

(19)



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Office européen des brevets



(11)

EP 0 809 224 B1

(12)

EUROPEAN PATENT SPECIFICATION

(45) Date of publication and mention
of the grant of the patent:

07.11.2001 Bulletin 2001/45

(51) Int Cl.7: **G09F 7/18**

(21) Application number: **97830213.1**

(22) Date of filing: **09.05.1997**

(54) **Name bearing plate provided with quick locking means for locking the outer push-buttons**

Namensschild mit Schnellverriegelungsmittel zum Befestigen der äusseren Tastenknöpfe

Plaque pour noms avec mécanisme rapide de blocage pour bloquer les poussoirs externes

(84) Designated Contracting States:
BE DE ES FR GB GR PT

(30) Priority: **24.05.1996 IT MI960401 U**

(43) Date of publication of application:
26.11.1997 Bulletin 1997/48

(73) Proprietor: **Elvox Costruzioni Elettroniche S.p.A.**
35133 Padova (IT)

(72) Inventor: **Miozzo, Orlando**
Via A. Ferrero, 9, 35133 Padova (IT)

(74) Representative: **Cicogna, Franco**
Ufficio Internazionale Brevetti
Dott.Prof. Franco Cicogna
Via Visconti di Modrone, 14/A
20122 Milano (IT)

(56) References cited:
EP-A- 0 702 383 **CH-A- 654 944**
DE-A- 3 602 283 **DE-A- 4 447 176**
DE-C- 4 004 337

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EP 0 809 224 B1

Description

[0001] The present invention relates to a name bearing plate, provided with quick locking means for locking the outer push-buttons associated with said plate.

[0002] As is known, in making brass name bearing plate, a problem is that of properly coupling to the plate the ringer push-buttons, which push-buttons are also made of a brass material.

[0003] Actually, it is rather difficult to properly assembling a lot of component elements by using screw connections which, moreover, are very expensive mainly from the assembling time standpoint.

[0004] Moreover, a further problem is that of properly electrically insulating the ringer push-buttons.

[0005] Accordingly, the aim of the present invention is to overcome the above mentioned drawbacks, by providing a name bearing plate with locking means for quickly locking outer push-buttons associated with said plate, which allows to make, on a brass name bearing plate element, a snap type of coupling for connecting an outer push-button, without using tools or the like.

[0006] Within the scope of the above mentioned aim, a main object of the present invention is to provide such a name bearing plate which allows to perform electrically insulating operations in a very simple manner, thereby solving all of the related problems.

[0007] Another object of the present invention is to provide such a name bearing plate which, owing to its specifically designed construction, is very reliable and safe in operation.

[0008] Yet another object of the present invention is to provide such a name bearing plate, including locking means for quickly locking outer push-buttons associated with said plate, which can be easily made starting from easily commercially available elements and materials and which, moreover, is very competitive from a mere economic standpoint.

[0009] According to one aspect of the present invention, the above mentioned aim and objects, as well as yet other objects, which will become more apparent hereinafter, are achieved by a name bearing plate provided with quick locking means for quickly locking outer push-buttons associated with said plate, comprising a plate element having a plurality of windows for receiving corresponding name bearing glass elements adjoining holes for receiving said push-buttons, characterized in that each of said name bearing glass elements defines quick coupling means for locking the body of one of said push-buttons.

BRIEF DESCRIPTION OF THE DRAWINGS

[0010] Further characteristics and advantages of the present invention will become more apparent hereinafter from the following detailed disclosure of a name bearing plate with quick locking means for quickly locking outer push-buttons, which is illustrated, by way of an

indicative, but not limitative, example, in the accompanying drawings, where:

Figure 1 is a cross-sectional view illustrating a name bearing plate provided with adjoining windows or openings;

Figure 2 is a further cross-sectional view substantially taken along the section line II-II of figure 1;

Figure 3 illustrates a name bearing glass element, specifically provided for bearing two names;

Figure 4 is an elevation view illustrating a name bearing glass element, as partially cross-sectioned; Figure 5 is a double name bearing glass element, as seen from the inside thereof;

Figure 6 illustrates a single name bearing glass element, as seen from the inside thereof;

Figure 7 is across-sectional view substantially taken along the section line VII-VII of figure 6;

Figure 8 is a top plan view illustrating a name bearing sheet restraining element;

Figure 9 is an end view illustrating the same name bearing sheet restraining element; and

Figure 10 is a cross-sectional view illustrating a push-button associated with the subject name bearing plate.

