invention relates to an articulation structure between shutters and supporting frames particularly in facades of buildings and the like which is composed of a transverse profiled element (1) which is rigidly associated with the fixed structure

and has a curved protrusion (2) which can be engaged by an open seat (15) defined by a profiled frame element (3) which supports a plate-like element (5).



*Fig. 1*

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## ARTICULATION STRUCTURE BETWEEN SHUTTERS AND SUPPORTING FRAMES, PARTICULARLY IN FACADES OF BUILDINGS AND THE LIKE

The present invention relates to an articulation structure between shutters and supporting frames particularly in facades of buildings and the like.

As is known, in the execution of frames for glazed shutters in modern constructions of building facades, it is currently necessary to provide frames having different structures depending on whether said frame must be openable or not when installed.

Shutters which are intended to open normally have discrete-point hinges which are mounted upon installation. When installed, the modification of said frames entails complicated operations of disassembly and reassembly of said shutters and therefore entails high costs for modifications to the structure of said frames.

Finally, the execution of particular frames for every type of opening entails the use of non-standardized carpentry, and therefore requires the use of different types of metallic carpentry, thus increasing stock tie-up for the builders of said facades.

The aim of the present invention is to eliminate the disadvantages described above in known types of shutter frames by providing an articulation structure between shutters and supporting frames particularly in facades of buildings and the like according to the invention which can be adapted to any type and direction of opening.

Within the scope of the above described aim, an object of the present invention is to provide an articulation structure between shutters and supporting frames which can be easily maintained and reversed from one type of opening to another even after installation.

A further object of the present invention is to provide an articulation structure between shutters and supporting frames which uses standardized carpentry and therefore reduces storing and availability costs.

Not least object of the present invention is to provide an articulation structure between shutters and supporting frames particularly in facades of buildings and the like which is relatively easy to manufacture at competitive costs.

This aim, these objects and others are achieved by an articulation structure between shutters and supporting frames particularly in facades of buildings and the like, which is characterized in that it comprises a transverse profiled element which is rigidly associated with the fixed structure and has a curved protrusion which can be engaged by an open seat defined by a profiled frame element which supports a plate-like element.

Further characteristics and advantages of the

invention will become apparent from the description of a preferred but not exclusive embodiment of an articulation structure between shutters and supporting frames according to the invention, illustrated only by way of non-limitative example in the accompanying drawings, wherein:

figure 1 is a sectional view of an articulation structure between shutters and supporting frames according to the invention, in closed position; and

figure 2 is a sectional view of an articulation structure between shutters and supporting frames according to the invention, in open position.

With reference to the above figures, an articulation structure between shutters and supporting frames according to the invention is composed of a transverse profiled element 1 which is rigidly associated with the fixed structure and defines a curved protrusion 2. A profiled shutter frame element 3 can engage the transverse profiled element 1 and has a recess 4 suitable for receiving a plate made of glass or the like 5. A first groove 6 is provided on the profiled element 3 and is suitable for receiving a first sealing element 7. A covering strip 8 is anchored in a second groove 9 defined in a wall 10 of said profiled element 3 and abuts against said plate 5. A third groove 11 is defined on the face directed toward the transverse profiled element 1, and a third gasket 12 which acts on said profiled element 1 is accommodated therein.

The profiled element 3 defines, on the face directed toward the profiled element 1, a fourth open seat 15 in which a fourth gasket 16 or wedge is accommodated; said gasket couples to the curved protrusion 2 and acts as an anti-friction element. The coupling between the open seat 15 and the curved protrusion 2 constitutes a continuous pivoting hinging element.

A fifth groove 19 is furthermore provided, and a fifth gasket 20, which abuts against said curved protrusion, is anchored therein.

The operation of an articulation structure between shutters and supporting frames according to the invention is as follows: when closed, in the configuration illustrated in figure 1, the restraint imposed by the engagement of the seat 15 on the curved protrusion 2 is a suspension. In the open position, which is actuated either manually or by means of a motor (not illustrated), the axis of rotation of the shutter with respect to the frame is identified by said curved prominence 2, on which said open seat 15 rotates. In this manner the profiled element 3 has a variable angle with respect to

the profiled element 1.

The gaskets, identified in the figures by the numerals 7, 8, 12 and 20, also perform a sealing function with respect to infiltrations of dust, air or water from the outside and with respect to the exit of air from the inside.

The profiled elements 1 and 3 as described above therefore allow to modify at any time the functionality of a shutter, whether it is an always closed one or an openable one, and to change its direction of opening.

The invention thus conceived is susceptible to numerous modifications and variations, all of which are within the scope of the inventive concept. All the details may furthermore be replaced with other technically equivalent elements.

In practice, the materials employed, as well as the dimensions, may be any according to the requirements.

Where technical features mentioned in any claim are followed by reference signs, those reference signs have been included for the sole purpose of increasing the intelligibility of the claims and accordingly such reference signs do not have any limiting effect on the scope of each element identified by way of example by such reference signs.

