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71 Applicant: **I.M.B.A.C. S.p.a.**  
**Via delle Industrie**  
**I-20050 Mezzago (Mi) (IT)**

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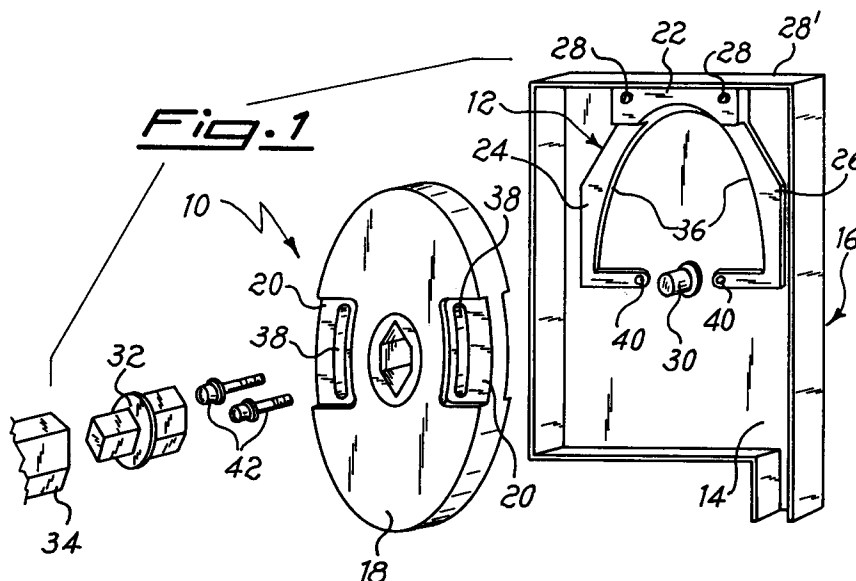
72 Inventor: **Cattaneo, Rino**  
**via Parada, 24**  
**I-20057 Vedano al Lambro (IT)**

74 Representative: **Lecce, Giovanni**  
**UFFICIO BREVETTI CALCIATI S.r.l.**  
**via G. Negri,10**  
**I-20123 Milano (IT)**

54 **Improved roller shutter handling member support.**

57 With the internal wall (14) of a roller shutter box side is integral a shaped plate (12) whose internal profile (36) defines a seat for at least partial reception of a winch (18) provided with a diametrically opposed lowered portion (20) along which are butted the bent ends of the branches (24,26) of the plate (12) directed toward the central pivot (30) projecting

from the wall (14) and the bent ends are provided with a bore (40) and have a thickness not greater than the depth of the lowered portions (20) of the winch (18). Said portions delimit entirely the recesses (38) formed on the winch (18) in which are arranged generic screws (42) which engage in the holes (40) to constrain the winch to the plate (12).



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The present invention relates to an improved roller shutter handling member support.

More specifically the present invention relates to an improved support integrated in a side of the box in which is arranged the roller shutter to which is constrained a handling winch for the roller shutter.

As known a widespread type of closing device for windows and door windows consists of a roller shutter made up of a plurality of small wood or metal slats connected together. The roller shutter unwinds from a roller arranged in a box to which are connected the handling members which permit moving the shutter. Said handling is achieved by different alternative systems consisting for example of a belt connected to a pulley through a powered unit or by a winch in which is engaged the end of a rod with jointed crank.

In accordance with the latter solution the winch is constrained to one of the elements or sides which make up the heads of the box in relation to which it must have precise overall dimensions. In particular, the winch must not project beyond the internal edge of the box side and must have a thickness conventionally within the standard dimension of 24mm.

From this dimensional requirement proceed some problems connected with constraint of the winch to the box side. Said box is sometimes fitted on the inside face with a plate of suitable thickness forming the base for connection of the winch. The plate is provided with two or more threaded holes for as many screws emerging from the handling member and is made integral with the internal wall of the box side by different systems.

One solution provides in this respect that the plate be connected to the side by means of rivets, screws or similar members which are engaged from the exposed face of the side.

Said system involves aesthetic and functional shortcomings. The rivets or screws which remain visible on the exposed face of the box side alter the appearance of the equipment in a significant manner. The projection of said means of retention, although limited, can also create problems during installation of the box where said box must be inserted in an opening already formed with precise measurements.

The same shortcoming appears also in the case where, in accordance with another known embodiment, the screws or rivets engage directly in the winch without the interposition of a plate arranged against the internal wall of the box side.

Another known solution, for constraint of the supporting plate to the internal face of the box side, calls for prior installation of a plurality of appendices with threaded hole and projecting from said internal face of the side. Said appendices are

achieved in a single piece with the above mentioned side during forming thereof and are located in various manners along the surface in a considerable number, variously spaced apart, to make possible the alternative positioning and fastening of winches having different dimensions.

