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(11)

EP 1 223 271 A2

(12)

EUROPEAN PATENT APPLICATION

(43) Date of publication:

17.07.2002 Bulletin 2002/29

(51) Int Cl.7: **E05B 15/02, E05B 3/06**

(21) Application number: **02380003.0**

(22) Date of filing: **09.01.2002**

(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

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(30) Priority: **10.01.2001 ES 200100049 U**

13.12.2001 ES 200103023 U

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(54) **Complements for slide locks which are activated by means of a square bar**

(57) The complements for slide locks which are activated by means of a square bar couple directly onto the handle's shield (1), mounting onto it without allowance for play.

The complement used for non-blocking locks has a characteristic teardrop shape with elements and rims distributed around its periphery and a central circular opening (12), while the one used for blocking locks has a characteristic teardrop shape with elements and rims distributed around its periphery and a central circular opening and also having a lower tongue that incorporates its corresponding stubs and a smaller circular opening than the previously mentioned one into which the blocking actuator mechanism is inserted. This last complement consists of a laminated body (9) which incorporates various projections that couple to the shield and various strips that act as the stopper stub of the lock's moving nucleus.

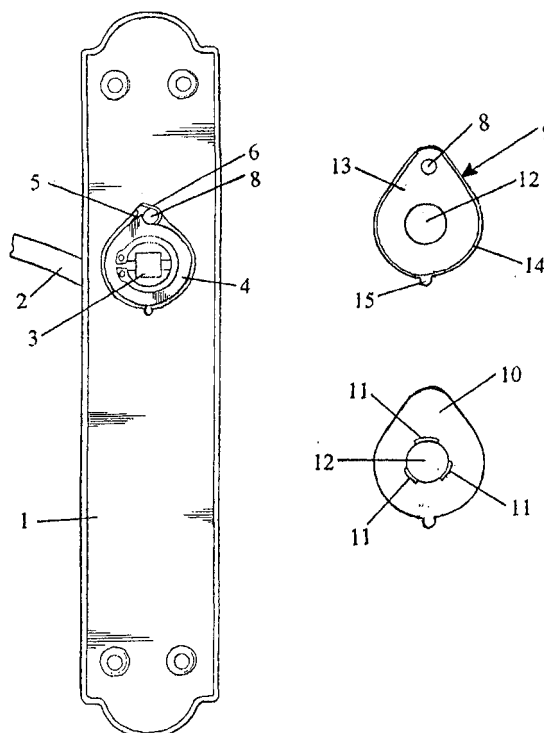


Fig. 1

EP 1 223 271 A2

Description

OBJECT OF THE INVENTION

[0001] The object of the invention consists of the group of various complements for slide locks which are activated by means of a square bar that couple directly onto the handle's shield, mounting onto it without allowance for play which could damage the structure of the shield with the passing of time. Said complements have a characteristic teardrop or circular shape and they are used for non-blocking locks or for blocking locks.

[0002] The complement used for non-blocking locks has a characteristic teardrop shape with elements and rims distributed around its periphery and a central circular opening. Likewise, the complement for blocking locks has a characteristic teardrop shape with elements and rims distributed around its periphery and a central circular opening and also having a lower tongue that incorporates its corresponding stubs and a smaller circular opening than the previously mentioned one into which the blocking actuator mechanism is inserted. This last complement consists of a laminated body which incorporates various projections that couple to the shield and various strips that act as the stopper stub of the lock's moving nucleus.

BACKGROUND OF THE INVENTION

[0003] The background of the complements object of the invention have their conceptual origin in the patent in the name of the same holder, patent No. 2119601, being "Mecanismo de bloqueo para cerraduras de resbalón con accionamiento a través de cuadrillo" (Spanish), [English equivalent: "Blocking mechanism for slide locks which are activated by means of a square bar."], wherein the object of the invention is a support destined to be attached to the internal face of any one of the lock's shields inside of which there is a moveable nucleus, which through the attaching end of the support to the shield it emerges to the outside ending in an axially activated button.

[0004] To insert the mentioned supports into the mentioned patent is only possible by means of stamping, but with the intention of cutting production costs, new lock shields are presently manufactured by lamination, an art that does not allow the inclusion of said supports with their corresponding stubs whose function is that of allowing the eventual blocking of the lock.

