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(54) A lock of a latch unit for shutters

(57) The present invention refers to a lock of a latch unit for shutters comprising a click button (2) arranged in a forked part of a latch handle (1). Said click button is permanently pressed by means of a compression spring (3) towards a hinge (4), said compression spring (3) being pressed against a back stop (12) of the latch handle (1).

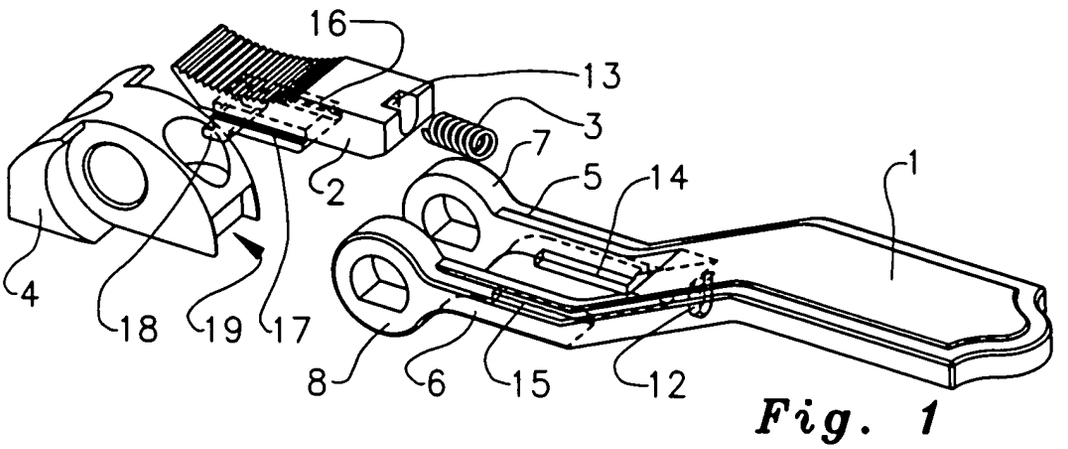

Fig. 1

EP 1 531 223 A1

Description

[0001] The present invention relates to a lock of a latch unit for shutters, both one and two winged shutters, comprising a hinge and a latch handle cooperating therewith, said handle comprising a click button, whereby with said lock a rotational locking movement is transfered to a locking bar by means of a form-locking connection, each end of said locking bar being equipped with a locking hook which meshes with a corresponding projection arranged on a shutter frame.

[0002] Known locks of the above mentioned type have a number of drawbacks. A spring for instance holding the click button in a position relative to the handle falls out of the bed thereof when the click button is forced too far into one of the extreme positions thereof. Furthermore, the known solutions are too intricate since they comprise a relatively large number of component parts. Such locks have to be assembled exclusively during the production thereof and with the use of relatively intricate appliances whereby later dismantling is not possible anymore without breaking open at least part of the lock.

[0003] It is the object of the present invention to create a technologicaly simple and competitive lock of a latch unit for shutters which, if necessary, might be assembled and/or dismantled on the spot.

[0004] According to the invention the set goal is achieved by a latch handle being forked at the end thereof which cooperates with a hinge, so that said handle comprises two legs having a lug at each free end thereof. The hinge is preferably formed as a section of a hemisphere laying with its base against a shutter frame. The lugs of said legs which are mutually concentric and lay in parallel planes extend into corresponding cutouts on the hinge, and form with their eyelets, provided in said lugs, a form-locking connection with a locking bar extending through the said hinge. Here, the shape of each eyelet of each lug differs from a circle at least in one section, or is interrupted by a chordal web intended for the engagement with the correspondingly formed locking bar.

[0005] At the forked end of the latch handle there is a click button arranged between the legs of the said handle, said button being moveable in the longitudinal direction of said handle and guided with said legs. On the side facing the hinge said button being formed with a hooklike projection cooperating with the corresponding cutout in the hinge. Moreover, at the end facing away from the hinge said click button is formed with a longitudinaly extending blind hole wherein a compression spring is arranged pressing with the other end thereof against a back stop formed on the latch handle in the area of the junction of legs with the rest of said handle.

[0006] Said click button is guided between the legs of the latch handle in a manner so that it comprises on each longitudinal side thereof a longitudinally extending groove cooperating with longitudinally extending protrusions formed on the facing sides of said legs.

