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(11)

EP 1 262 628 A2

(12)

EUROPEAN PATENT APPLICATION

(43) Date of publication:

04.12.2002 Bulletin 2002/49

(51) Int Cl.7: **E06B 9/58, E06B 9/17**

(21) Application number: **02384002.8**

(22) Date of filing: **15.03.2002**

(84) Designated Contracting States:

**AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU
MC NL PT SE TR**

Designated Extension States:

AL LT LV MK RO SI

(71) Applicant: **Romero Sanchez, Juan Manuel**

08902 l'Hospitalet de Llobregat, Barcelona (ES)

(72) Inventors:

• **Llado Luid, Carlos**

08902 Barcelona (ES)

• **The other inventor has agreed to waive his
entitlement to designation.**

(30) Priority: **29.05.2001 ES 200101461 U**

(54) Reversible roller shutter

(57) A roller shutter that is slid by means of traction wheels (2) that guide the slats along tracks (7). These tracks, through which the slats run, are located in the wheel mechanisms (16) mounted on both the left- and right-hand ends of the shutter.

This traction or slide system allows the shutter to be moved in two ways, by using the handle (4) that

opens or closes a diverter (5). The first way enables it to move through slide track (7a) for ordinary use and the second way moves it through slide or usage track (7b) in order to clean the shutter.

This system allows both sides of the shutter to be cleaned easily, simply and safely from inside the building, without having to access the inside of the shutter casing or dismantle any of the components.

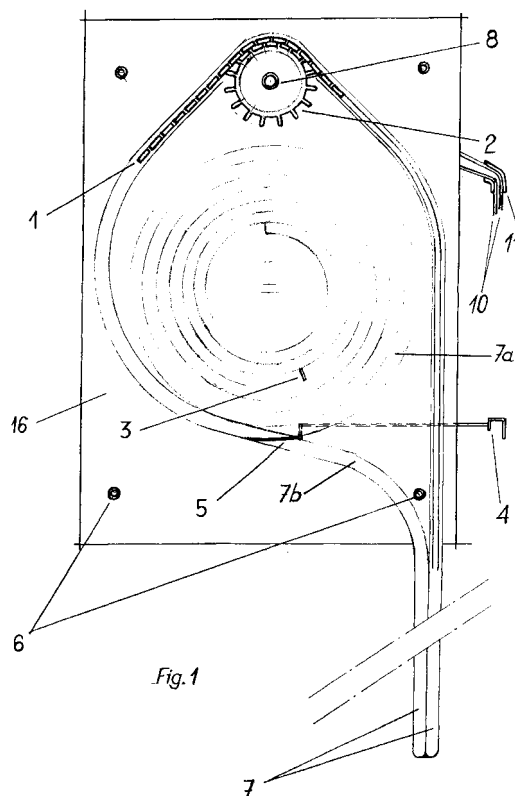


Fig. 1

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Description

OBJECT OF THE INVENTION

[0001] This invention, as described in the introduction to this report, is a new system for exterior slatted roller shutters, which in addition to performing the same function as any currently available roller shutter, has a rather significant added advantage in terms of cleaning, due to the great ease with which the outside face of the shutter can be cleaned.

[0002] This system uses a traction mechanism attached to the shutter itself, which allows the shutter to be moved in two different directions or ways. The first way is the normal use for which this type of shutter is designed: lowering the shutter to let in or keep out daylight. The second way is designed for maintenance purposes and allows the user to access the part of the shutter that usually faces outwards with the greatest of ease. This enables it to be cleaned extremely simply from inside the home. There is no need to take the shutter apart or climb ladders or use other means of access from the outside, which could be dangerous or difficult, and one person can easily carry out the cleaning without needing any additional help.

PRECEDENTS TO THE INVENTION

[0003] There are many known types of shutters, made from different materials and with different forms of operation, designed for different uses. However, they all have the same serious, inconvenient disadvantage in terms of cleaning and maintaining their appearance.

[0004] All known systems suffer from the same problem in terms of cleaning the outside of the shutters. This novel system makes it possible to access the exterior-facing side easily, conveniently and quickly, while at the same time, there is no risk to the person carrying out the cleaning.

[0005] This system does not prevent use of the same construction materials as are currently used for these kinds of slatted shutters (aluminium or PVC slats etc.), nor does it prevent any shutter housing from being installed, whether using construction materials, wood or aluminium, etc. Moreover, this system can be successfully used with all known methods of raising the shutter, whether manually by a strap, turning a handle, or using an electric motor.

[0006] There are currently shutters that are housed inside or outside of the building. This invention's system also allows the shutter to be housed in either position by simply inverting it.

[0007] We should also point out that unlike current systems, which need external rods to block the end of the track, this system allows the shutter to be fully raised into its housing with no danger, as the end of the track is located inside.