[0005] Slide locks include a moveable nucleus which turns around two positions, that are attained by means of an axially moving button corresponding to the handle. This nucleus includes in its periphery two ledges that limit with a protruding stub arranged on the inner surface of the shield. However, inserting this type of support during the constitution of the shield is only possible in those shields embodied by means of stamping. To rectify this manufacturing defect the complements object of the

present invention have been developed.

[0006] With the intention of attaining a greater lifetime use and achieve that the mounting of the reinforcement part of the stop is established without plays that could affect its resistance to breaking, the shield has been equipped with an opening with notched slots where the mentioned complements can be mounted.

DESCRIPTION OF THE INVENTION

[0007] To appropriately assemble the reinforcements object of the invention inside the shield it must be equipped with some complementary grooves to be included inside the central opening through which the moveable nucleus passes; said moveable nucleus corresponds with the axial movement button on one side and with a standard 8 mm square bar on the contrary side.

[0008] It is an object of the invention to equip the lock with a complement mounted in the shield without the blocking mechanism which has one of its sides completely smooth except for three notched segments which peripherally surround the central circular opening, the other side has a periphery rib which extends around the entire edge except at the rim of the upper end; on this end and next to the area without ribbing there is a cylindrical stub. At the lower end of the mentioned part arranged on the edge is a circular protuberance, as a continuation of the ribbing.

[0009] It is an object of the invention to equip the lock with a complement mounted in the shield with a blocking element which has one of its sides completely smooth except for three notched segments which peripherally surround the central circular opening, the other side of the complement with which we are dealing has the general teardrop shape with its lower base continuing as a skirting, with the lower edge rectangular and having on each side of said skirting a concave incision, on the upper part of the skirt there is a small hollow opening into which the mechanism for blocking activation is inserted. The periphery edging with teardrop shape is continuous and it has three cylindrical stubs, one located on the upper edge of the complement and the other two on the sides of the rectangular base of said complement.

[0010] It is an object of the invention to equip the lock with a laminated part of a general circular shape, with a cavity inside, which has a frontal face where on its upper part a stepped fold is formed constituting the reinforcement of the stop and a posterior face that is smooth except for three protruding folds in the form of indents which peripherally border the central opening.

[0011] From all of this, the advantages provided by the present reinforcements can be seen, such as the saving of material by having a reinforcement of a smaller size than those previously used, the elimination of vibrations produced by the banging of the lock, and finally, the advantage of lengthening the lifetime of the reinforcement constituting an equivalent to the stub used in

the shield itself either by means of a complementary stub in the reinforcement part or by means of a reinforced stepping.

BRIEF DESCRIPTION OF THE DRAWINGS

[0012]

Figure 1 represents an inside view of the shield that constitutes the handle, showing all of the elements that form a part of it and representing two detailed views of the complement object of the invention.

Figure 2 represents a view that shows in a similar way as that of the previous figure the elements that form the handle, in the case that the mentioned handle incorporates a blocking element.

Figure 3 represents a view of the inside of the shield showing the moveable nucleus arranged in a resting position and the reinforcement placed between one of the stops and the spring of the lock, where there is also represented a plot view of the laminated part object of the invention from where a detail is also seen which shows the stepped fold constituting the reinforcement of the stop.

DESCRIPTION OF A PREFERRED EMBODIMENT

[0013] As shown in figure 1, the shield (1) is the metallic element that supports the parts that make up the handle, among which stands out the actuating handle itself (2) the mouth of which forms the axial opening (3) bordered by a rotating plate (4) with a stop (5) and a spring (6). In the second practical embodiment object of the invention a stub (7) is eventually incorporated which allows the blocking of the rotating plate (4) and instead of one single stop (5) two are incorporated.

[0014] In the present practical embodiment the shield (1) is formed by means of a laminate, which prevents the application of corresponding stop stubs (8) by means of welding. As a substitute to this type of application and before assembling the elements of the handle itself, a laminated part (9) is arranged, preferably made of a plastic material and with a teardrop shape, with a smooth side (10) except for three notched ribs (11) that border the central opening (12) which gives way to the axial opening (3) of the handle itself. This smooth face (10) is arranged in direct contact with the shield (1).

