

(19)



Europäisches Patentamt  
European Patent Office  
Office européen des brevets



(11) Publication number:

**0 671 538 A1**

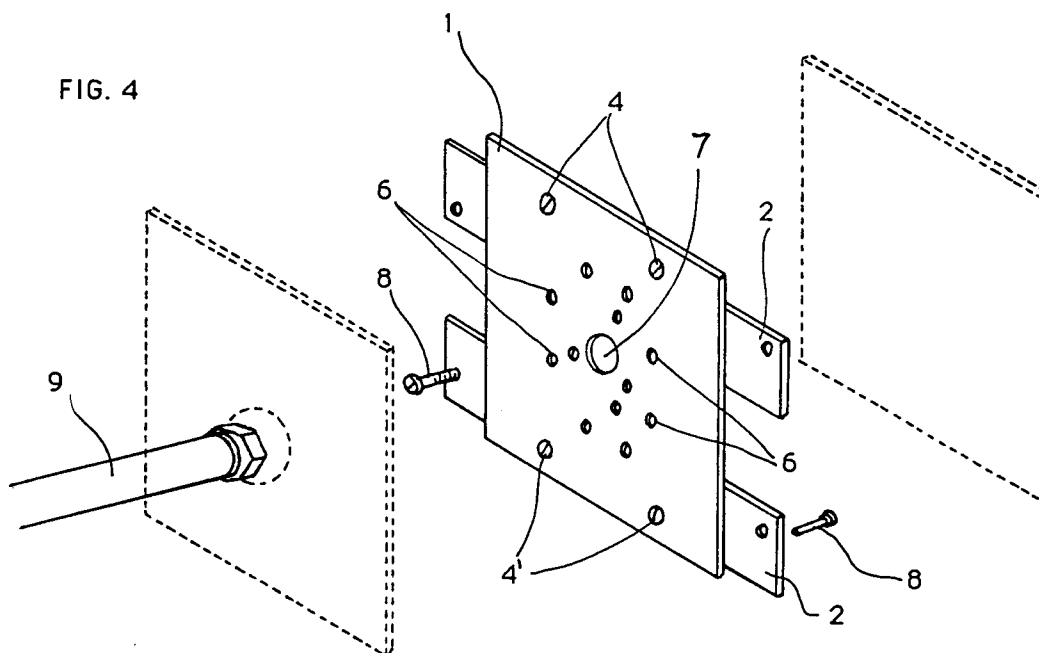
(12)

**EUROPEAN PATENT APPLICATION**(21) Application number: **94119618.0**(51) Int. Cl.<sup>6</sup>: **E06B 9/174**, E06B 9/17(22) Date of filing: **12.12.94**(30) Priority: **07.03.94 IT MI940161**(43) Date of publication of application:  
**13.09.95 Bulletin 95/37**(84) Designated Contracting States:  
**AT BE CH DE DK ES FR GB GR IE LI LU NL PT**(71) Applicant: **I.M.B.A.C. S.p.a.**  
**Via delle Industrie**  
**I-20050 Mezzago (Mi) (IT)**(72) Inventor: **Cattaneo, Rino**  
**via delle Industrie**  
**I-20050 Mezzago (Milan) (IT)**(74) Representative: **Lecce, Giovanni**  
**UFFICIO BREVETTI CALCIATI S.r.l.**  
**via G. Negri, 10**  
**I-20123 Milano (IT)**(54) **Universal attachment means for motors and compensation spring for rolling shutters and the like.**

(57) Universal attachment means for motors and compensation springs for rolling shutters and the like and comprising brackets (2) and plates (1) having pluralities of holes (4), (5), (6) appropriately positioned, distributed, spaced and aligned in such a

manner as to allow any mutual positioning between the plates and bracket and any arrangement and position of the fastening means of motor units and/or compensation springs having any configuration.

FIG. 4

**EP 0 671 538 A1**

The present invention relates to universal attachment means for motors and compensation springs for rolling shutters and the like.

Specifically the present invention relates to universal attachment means for motors and compensation springs for rolling shutters and the like comprising side brackets and plates, coupled and constrained mutually.

As known, to apply power units and compensation springs within the boxes for window and door frames in general there are used at present special fixed brackets on which are engaged vertical side plates.

Said means are positioned, prearranged, prepared and constrained for each application on the basis of the dimensions of the motors and selected compensation springs.

It is clear that as the types of motors and compensation springs in trade suitable for the purpose are different the constraining and supporting brackets and plates to be applied to the boxes must be positioned and dimensioned differently for each application on the basis of the type of motor and/or compensation spring employed.