DESCRIPTION OF THE INVENTION

[0008] The invention's mechanism uses a novel traction system, which allows the shutter to be moved in two directions, running through tracks located in the housing to its left- and right-hand sides. Using a simple diversion or guidance system, it is possible to select the kind of use desired, either for normal use or in maintenance mode for cleaning.

[0009] Traction is applied to the shutter itself by means of two traction wheels that raise or lower the shutter by means of teeth that enter the holes on each end of the shutter's slats. The traction wheels are made to move by means of a strap, as shown in the diagram attached. The shutter must therefore always be in contact with the traction wheels for it to be moved in either direction at any time. Thus, calculating the length of the shutter and the position of the trackending mechanism are two determining factors for correct operation of the whole mechanism.

[0010] The holes at either end of the slats have truncated cone-shaped casing to help the traction wheel teeth enter them.

[0011] Two decisive aspects of this system are, on the one hand, the track diverters that enable the shutter to slide in normal use, in which it rolls up in its housing, or in maintenance mode, for cleaning, in which it initially enters its housing or box and is then lowered through the second track intended for this purpose.

[0012] Everything set out above is to enable the purpose of this invention, which is to access the side of the shutter that faces outside of the building in order to carry out cleaning extremely easily.

[0013] To complement the following description and aid understanding of this invention's features, a set of plans is attached to the description. These diagrams make it easier to understand the advantages and innovations of the mechanism or system object of this invention.

BRIEF DESCRIPTION OF THE DIAGRAMS

[0014]

Figure 1. Front view of one of the lateral mechanisms for raising and lowering the shutter, which clearly shows all the parts included in the system we have invented.

Figure 2. Elevated view of the set of parts that make up the invention's workings, which are located in the shutter housing area or box, with a cross-section of the areas where the traction wheels are located.

Figure 3. Elevated view of the shutter, which shows the anchoring holes for the traction wheel teeth.

Figure 4. View of the traction wheel teeth entering the holes in the shutter slats.

DESCRIPTION OF THE PREFERRED FORM OF OPERATION

[0015] The attached diagrams show how this shutter system is made up of two wheel mechanisms (16), located opposite each other and joined by bars (6), between which the shutter (1) moves through the tracks (7) (Figure 1).

[0016] By using the strap (10), after releasing it from the anchoring (14), the shutter (1) is raised or lowered by means of the traction wheels (2), which are joined by the traction axle (8) (Figure 2).

[0017] The traction strap (10), which appears and runs through the runner (11), turns the drive wheel (12), which by being attached to the traction axle (8) causes the traction wheels (2), to move the shutter (1) when its teeth enter the holes (15) in the latter. These holes have casing (9) to enable the teeth on the traction wheels (2) to penetrate the shutter holes (15) (Figure 4).

[0018] Prior to the foregoing, one may select either normal use or the maintenance or cleaning mode, by using the handle (4) to move the diverter (5). In the closed position, the diverter (5) guides the slats of the shutter (1) through the tracks for normal use (7a). By moving the handle (4) the diverter lifts up and the direction of the shutter (1) changes to track (7b), thus entering the cleaning or maintenance mode or system.

[0019] When one wishes to use the shutter in the normal mode, the strap (10) should be pulled in one direction or the other, depending on whether the shutter (1) is to be raised or lowered. The strap (10) will actually be more similar to a chain, as it will need links that can fit into the teeth of the drive wheel (12) so as to turn it in one direction or another, simultaneously driving the traction wheels (2) by means of the traction axle (8), thus making the shutter (1) move.