[0015] The opposite face (13) has a peripheral rib (14) around the entire rim of the part (9), except for the upper part, where the stub (8) is located which acts as a stop for the spring (6). In the part corresponding to the base of the element with a teardrop shape and outside to the peripheral rib (14) is arranged a circular protuberance (15).

[0016] As shown in figure 2, in the case that the han-

dle incorporates the blocking element, another laminated part (16) is arranged, also preferably of a plastic material. Said part (16) has a teardrop shape incorporating in its base a skirting (7) of rectangular ending, where similar stubs (18) are located at the ends, as well as a small hollow opening (19) located at the center of the skirting (17). This laminated part (16) incorporates a peripheral ribbing (14) around the entire edge with a teardrop shape, even in the upper part, where the stub (8) is located, which acts as a stop for the spring (6).

[0017] As can be seen in figure 3, in one embodiment of the invention all of the elements are arranged mounted upon the shield (1) protruding through the unseen side of the mentioned shield of the handle (2) corresponding to the button of axial movement. Said movement makes the moveable nucleus rotate which in turn moves the rotating plate (4) between the stops (5) in the form of protruding angles that exist on the mentioned plate. The axial opening (3) at the center of the moveable nucleus gives way to the corresponding square bar which connects one part of the lock with its counterpart on the other side of the door. The spring (6) is the element that forces the moveable nucleus to return to its original position. The edge corresponding to the first step (20) which acts as a stub, is arranged between the stop (5) of the rotating plate (4) and the previously mentioned spring (6).

[0018] Next to the first step (20) the second step (21) is arranged, of less height than the first one and located next to it, in the direction of actuation of the stop (5) absorbing the continuous blows caused by the return of the moveable nucleus, rotated by the force of the spring (6). These constant blows of the stop (5) against the first step (20) affect the entire body and are absorbed by the mounting that exists between the three folds (22) of the laminated body (23) and the circular opening of the shield (1).

[0019] The complementary figure of figure 3 shows the part corresponding to the stop reinforcement, which is constituted by a laminated body (23) of a general circular shape, with a hollow in its interior (24), which has a frontal face and a posterior face. The part loses its curvature at the upper part and ends in a straight shape which presents a perimeter fold (25). The posterior face appears smooth except for three protruding folds (22) in the form of indents which peripherally border the interior hollow (24). As shown in the enclosed detail, the perimeter fold (25) formed at the straight section of the part consists of a double stepping, with the first step (20) being the one corresponding to the end stop and the second step (21) being a reinforcement rib which absorbs with greater security the vibrations of the material, since this part may be constituted of different materials.

Claims

1. Complement for slide locks which are activated by

means of a square bar, which incorporate inside the shield (1) a mouth which forms the axial opening (3) bordered by a rotating plate (4) with a pair of stops (5), a spring (6) and an eventual stub (7) which allows the blocking of the rotating plate (4), **characterized in that** said complement is formed by a laminated part (9) with a teardrop shape, with a smooth side (10) arranged in direct contact with the shield, and three notched ribs (11) that border a central opening (12) which gives way to the axial opening (3) of the handle itself, and an opposing face (13) with a peripheral rib (14) around the entire rim of the part (9), except for the upper part, where the stub (8) is located where the spring (6) is established, and incorporating a circular protuberance (15) in the part corresponding to the base of the complement and located outside the peripheral rib (14).

the three folds (11) protruding in the form of indents which peripherally border the interior hollow (7) of the reinforcement.