This involves considerable organisational and production inconveniences as regards the necessary preparation of all the bracket and plate types corresponding to the motors and springs presently in trade and their necessary packaging, storage and distribution on the basis of the specific exigencies and requirements.

The purpose of the present invention is to eliminate the above mentioned inconveniences. Specifically the purpose of the present invention is to provide universal attachment means which can be employed for applying any type of motor and/or compensation spring.

In accordance with the present invention this and other purposes are achieved by employing universal attachment means for motors and compensation springs comprising brackets and plates provided with a plurality of holes positioned, distributed, spaced and mutually alignable in such a manner as to allow pluralities of different couplings and joining with constraint means such as screws, bolts and the like.

Each of said couplings is proportioned to achieve the desired position and quick and functional fastening of motor units and/or compensation springs having configurations different but equally useable for the same applications.

The brackets are provided with pluralities of holes whose locations correspond to different possibilities of positioning and constraint for the vertical supporting plates for rolling shutter drums and for the associated power sources. The plates in turn have a plurality of holes whose locations correspond to different possibilities of positioning and

constraint for different models of motor units and/or compensation springs. The plates and brackets are coupled together with alignment of the corresponding holes and are rigidly constrained in the desired position with fastening means such as screws, bolts, pins or the like.

The advantages achieved by the present invention consist essentially of the fact that with a single type of bracket and a single type of plate there can be prepared within rolling shutter boxes side supports with different hole positions corresponding to and alignable with constraint means for different models of motor units and/or compensation springs.

Basically with a single type of bracket and a single type of plate there can be provided all the possible couplings for rolling shutter drums with any type of motor and/or compensation spring.

Said bracket and plate are virtually of the so-called "universal" type. Their standardised preparation allows considerable construction, storage and application economies.

To better understand the characteristics of the universal attachment means for motors and/or compensation springs of the present invention they are described below with reference to the figures in the annexed drawings representing an embodiment given only by way of nonlimiting example wherein:

FIG. 1 shows a front view of a universal plate,  
FIG. 2 shows a front view of a universal bracket,  
FIG. 3 shows a front view of combinations of the plate of FIG. 1 with brackets as shown in FIG. 2, and  
FIG. 4 shows a diagrammatic perspective view of a plate with associated brackets in the assembly of the control means of a rolling shutter drum.

With reference to the figures the means of attachment for motors and compensation springs for rolling shutters or the like of the present invention comprise a plate (1) and brackets (2).

The plate (1) preferably quadrangular in form is provided with a first series of upper holes (4) and lower holes (4') whose distances between centres are equal and correspond to the distances between centres of two parallel rows of holes (5,5') of which the brackets (2) are provided. Each row of holes (5,5') of the bracket (2) has a virtually curved or inclined course.

Said brackets (2) can be coupled and constrained to the plate (1) in accordance with different positions, higher or lower, more to the right or more to the left, depending on the pair of holes (5,5') selected for preparation with the upper holes (4) or lower holes (4').

Basically, with the upper holes (4) of the plate (1) can be coupled and engaged a bracket (2), straight or overturned, by means of any of its pairs

of holes (5,5'). In like manner, with the lower holes (4') of the same plate (1) can be coupled and engaged a second bracket (2), straight or overturned, by means of any of its pairs of holes (5,5'). The result is that the brackets (2) in relation to the engagement with the plate (1) can be aligned or misaligned, straight or overturned or opposed, in an intermediate position and so forth, with as many possibilities as there are possible combinations of couplings of the pairs of holes (5,5') of two brackets (2) with the pairs of holes (4,4') of the plate (1).

The constraint of the brackets (2) with the plate (1) in alignment of the holes (4,4') and (5,5') can be provided by means of screws or bolts (8), pins or other analogous fastening means.

The plate (1) is also provided with a second series of holes (6) arranged in accordance with symmetrical configurations in relation to the central hole (7) for connection of the rolling shutter drums (9) to the respective motors.

The holes (6) are provided in accordance with geometry corresponding to that of the anchoring points of motors and compensating springs, usually useable in such applications and normally available in trade.

Depending on the model of motor and/or compensation spring there can be used certain holes (6) rather than others through which are engage the screws or bolts (8) or equivalent.

The combination of possible couplings of constraint points for motors and/or compensating springs for different models and/or types with the holes (6) of the plate (1) and the above combinations of the pairs of holes (5,5') of two brackets (2) with the pairs of holes (4 and 4') of the plate (1) allow preparation of any configuration of powered rolling shutters rollers in a simple, fast, economical and functional manner.