DESCRIPTION OF THE PREFERRED EMBODIMENT

[0011] With reference to the number references of the above mentioned figures, the name bearing plate, including quick locking means for quickly locking outer push-buttons associated with said plate, according to the present invention, which has been generally indicated by the reference number 1, comprises a brass plate 2, which is provided with a plurality of windows or throughgoing openings 3, which can be arranged in a by-pair adjoining relationship, or which can be individual and overlaid one on the other.

[0012] In the mentioned windows or openings 3, is engaged a name bearing small glass element, generally indicated by the reference number 10, which can be either of a double type, as is shown in figures 3 to 5 or of a single or individual type, as is shown in figures 6 and 7.

[0013] Each name bearing glass element defines an enlarged thickness region 11 engaging inside the windows 3 and being provided with longitudinally extending side edge portions 12 provided with coupling tooth elements 13, for allowing name sheet restraining or holding elements 15 to be engaged therein, each said name sheet holding element being provided with fins or tabs 16 adapted to be engaged between said tooth element 13 for allowing said name bearing sheet holding element to be easily applied and removed.

[0014] Adjoining the windows 3 are provided a plurality of holes, indicated by the reference number 18, in which can be engaged push-buttons, generally indicated by the reference number 20.

[0015] More specifically, each push-button 20 is pro-

vided with a hollow push-button body 21, in the inside of which is provided a slider element 22, also made of a brass material, which is coupled to an end portion of a pin 23, provided, on end arm elements 24 thereof, with a ring-like enlarged portion 25, adapted to be snap engaged in an annular groove 26 formed on the slider element.

[0016] Between each push-button and the inside bottom portion of the push-button 20, is arranged a spring 27.

[0017] As shown, the push-button body 20 is provided, on the outer surface thereof, with a cut-out 30, delimited by an abutment 31.

[0018] In said cut-out portion 30, quick connecting means can be easily engaged, said quick connecting means being defined by said small glass element 10 and comprising resilient tabs 35, engaging in the cut-out portion 30 and abutting against the abutment 31, thereby allowing the push-button 20 to be quickly and simply locked inside the plate 2.

[0019] From the above disclosure it should be apparent that the invention fully achieves the intended aim and objects.

[0020] In particular, it should be pointed out that the push-button is connected by simply engaging the body of the push-button inside the tabs 35, which in turn engage in the cut-out portion or groove 30, thereby providing a quick locking operation.

[0021] In this connection it should be moreover apparent that the push-button can be easily assembled, since the push-button pin is coupled to the slider element by a simple pressing operation, which causes the arms 23 to be bent, thereby causing the enlarged portion 25 to be engaged in the groove 26 of the slider element, which enlarged portion 25 is defined, as shown, at the end portions of the arms of the push-button pin.

[0022] In practicing the invention, the used materials, provided that they are compatible to the intended use, as well as the contingent size and shapes, can be any, depending on requirements.

Claims

1. A name bearing plate (1) provided with quick locking means for quickly locking outer push-buttons associated with said plate, comprising a plate element (2) having a plurality of windows for receiving corresponding name bearing glass elements (10) and adjoining holes (18) for receiving said push-buttons, **characterized in that** each of said name bearing glass elements defines quick coupling means (35) for locking the body of one of said push-buttons.
2. A name bearing plate, according to Claim 1, **characterized in that** said plate element (2) and the body (21) of the push-button are made of a brass

material.

3. A name bearing plate, according to Claims 1 and 2, **characterized in that** said quick coupling or connecting means comprises a plurality of resilient tabs (35), defined by said glass elements (10) about said adjoining holes (18) in which can be engaged said body (21) provided with a cut-out portion (30) delimited by an abutment (31) which can be connected to the end portions of said resilient tabs.
4. A name bearing plate, according to one or more of the preceding claims, **characterized in that** said push-button is provided with a brass slider element (22), which is removably coupled to an electrically insulating material pin (23), engaged inside the body of said push-button.
5. A name bearing plate, according to Claim 4, **characterized in that** said pin is provided with a pair of mutually flexible arms (24) which are provided with a projecting ring-like element (25) to be engaged in a groove (26) correspondingly formed on said slider element.
6. A name bearing plate, according to one or more of the preceding claims, **characterized in that** the body (21) of said push-button is provided, at the end portion opposite to that defining said cut-out, with an abutment edge portion which can be coupled about the holes (18) for the push-buttons.