2. Complement for slide locks which are activated by means of a square bar according to the previous claim, **characterized in that** for the handles which incorporate a blocking element, the complement is another laminated part (16) with a teardrop shape which incorporates in its base a skirting (7) of rectangular ending, where similar stubs (18) are located at the ends, as well as a small hollow opening (19) located at the center of the mentioned skirting (17), of the same shape as in the previous part, the face (20) that is arranged in direct contact with the shield (1) is completely smooth except for three notched ribs (11) that border the central opening (12), and it incorporates a peripheral ribbing (14) around the entire edge with a teardrop shape, even in the upper part, where the stub (8) is located, which acts as a stop for the spring (6).
3. Complement for slide locks which are activated by means of a square bar according to the 2nd claim, **characterized in that** it is constituted by a laminated body (6) of a general circular shape, with an interior hollow (7) and which has a frontal face and a posterior face, the posterior face (10) appears smooth except for three protruding folds (11) which peripherally border the interior hollow (7) and the frontal face is completely smooth losing its curvature in the upper part and ending in a straight shape (8) which presents a perimeter fold (9), said perimeter fold is formed by a double stepping, with the first step (12) being the one corresponding to the end stop and the second step (13) being a reinforcement rib.
4. Complement for locks, according to the 1st claim, **characterized in that** the shield (1) has in the first upper third a circular opening (2) with various fittings (3) in its periphery, one on the upper part equidistant from two others, which in turn are equidistant from each other, in said opening (2) are mounted