But even in this solution there are encountered serious shortcomings connected with the fact that the projecting appendices which are distributed on a large part of the internal face of the side prevent the winch from lying along the surface of said side. Although it is possible to exclude an intermediate supporting plate, the appendices constitute spacing elements between the internal wall of the side and the winch. Consequently, the winch, to observe the above mentioned restrictive dimension, must be considerably reduced in thickness. This design causes as may be imagined a limitation on the overall efficiency of the winch.

The purpose of the present invention is to overcome the above shortcomings.

More specifically the purpose of the present invention is to provide an improved support for roller shutter handling members which would allow accurate, fast and steady housing of the members and in particular standardised winches along the internal wall of one of the box sides.

Another purpose of the present invention is to provide an improved support as defined above which would not require drilling of the front wall of the box side with resulting engagement from the outside in the holes created by winch retention means.

Another purpose of the present invention is to make available to users an improved support capable of providing a high degree of strength and reliability in time such as to also be easily and economically produced.

These and other purposes are achieved by the improved support for roller shutter handling members which is the object of the present invention and is characterised in that it displays integral with the internal wall of at least one side of a roller shutter box a plate or shaped flange defining a seat for partial or total reception of a winch or the like provided with diametrically opposite lowered portions on one or both faces.

To clarify the explanation of the innovative principles of the present invention and its advantages compared with the known art there is described below with the aid of the annexed drawings a possible embodiment thereof by way of nonlimiting example applying said principles. In the drawings -

FIG. 1 shows a schematic exploded view of the improved support which is the object of the present invention and the associated winch,

FIG. 2 shows a schematic front view of the internal part of the box side to which is con-

strained the winch, and

FIG. 3 shows a schematic cross section of the box side along plane of cut III-III of FIG. 2.

With reference to FIG. 1 the improved support for roller shutter handling members which is the object of the present invention and designated as a whole by 10 consists of a plate or shaped flange 12 constrained to the internal wall 14 of the side 16 of a conventional roller shutter box (not shown) and a winch 18 which has in diametrically opposite positions two identical depressions 20 achieved on both faces.

The flange 12 is provided preferably although not critically of thermoplastic material and displays a peripheral external configuration tending to trapezoidal and limited thickness. In particular said external configuration of the flange 12 defines above a straight sector 22 having preferably reduced length in relation to the width of the internal wall 14 of the side 16 from which there extend downward opposing branches 24, 26 substantially in L shape. Along the straight sector 22 are achieved two or more bores in which are engaged under pressure corresponding cylindrical projections 28 integral with the internal wall 14 of the side 16 and achieved in a single piece therewith during forming. The above mentioned projections are provided near a sector of the peripheral edge 28' of the side 16 against which butts the straight sector 22 of the flange 12 when same is engaged through the above mentioned bores on the projections 26.

The branches 24, 26 extending downward from the upper sector 22 are opposed mutually toward the conventional pivot 30 which projects from the centre of the internal wall 14 of the side 16 to constitute the connection member for a known connector 32 which is connected to and supports the roller shutter shaft shown diagrammatically at 34. The flange 12 displays advantageously a semicircular internal profile 36 repeating partly the peripheral form of a winch 18. The outside diameter of the latter is slightly less than that of the seat defined by the internal profile 36 of the flange 12.

The winch 18 in accordance with another characteristic of the present invention is provided with diametrically opposed lowered portions 20 which are preferably achieved on both the opposite faces of the winch 18 opposite the conventional shaped through recesses 38. In relation to the front walls of the winch said portions are lowered by a limited amount substantially corresponding to the thickness of the bent back ends of the branches 24, 26 which oppose each other towards the pivot 30 and have a bore 40.

In accordance with a preferred but not critical embodiment the thickness of the above mentioned branches is between 4 and 7 mm and is less than that of the upper sector 22 of the flange 12 from

which the branches extend.

The lowered portions 20 display preferably an upward extension above that of the through recesses 38 which are completely delimited by them.

On the winch 18 in a central position is formed the usual hexagonal seat for reception of the connector 32 of known type which from one side engages in the pivot 30 of the side 16 and on the other side connects with the head of the shutter roller 34. In the through recesses 38 are arranged generic screws 42 which, projecting from the rear face of the winch 18, screw into the bores 40 formed on the bent back portions of the branches 24, 26 of the flange 12.

Assembling the entire improved support which is the object of the present invention involves simple and rapid operations starting with positioning of the flange 12 on the internal wall 14 of the side 16. The projections 28 formed on said side are engaged in the holes created along the upper sector 22 of the flange. Subsequently the winch 18 is arranged in the semicircular seat 36 defined by the internal profile of the flange 12 and, through the screws 42 inserted in the recesses 38, is constrained to the bent back branches 24, 26 of the flange. Said ends butt opposite the lowered portions 20 created on the winch 18 while the remaining sector of the winch which is not lowered encounters the internal wall 14 of the side 16.