[0007] It proved to be an advantage if the click button is on the side facing away from the shutter formed with a corrugated section which facilitates the engagement of the user finger with said button.

[0008] The present invention will become more fully understood from the detailed description given hereinafter and the accompanying drawings, wherein

Fig. 1 shows an exploded view of a lock according to the invention,
Fig. 2 shows a side view of the lock according to the invention,
Fig. 3 shows a cross-section of the lock in Fig. 4, and
Fig. 4 shows a view from above of a lock of Fig. 1.

[0009] A lock of a latch unit for shutters according to the invention comprises only four constituent parts, namely a latch handle 1, a click button 2 for blocking and unblocking of said latch handle, said button being arranged within said handle, a compression spring 3 holding the click button 2 in position, and a hinge 4 with which the latch handle 1 cooperates.

[0010] Said latch handle 1 is fork like split (Fig. 1 and Fig. 4) on the side thereof cooperating with the hemispherical hinge 4 where to each of leg 5, 6 of said forked split and at the free end thereof there is associated a lug 7, 8 being mutually coaxial and laying in parallel planes. Said lugs 7, 8 comprise circular eyelets 9, 10, yet said circular form of said eyelets differs from the circular shape or is interrupted by a chordal web 11 at least in one section. The latch handle 1 is namely by means of said eyelets 9, 10 in a form-locking connection and cooperates with a suitably shaped section of a locking bar L extending in parallel with the shutter and through the hinge 4.

[0011] In the area where legs 5, 6 connect to the latch handle 1 and on the side thereof which, with the lock assembled, facing the shutter, the latch handle 1 is formed with a back stop 12 extending perpendicularly to said handle, said compression spring 3 arranged in the click button 2 presses against said back stop. To accomodate said spring, the click button 2 on the side facing said latch handle 1 is formed with a longitudinally extending blind hole 13. Said compression spring 3 is placed in said hole 13 in a manner so that the click button 2 is permanently pressed perpendicularly against the hinge 4.

[0012] Said click button 2 is guided between the legs 5, 6 in guideways 14, 15 cooperating with corresponding grooves 16, 17 formed on each longitudinal side of said button. The click button 2 has a hooklike projection 18 on its lower side i.e. on the side facing the shutter and the hinge 4, said projection 18 cooperates with a corresponding cutout 19 on that side of the hinge 4 facing the click button 2. The above mentioned compression spring 3 ensures that the hooklike projection 18 is per-

manently engaged with the cutout 19 of the hinge 4 (Fig. 4) in the closed position of the lock according to the invention. The click button 2 comprises a corrugated section on the upper side thereof i.e. on the side facing away from the shutter, said section being intended for cooperation with a finger of the user.

[0013] The lock of the latch unit according to the invention is assembled using the lowest possible number of constituent parts facilitating assembly and installation of said lock onto the shutter. At first, when installing the lock, the compression spring 3 is inserted into the blind hole 13 of the click button 2. One of the possibilities according to the invention provides that the compression spring 3 is inserted into the blind hole 13 and secured there against falling out, for instance during die casting of the click button 2. Afterwards, the composition of the click button 2 and the compression spring 3 is moved over the grooves 16, 17 in the longitudinal direction of the handle onto the guideways 14, 15 of the legs 5, 6. The locking bar L is partially pushed into the first of the eyelets 9, 10 of the lugs 7, 8 on the latch handle 1, then the hinge 4 is advanced so as to extend between the legs 5, 6, and the locking bar L is pushed further on through the corresponding hole in hinge 4 and the second of the eyelets 9, 10 of the lugs 7, 8 on the latch handle 1. These steps are followed by securing such an assembled lock onto a wing of the shutter, using screws for example. Here, the locking bar L is in a form-locking connection with the lugs 7, 8.

[0014] In addition, the use of said lock is user-friendly since it is not at all possible to dismantle the lock without breaking the lock or removing the screws. The lock according to the invention operates the following way. Starting from the position according to Fig. 2 and Fig. 3 representing the lock according to the invention in the closed position of the shutter, the hooklike projection 18 retracts from the cutout 19 of the hinge 4 when pushing the latch button 2 in the direction away from the hinge 4, facilitating swinging of the latch handle 1 about its rotational axis which is simultaneously the axis of the locking bar L. When the hooklike projection 18 disengages the cutout 19 it is possible for the click button 2 to be released since swinging the latch handle 1 further said button slides over the hemispherical hinge 4. Here, the latch handle 1 is swug to the extent that the locking bar L releases the wing of the shutter.