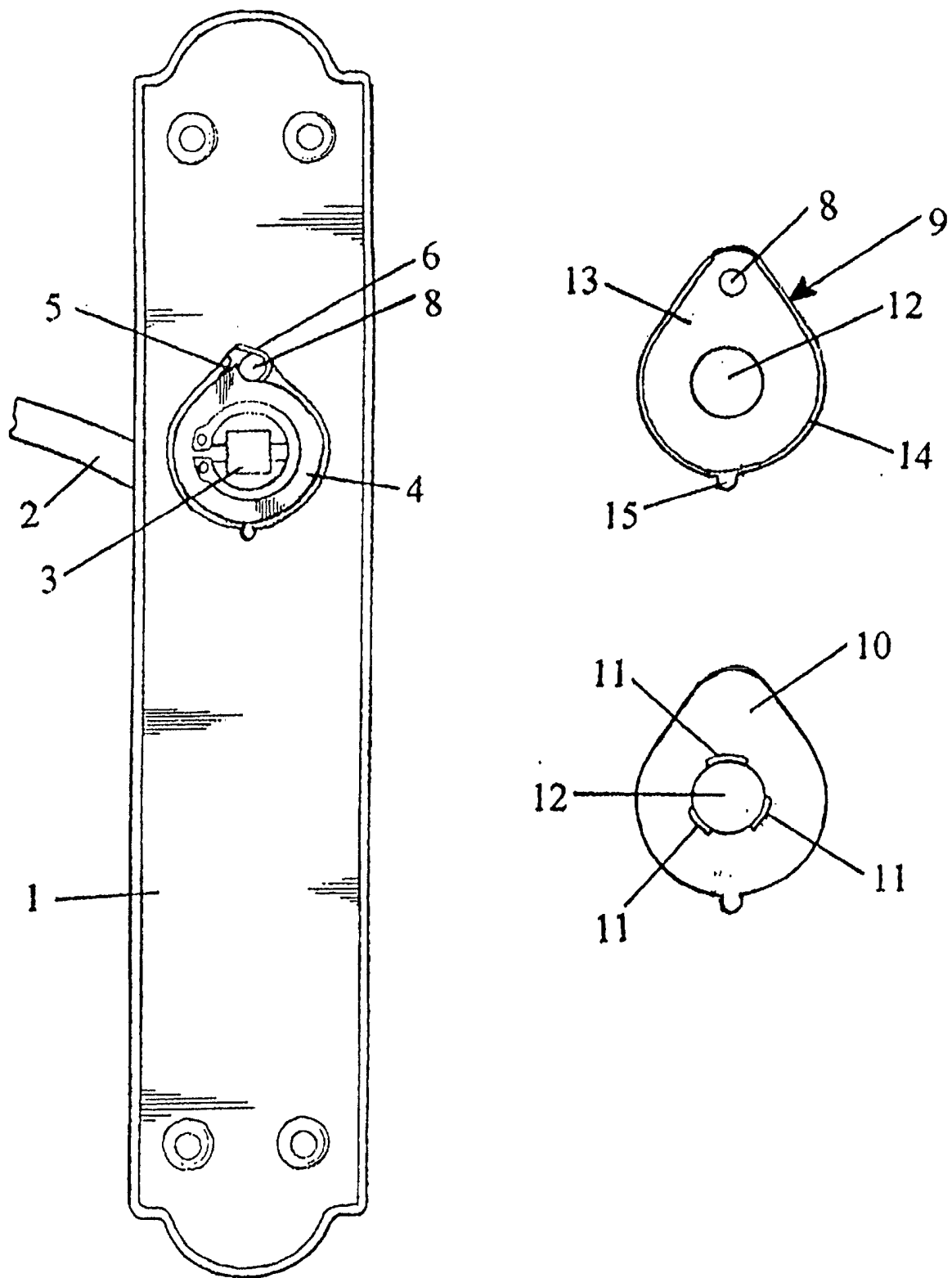


Fig. 1

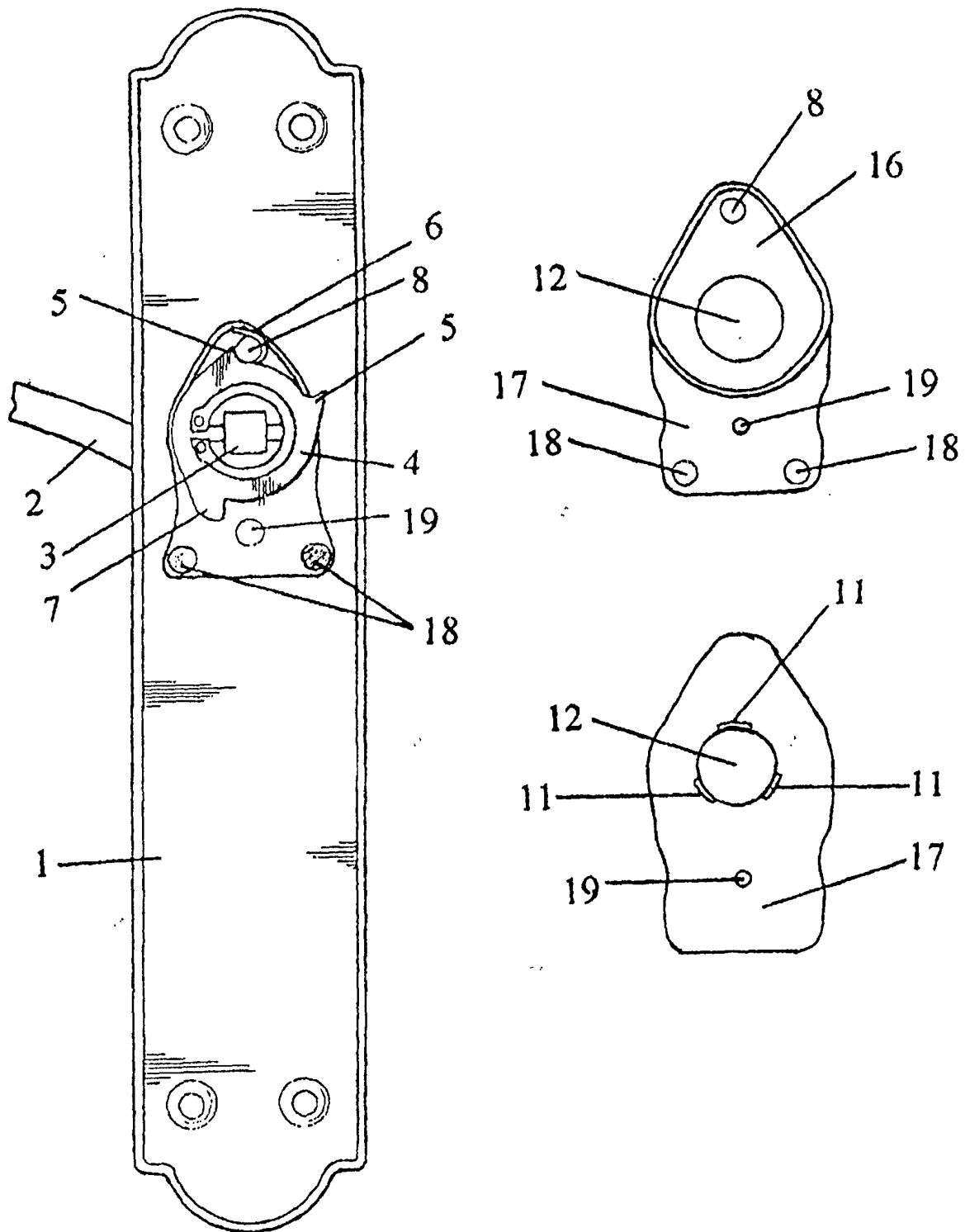