As may be seen from the above, the many advantages of the invention in accordance with the present invention are evident.

The improved support which is the object of the present invention allows coupling and constraining rapidly the handling members of the shutter to the box side while holding predominantly a total thickness of said member and in particular a winch equivalent to the depth of said side. There is simultaneously avoided the ill appearing use of retention means engaged from the outside in the side.

Given the presence of lowered portions on both faces, the winch can also be advantageously applied to the right side or left side of the box depending on different requirements.

The invention as described above and claimed below is proposed merely by way of example and it is understood that it can have numerous modifications and variations all falling within the inventive concept.

For example, the flange to which is constrained the winch can have a configuration and/or extension different from that described and illustrated by way of example. Said flange can also be provided with preimpressed and removable sectors along the internal and/or external profile to adapt it to sides or winches of different dimensions.

In the above description the handling member to which is made principal reference consists of a winch but it is intended that said construction plan could concern different handling members such as for example power units.

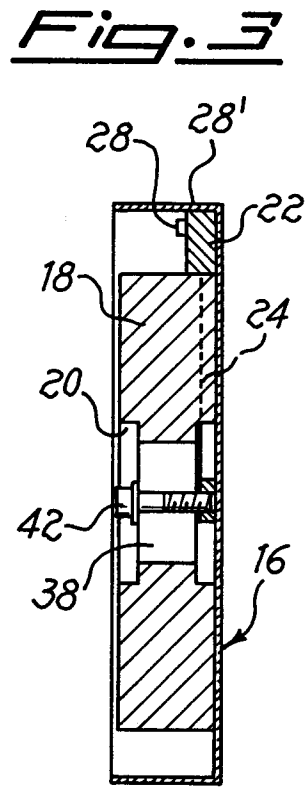
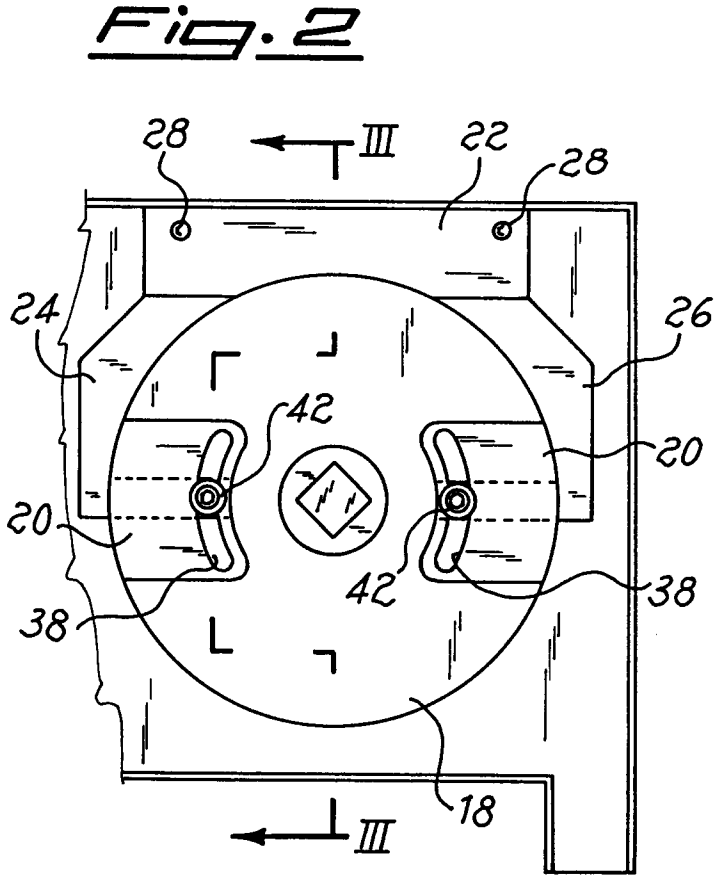
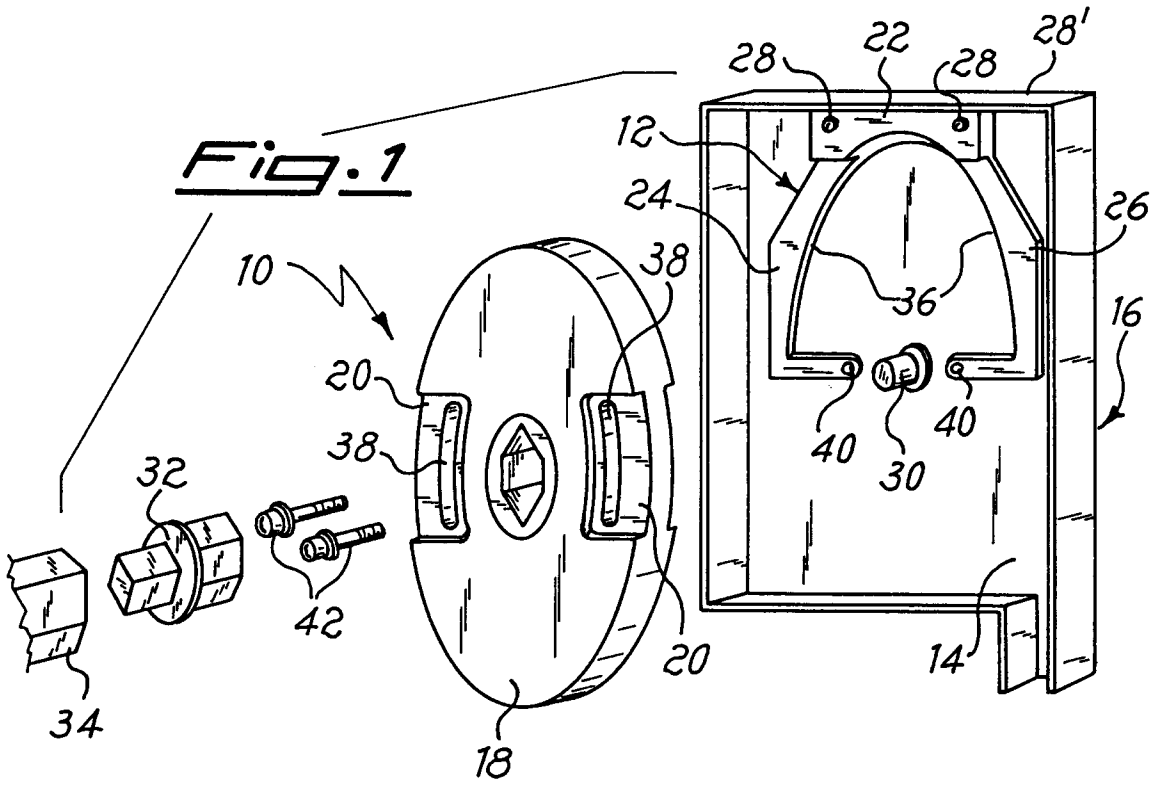
Lastly, it is intended that optional structural reversals or alternative locations of the components which altogether make up the improved support which is the object of the present invention are possible.