Claims

1. A lock of a latch unit for shutters, both one and two winged shutters, comprising a hinge and a latch handle cooperating therewith, said handle comprising a click button, whereby with said lock, a rotational locking movement is transfered to a locking bar by means of a form-locking connection, ***characterised in*** **that** a latch handle (1) on the end thereof cooperating with a hinge (4) is forked and comprises legs (5, 6) being formed on each free end thereof with lugs (7, 8), that the lugs (7, 8) of the legs (5, 6) extend into a corresponding cutout of the hinge (4) and comprise eyelets (9, 10) which are in a form-locking connection with a locking bar (L) extending through the hinge (4), that a click button (2) is arranged on the fork-like end of the latch handle (1) between the legs (5, 6) of the forked section of the latch handle (1), said button (2) being moveable in longitudinal direction of the handle (1) and guided with legs (5, 6), and being on the side facing the hinge (4) and the shutter formed with a hooklike projection (18) cooperating with a corresponding cutout (19) in the hinge (4), and being on the end facing away from the hinge (4) formed with a longitudinally extending blind hole (13) wherein a compression spring (3) is located pressing with the other end thereof against a back stop (12) formed on the latch handle (1).

2. A lock according to claim 1, ***characterised in*** **that** the click button (2) is guided between the legs (5, 6) of the latch handle (1) in a way that said button is formed on each longitudinal side thereof with a groove (16, 17) cooperating with longitudinally extending protrusions (14, 15) formed on the inner side of each leg (5, 6).

3. A lock according to claim 1, ***characterised in*** **that** the click button (2) comprises a corrugated section formed on the side thereof facing away from the shutter.

4. A lock according to claim 1, ***characterised in*** **that** the lugs (7, 8) associated with legs (5, 6) face coaxially to each other and lay in mutually parallel planes.

5. A lock according to claim 1, ***characterised in*** **that** the form of each eyelet (9, 10) of each lug (7, 8) at least in one section differs from the circular shape or is interrupted by a chordal web (11) intended for the form-locking connection with the correspondingly formed locking bar (L).