## Claims

1. Articulation structure between shutters and supporting frames particularly in facades of buildings and the like, which is characterized in that it comprises a transverse profiled element (1) which is rigidly associated with the fixed structure and has a curved protrusion (2) which can be engaged by an open seat (15) defined by a profiled shutter frame element (3) which supports a plate-like element (5).
2. Articulation structure according to claim 1, characterized in that a gasket (16) suitable for reducing contact friction is arranged between said open seat (15) and said curved protrusion (2).
3. Articulation structure according to claim 1, characterized in that a third groove (11) suitable for anchoring a third sealing gasket (12) is defined in said profiled shutter frame element (3) on the same side as said open seat (15).
4. Articulation structure according to one or more of the preceding claims, characterized in that said third gasket (12) abuts against said fixed structure.
5. Articulation structure according to one or more of the preceding claims, characterized in that a fifth groove (19) in which a fifth gasket (20) anchors is defined in said profiled shutter frame element (3) on the same side as said open seat (15) and on the opposite side with respect to said third groove (11).
6. Articulation structure according to one or more

of the preceding claims, characterized in that said fifth gasket (20) abuts against a base part of said curved protrusion (2) and is suitable for acting as shock absorber for said shutter.

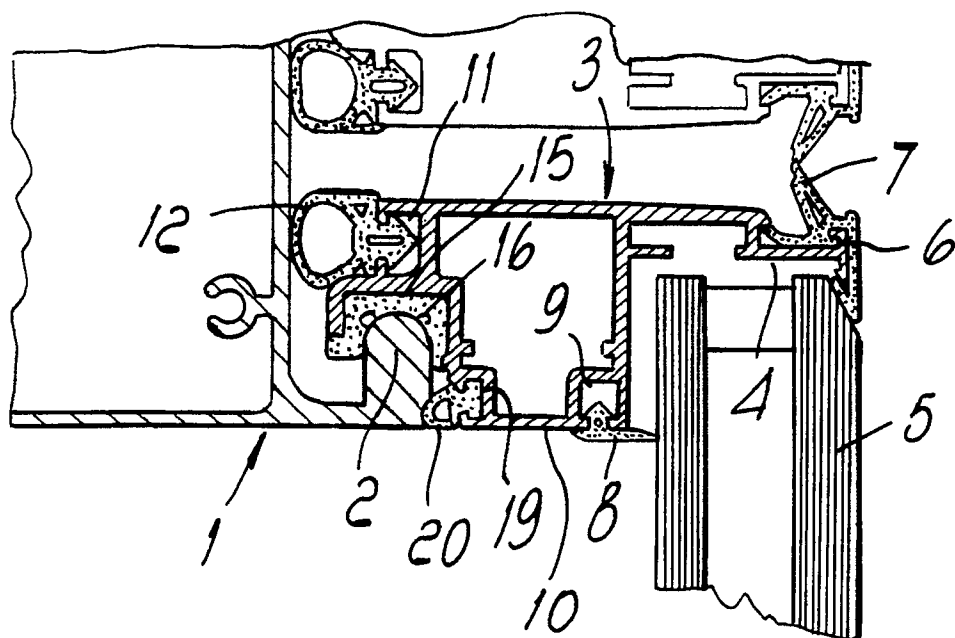


Fig. 1

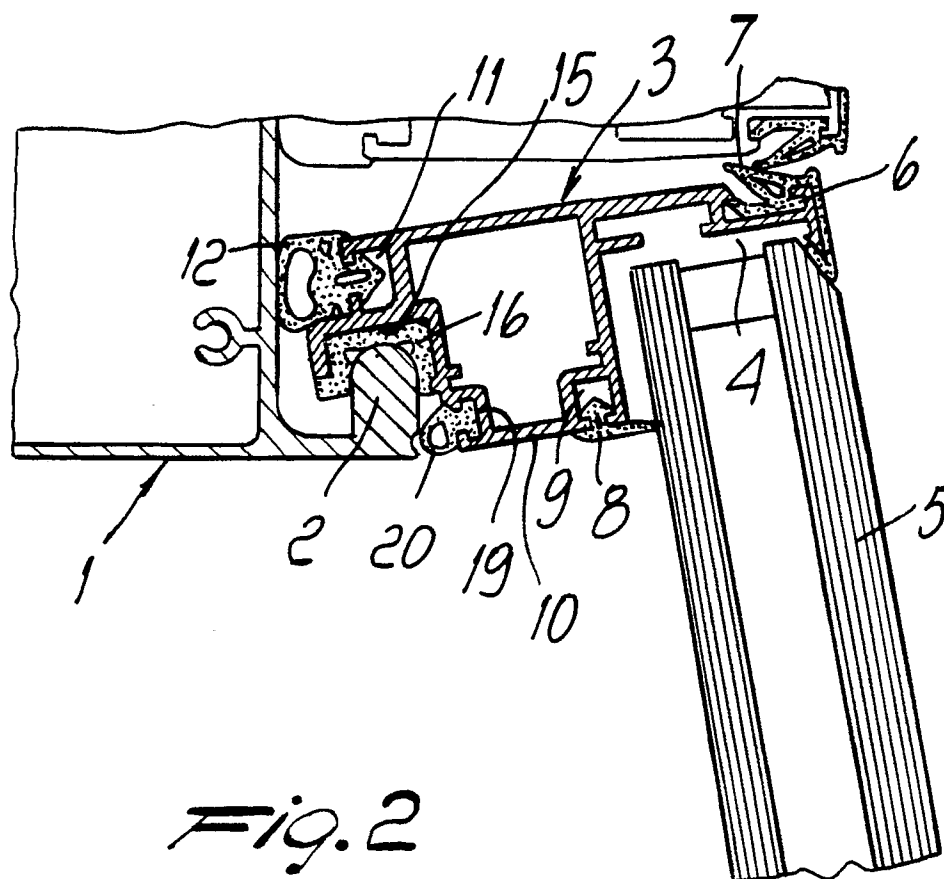


Fig. 2