Fig. 2

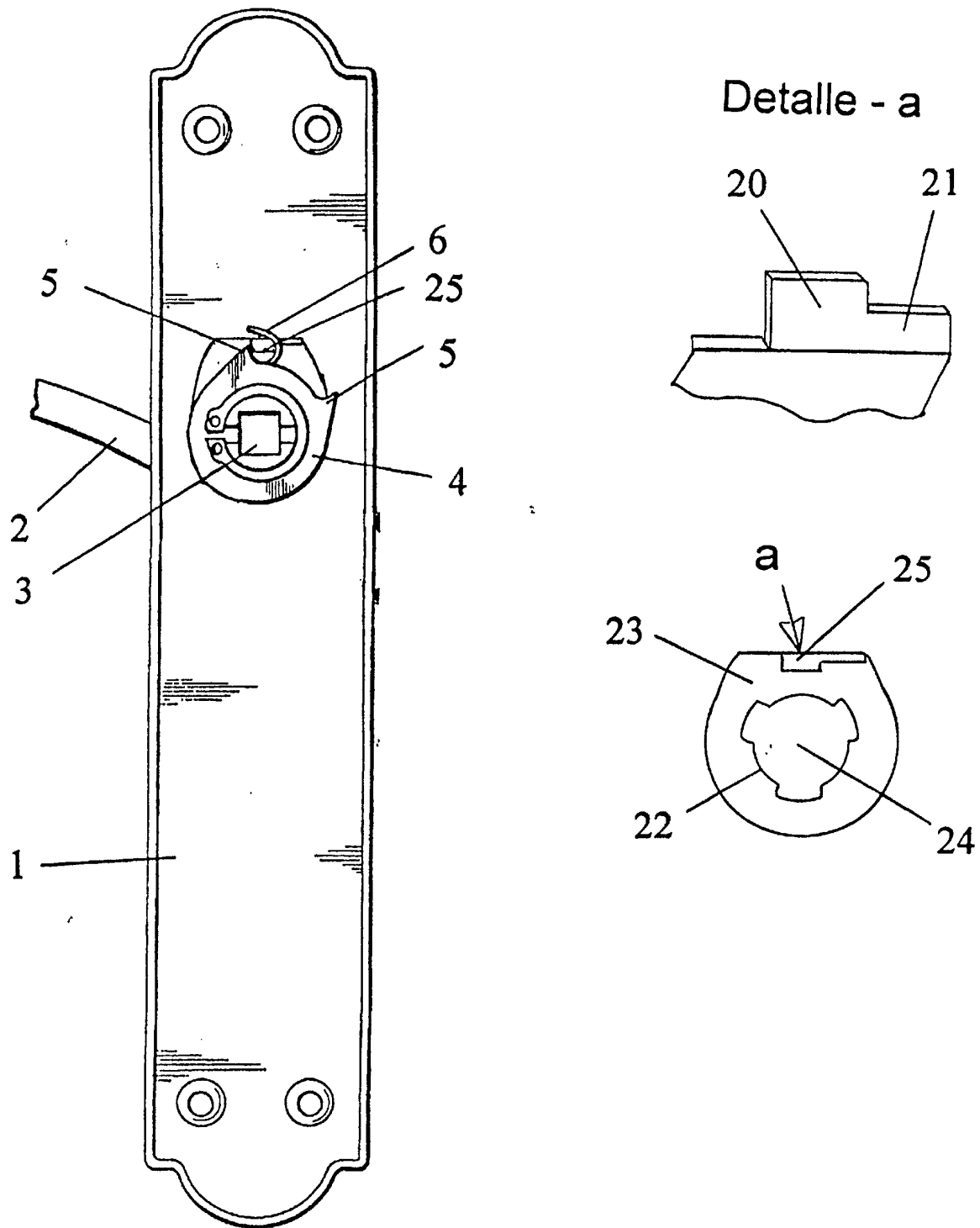


Fig. 3