### Claims

1. Improved support (10) for roller shutter handling members characterised in that it displays integral with the internal wall (14) of at least one of the sides (16) of a roller shutter box a plate or shaped flange (12) which defines a seat for partial or total reception of a winch (18) or the like and is provided with diametrically opposed lowered portions (20) on one or both faces. 15
2. Improved support in accordance with claim 1 characterised in that the flange (12) comprises a straight sector (22) along which are achieved two or more bores on which engage corresponding projections formed on the internal wall (14) of the side (16) near a part of its peripheral edge (28') and said flange displays opposing extended branches (24,26) of the sector (22) with edges bent back towards the central pivot (30) projecting from the internal wall (14) of said side. 25  
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3. Improved support in accordance with the above claims characterised in that the thickness of the branches (24,26) with bent back ends is equal to or less than the depth of the lowered portions (20) formed in the winch (18) and said bent back ends are provided with bores (40). 35  
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4. Improved support in accordance with one or more of the above claims characterised in that the flange (12) displays a semicircular internal profile (36) having a diameter slightly greater than that of the winch (16). 45
5. Improved support in accordance with one or more of the above claims characterised in that the lowered portions (20) formed on the winch (18) delimit entirely the through recesses (38) achieved on the winch. 50  
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6. Improved support in accordance with one or more of the above claims characterised in that the straight sector (22) of the flange (12) dis-

plays a thickness greater than that of the branches (24,26) which extend from it.

7. Improved support in accordance with one or more of the above claims characterised in that the flange (12) is achieved in thermoplastic material and has preimpressed and removable sectors along the internal and/or external profile. 5
8. Improved roller shutter handling member support as described with particular concern for the reservation expressed in the last sentence of the descriptive part illustrated by way of example and for the specified purposes. 10  
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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	WO-A-88 06672 (AEROLUX) * page 8, paragraph 3 - page 9, paragraph 3; figures *	1	E06B9/174
A	DE-A-35 01 767 (HARDT ET AL) * page 11, line 25 - page 12, line 17; figures *	1	
A	NL-A-6 813 763 (WEBER GMBH & CO KG) * page 3, line 13 - page 4, line 8; figures *	1	
The present search report has been drawn up for all claims			TECHNICAL FIELDS SEARCHED (Int.Cl.6)
			E06B
Place of search		Date of completion of the search	Examiner
THE HAGUE		30 June 1994	Kukidis, S
CATEGORY OF CITED DOCUMENTS		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	
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			