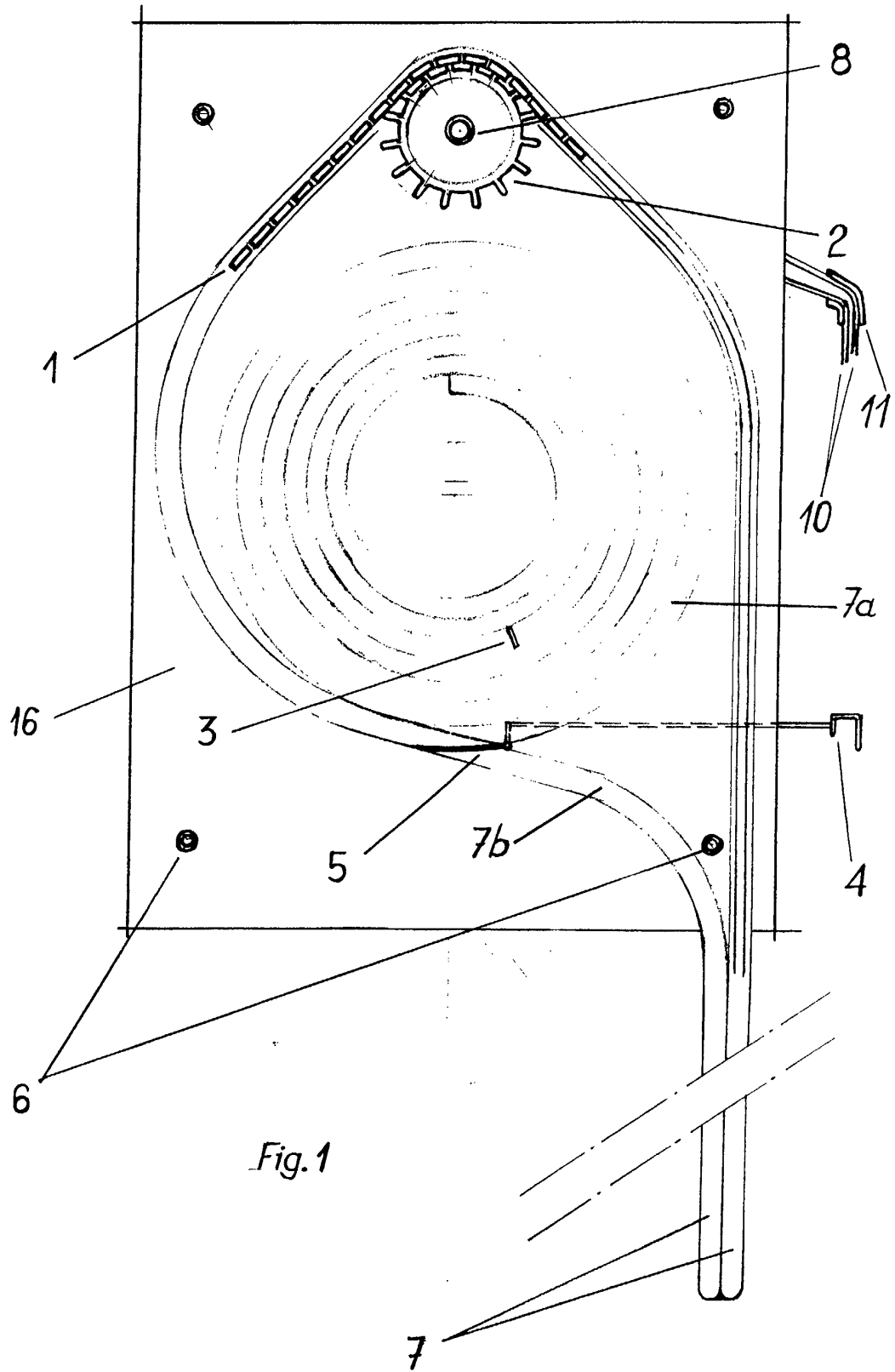
[0020] To raise the shutter (1) to its final position, it is necessary to pull the strap (10) until the shutter is at the end of its track (3), which is found inside the tracks (7a) of both wheel mechanisms (16). Its exact location depends on the length of the shutter (1) and the height of the window.

(7b) designed to lower the shutter (1) in order to clean the side that faces outside. Once the shutter (1) has been cleaned, all that is necessary is to pull the strap in the opposite direction so that the drive wheel (12), by means of the traction axle (8), enables the shutter to run off the track (7b) and return to its original position. Using the track-changing handle (4), the diverter (5) can then be returned to its normal position, enabling the shutter to be rolled through the tracks (7a) again.

Claims

1. REVERSIBLE ROLLER SHUTTER. This slatted roller shutter has spiral-shaped tracks (7a) mounted on both ends of the shutter casing or housing, which allow the shutter (1) to slide in one direction or the other by pulling the strap (10). When the shutter (1) is at the desired height, the strap (10) is held by wall anchoring point (14).

This system allows the shutter (1) to slide through spiral-shaped tracks (7a) or, by moving the handle (4) and releasing the diverter (5), the shutter (1) bypasses the spiral tracks (7a) before being rolled up on its first turn and is guided into the tracks