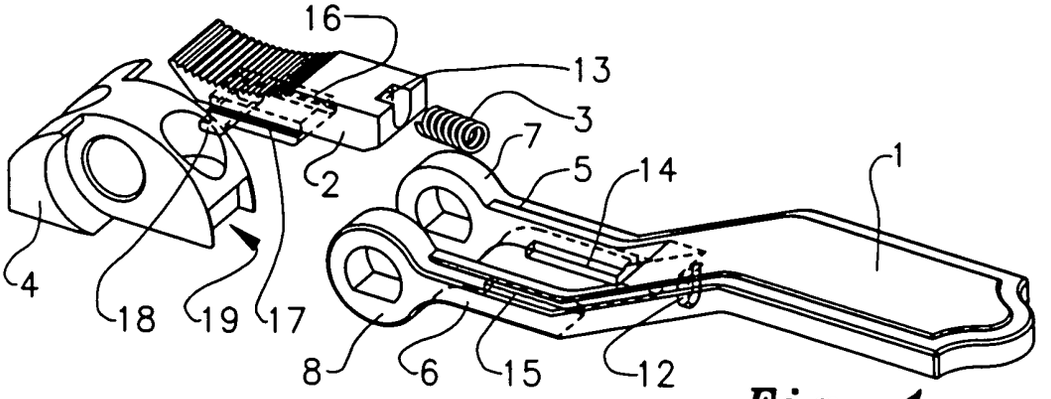

Fig. 1

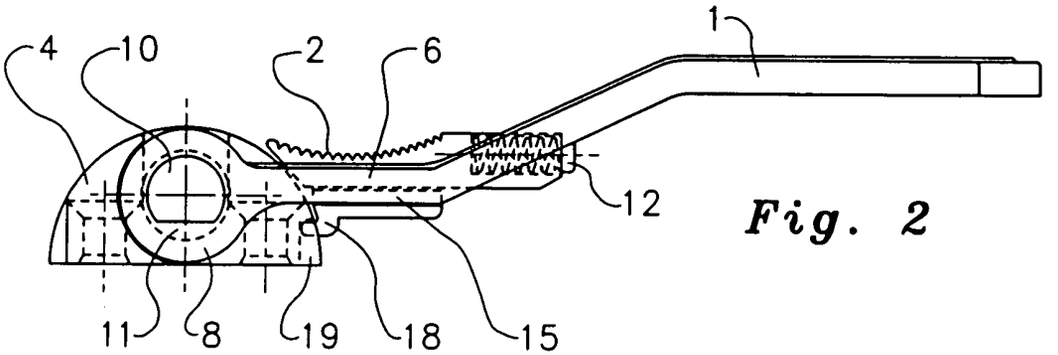

Fig. 2

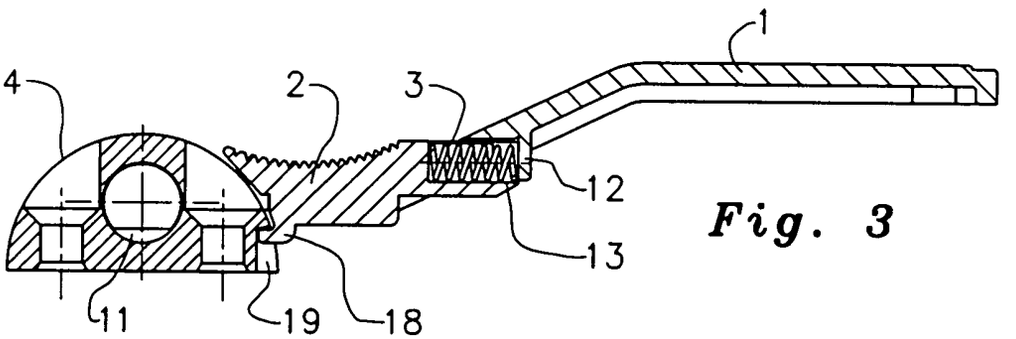

Fig. 3

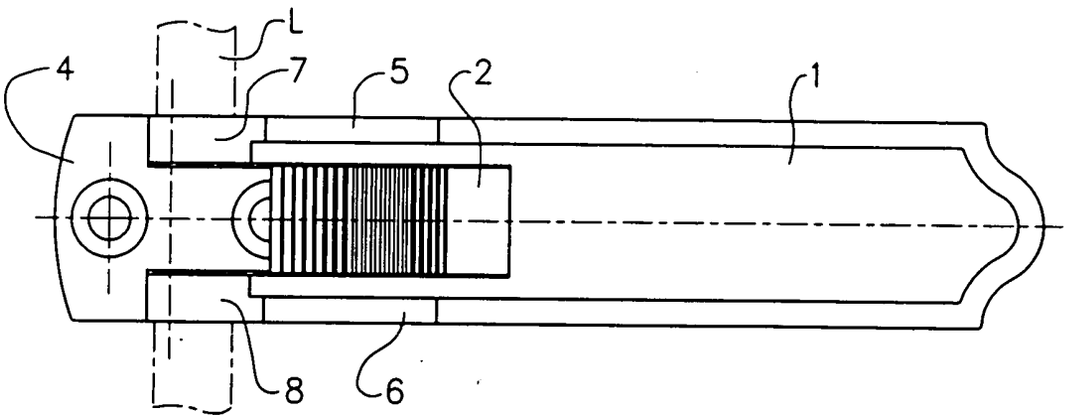

Fig. 4

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EUROPEAN SEARCH REPORT

Application Number
EP 03 46 8009

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.7)
X	DE 82 26 742 U (LAPP-FINZE EISENWARENFABRIKEN AG) 30 December 1982 (1982-12-30) * page 4, line 35 - page 5, line 30; figures 1,2 * ---	1,4,5	E05C9/08 E05B13/00 E05B13/10
A	EP 1 256 679 A (ROTO FRANK EISENWAREN) 13 November 2002 (2002-11-13) * paragraph [0011]; claim 1; figures 3,4 * -----	1-5	

TECHNICAL FIELDS SEARCHED (Int.Cl.7)

E05C
E05B

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
MUNICH	14 April 2004	Kofoed, P

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
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14-04-2004

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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82