While the present invention has been described with reference to an embodiment illustrated in the figures it will be clear to those skilled in the art that various changes to the form of the components, the distribution and position of the plurality of the holes, the number thereof and the combinations can be made without thereby exceeding its scope and purpose.

## Claims

1. Universal attachment means for motors and compensation springs for rolling shutters and the like and comprising a bracket (2) and a plate (1) combined and constrained by means of screws or bolts or the like (8) and in which said brackets (2) and plates (1) are provided with a plurality of holes (4,4',5,5',6) for coupling of the bracket (2) to the plate (1) in accordance with any mutual positioning and for anchoring

of any power unit and/or compensation spring to the plate (1).

2. Universal means in accordance with claim 1 in which the bracket (2) is provided with two parallel rows of holes (5,5') with each row having a curved or inclined trend.
3. Universal means in accordance with claim 1 or 2 in which the plate (1) is provided with a central hole (7), a first series of upper holes (4) and lower holes (4') having equal distance between centres and corresponding to the distances between centres of the two rows of holes (5,5') and a second series of holes (6) arranged in accordance with configurations symmetrical in relation to the central hole (7).
4. Universal means in accordance with any one of the above claims and in which the bracket (2) in relation to the plate (1) assumes without distinction centred or off-centre, aligned or unaligned, spaced or close, symmetrical or asymmetrical, straight or overturned or mixed positions.
5. Universal means in accordance with any one of the above claims and in which the plates (1) with associated brackets (2) assume arrangements and mutual constraints suitable for support and constraint of any type or model of motor and/or compensation springs.
6. Universal means in accordance with any one of the above claims and in which the bracket (2) and the plate (1) can be mutually coupled and constrained for support and constraint of motors and compensation springs of any type in accordance with combinations which are the function of possible couplings of the pairs of holes (5), (5') of the brackets (2) with the pairs of holes (4), (4') of the plate (1) and the holes (6) of said plate with the means of attachment of said motors and/or compensation springs.
7. Universal means in accordance with any one of the above claims and in which the constrain of the brackets (2) to the plate (1) is achieved by means of screws, bolts or pins (8).