Patentansprüche

1. Namensschild (1) mit Schnellverriegelungsmittel zum schnellen Befestigen der mit dem Schild verbundenen äußeren Tastenknöpfe, mit einem Schildelement (2) mit einer Mehrzahl von Fenstern zur Aufnahme entsprechender namentragender Glaselemente (10) und mit angrenzenden Löchern (18) zur Aufnahme der Tastenknöpfe, **dadurch gekennzeichnet, daß** jedes der namentragenden Glaselemente Schnellverriegelungsmittel (35) zum Befestigen des Körpers eines der Tastenknöpfe definiert.
2. Namensschild nach Anspruch 1, **dadurch gekennzeichnet, daß** die Schildelemente (2) und der Körper (21) der Tastenknöpfe aus einem Messingmaterial hergestellt sind.
3. Namensschild nach Anspruch 1 und 2, **dadurch gekennzeichnet, daß** das Schnellverriegelungs- oder Verbindungsmittel eine Mehrzahl nachgiebiger Streifen (35) aufweist, die durch die Glaselemente (10) um die angrenzen-

den Löcher (18) herum definiert sind, in denen die mit einem Ausschnitt (30) versehenen Körper (21) in Eingriff bringbar sind, der durch einen Anschlag (31) begrenzt ist, der mit den Endabschnitten der nachgiebigen Streifen verbindbar ist.

4. Namensschild nach einem oder mehreren der vorangegangenen Ansprüche, **dadurch gekennzeichnet, daß** der Tastenknopf mit einem Messing-Schiebeelement (22) versehen ist, das entfernbar mit einem innerhalb des Körpers des Tastenknopfes in Eingriff befindlichen Stift (23) aus elektrisch isolierendem Material verbunden ist.

5. Namensschild nach Anspruch 4, **dadurch gekennzeichnet, daß** der Stift mit einem Paar von gegenseitig flexiblen Armen (24) versehen ist, die mit einem hervorstehenden ringähnlichen Element (25) versehen sind, das in einer auf dem Schiebeelement entsprechend ausgebildeten Nut (26) in Eingriff bringbar ist.

6. Namensschild nach einem oder mehreren der vorangegangenen Ansprüche, **dadurch gekennzeichnet, daß** der Körper (21) des Tastenknopfes an dem Endabschnitt, der demjenigen gegenüberliegt, der den Ausschnitt definiert, mit einem Anschlagantenabschnitt versehen ist, der über den Löchern (18) für die Tastenknöpfe verbindbar ist.

Revendications

1. Plaque de support de dénomination (« name bearing plate ») (1) munie de moyens de verrouillage rapide pour verrouiller rapidement les boutons-poussoir externes associés à ladite plaque, comprenant un élément de type plaque (2) présentant plusieurs fenêtres destinées à recevoir des éléments en verre (10) pour le support de dénomination correspondante et avoisinant des orifices (18) destinés à recevoir lesdits boutons-poussoir, **caractérisée en ce que** chacun des éléments en verre pour le support de dénomination définit des moyens de couplage rapide (35) pour verrouiller le corps d'un desdits boutons-poussoir.
2. Plaque de support de dénomination selon la revendication 1, **caractérisée en ce que** ledit élément de type plaque (2) et le corps (21) du bouton-poussoir sont fabriqués en matériau de laiton.
3. Plaque de support de dénomination selon les revendications 1 ou 2, **caractérisée en ce que** lesdits moyens de connexion ou de couplage rapide comprennent plusieurs languettes résilientes (35), définies

par lesdits éléments en verre (10) près desdits orifices avoisinants (18) dans lesquels peut être enclenché ledit corps (21) muni d'une partie découpée (30) délimitée par une butée (31) qui peut être connectée aux parties d'extrémités desdites languettes résilientes.

4. Plaque de support de dénomination selon l'une quelconque des revendications précédentes, **caractérisée en ce que** ledit bouton-poussoir est muni d'un élément coulissant en laiton (22), qui est associé de manière amovible à une broche (« pin ») (23) en matériau électriquement isolant, enclenché à l'intérieur du corps dudit bouton-poussoir.

5. Plaque de support de dénomination selon la revendication 4, **caractérisée en ce que** ladite broche est munie d'une paire de bras mutuellement flexibles (24) qui est munie d'un élément saillant en forme d'anneau (25) pour être enclenché dans une rainure (26) formée en conséquence dans ledit élément coulissant.

6. Plaque de support de dénomination selon l'une quelconque des revendications précédentes, **caractérisée en ce que** le corps (21) dudit bouton-poussoir est muni, sur la partie d'extrémité opposée à celle définissant la découpe, d'une portion de type rebord de butée qui peut être couplée aux orifices (18) destinés à recevoir les boutons-poussoir.