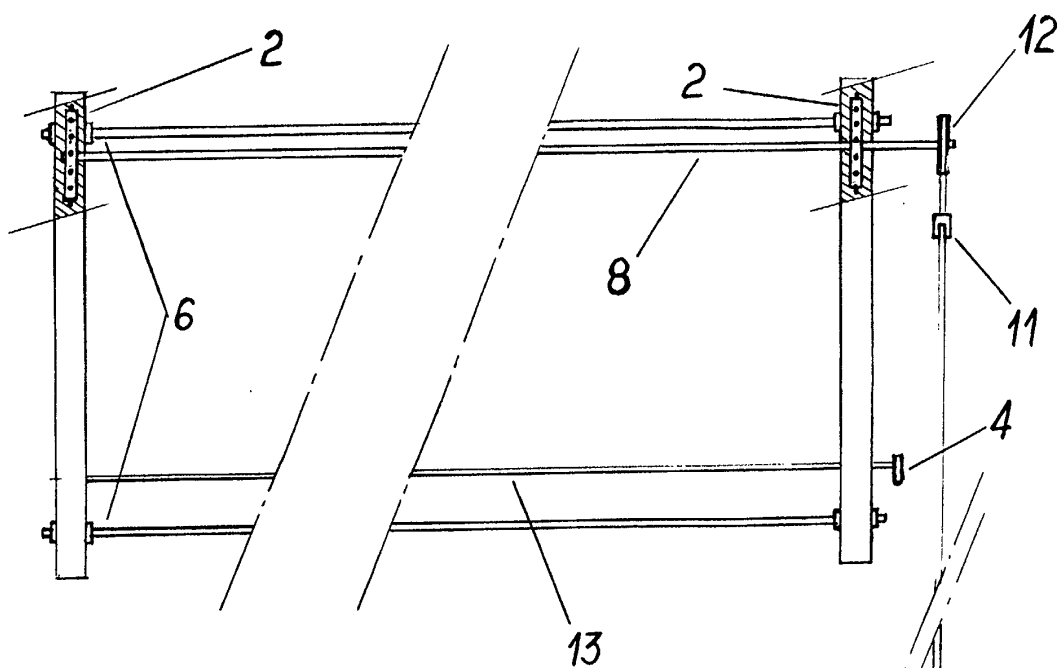


Fig. 2

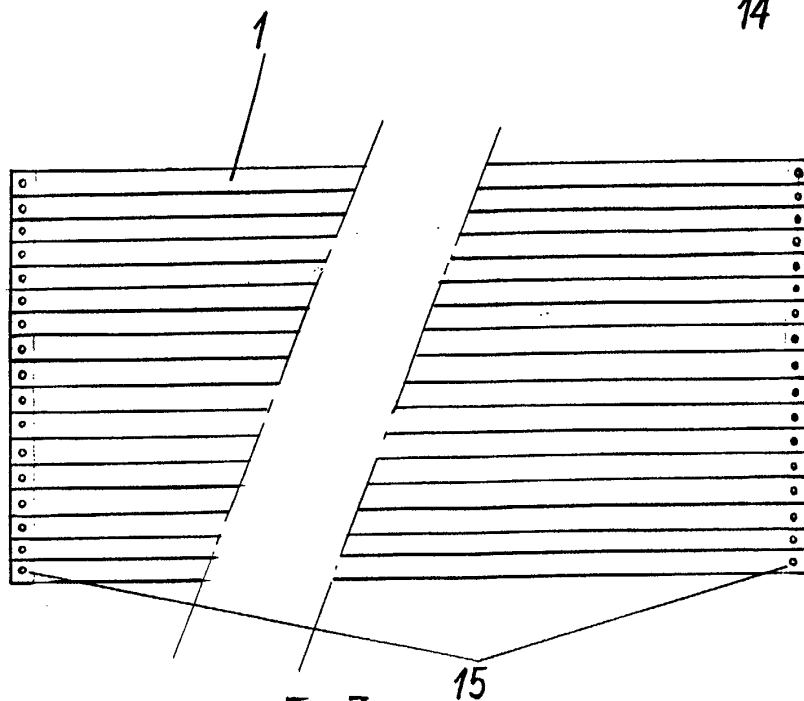
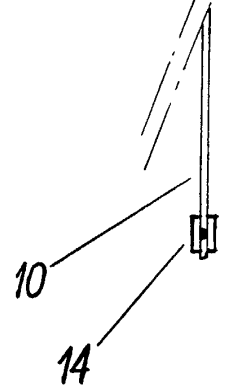


Fig. 3

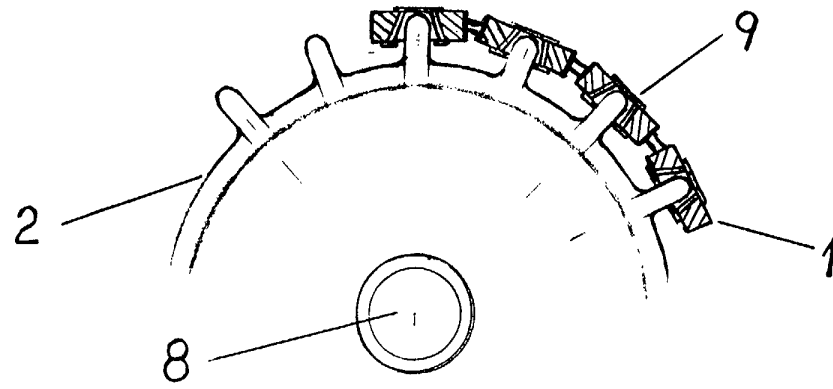


Fig.4