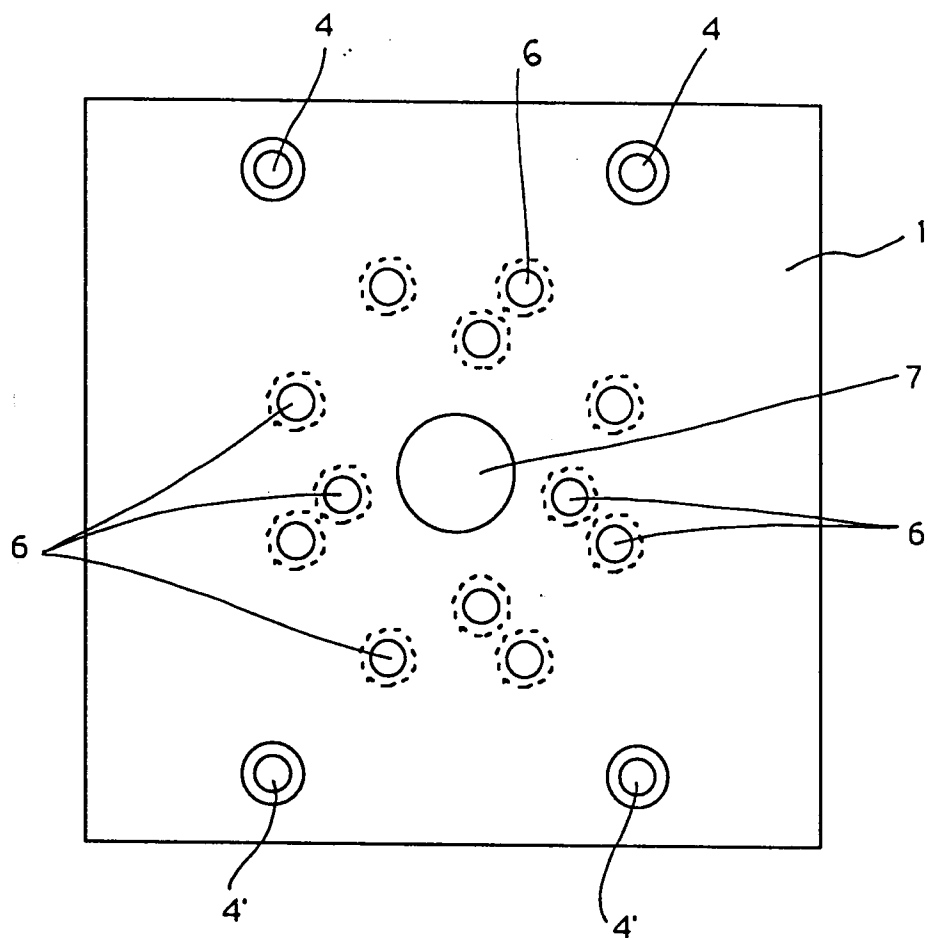


FIG. 1

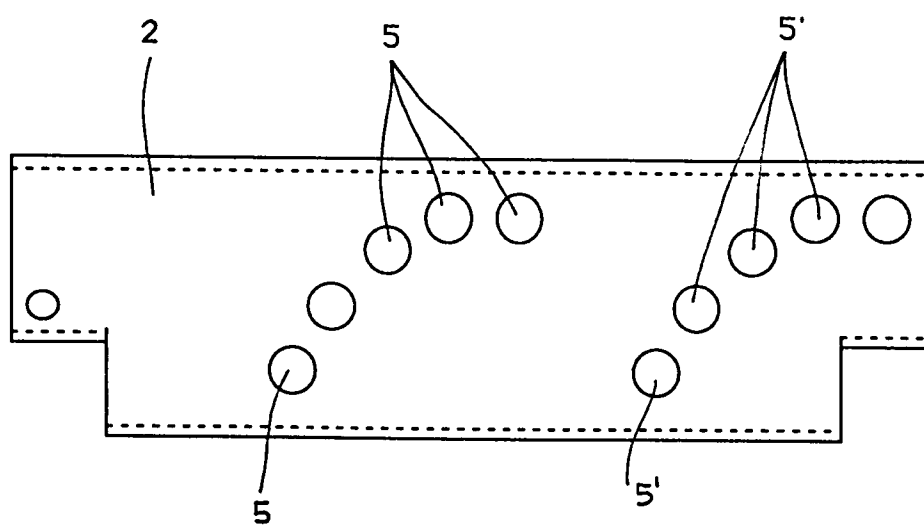


FIG. 2

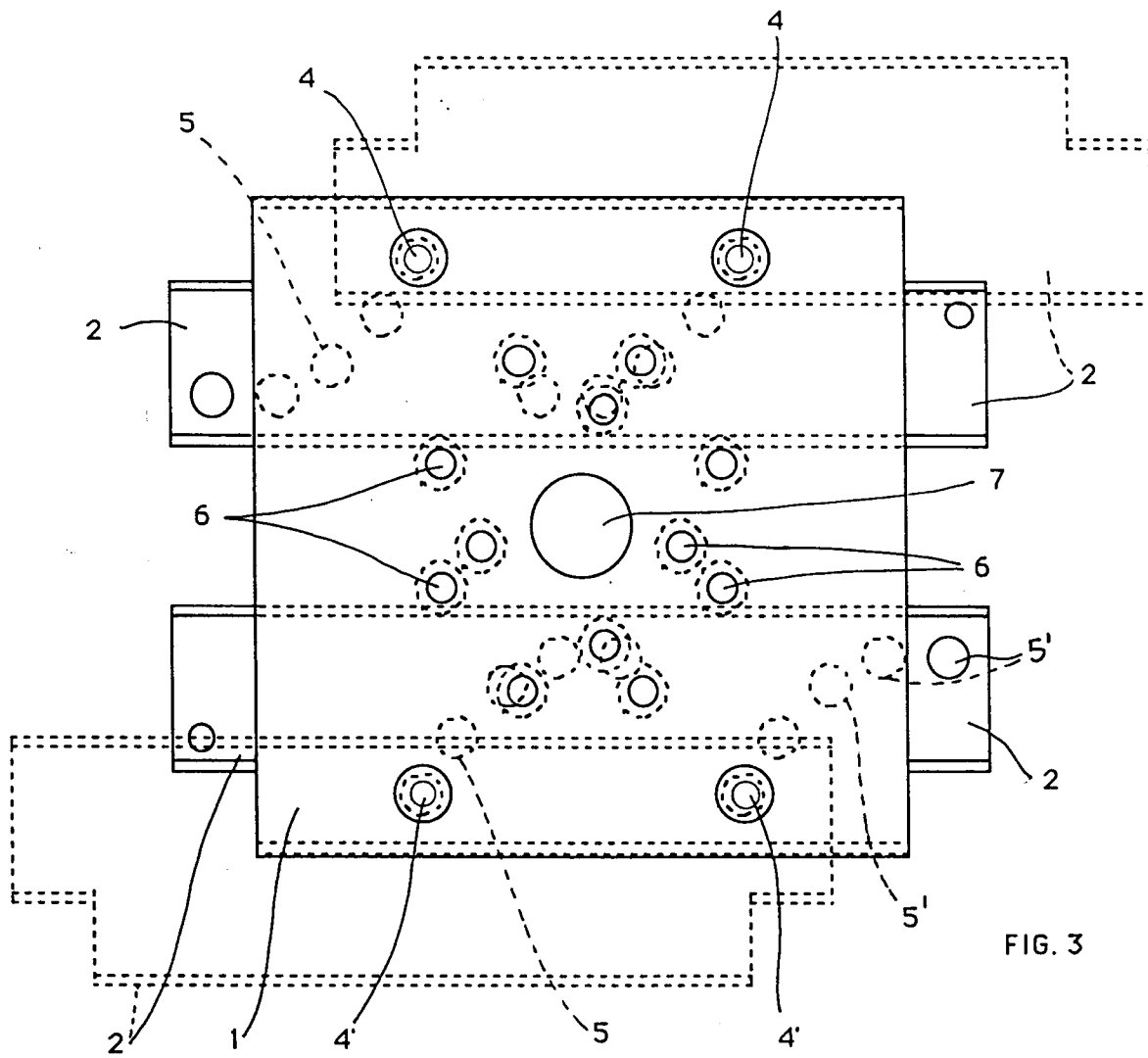


FIG. 3

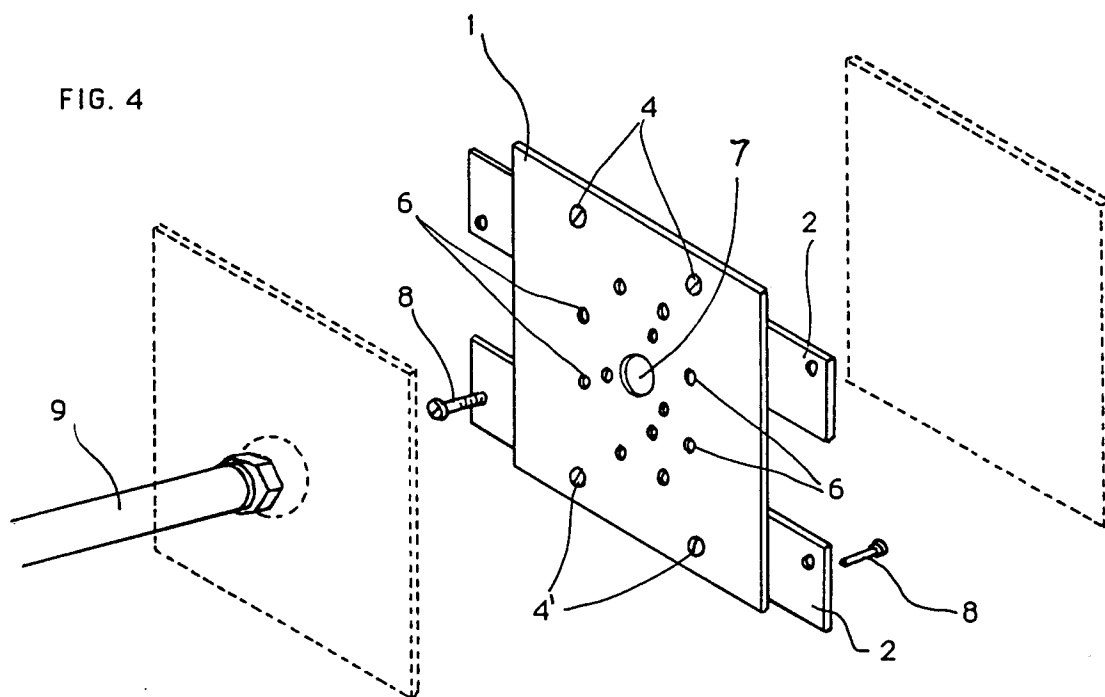


FIG. 4



European Patent  
Office

## EUROPEAN SEARCH REPORT

Application Number  
EP 94 11 9618

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
A	FR-A-697 241 (DEGLESNE) * page 2, line 27 - page 3, line 5 * ---	1	E06B9/174 E06B9/17
A	DE-U-93 02 394 (ALULUX BECKHOFF) * page 4, line 14 - line 38; figure 1 * -----	1	
			TECHNICAL FIELDS SEARCHED (Int.Cl.6)
			E06B
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 21 June 1995	Examiner Peschel, G
<b>CATEGORY OF CITED DOCUMENTS</b> 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			