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54 **Vehicle handle unit and a method for its assembly.**

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Description

This invention relates to a vehicle handle unit and a method for its assembly.

Various types of vehicle handles are known, these involving various problems both in terms of the door design and in terms of their assembly. The US-A-4 834 433 discloses a door handle assembly for a motor vehicle and more particularly provides a door handle assembly comprised of molded plastic parts which snap together to eliminate the need for separate fasteners. In this respect, the handle unit is generally assembled onto already painted parts, and this must therefore be done with care in order not to ruin already completed paintwork. Totally holed handle cavities are currently provided in doors, leading to considerable structural weakness. This weakness can be obviated by metal or plastics cover pieces, but these result in problems of corrosion, air sealing and consequent internal vehicle noise. Current handle units also suffer from the problem of difficulty in aligning the indentation profile with the handle. The object of the present invention is to overcome the said drawbacks of the known art by providing a vehicle handle unit in which the handle indentation does not weaken the structure, so dispensing with the need for stiffening covers while at the same time allowing more reliable assembly of the unit, such that the unit provides a good seal and does not damage the paintwork during assembly.

This object is attained by a method for assembling a vehicle handle unit according to claim 1.

A base member is provided with a pair of seats for receiving respective spacer inserts of plastics material, said seats being positioned below said levers, said spacer inserts preventing contact between said handle when mounted on said levers and said vehicle door.

According to the invention said inserts are freely withdrawable. In a preferred embodiment of the present invention said spacer inserts are substantially of L cross-section, one arm of said L engaging a respective tooth provided on said levers.

On that end outwards of said indentation, said spacer inserts are preferably provided with a projection to facilitate their extraction from said seats.

To obtain a large-radius indentation, said indentation must be formed by pressing.

Said indentation also comprises holes for fixing said internal part of said unit to said door.

The characteristics and further advantages of the present invention will be more apparent from the description given hereinafter by way of non-limiting example with reference to the accompanying drawings in which:

Figure 1 is a section through a handle unit according to the invention shown partly exploded;

Figure 2 is a section through the assembled ele-

ments of Figure 1;

Figure 3 is a further partly exploded sectional view of the elements of Figure 1; and

Figure 4 is a section through the elements of the handle unit according to the invention shown assembled in their final configuration.

In the figures the reference numeral 11 indicates overall a handle unit according to the invention and 12 indicates the profile of a vehicle door comprising an indentation 13.

The handle unit consists of a part internal to the indentation 13 comprising a base member 14 on which levers 16 are hinged at 15, and a part external to the indentation 13 consisting of a handle 17.

The indentation 13 is formed of very large radius which enables it to be press-formed, and is provided with a pair of slots 18 for passage and articulation of the levers 16. Holes 19 are also provided for securely fixing the base member 14 to the indentation. In the indentation there is also provided a longitudinal aperture 20 in which an edge 21 of the base member engages, its purpose being to support the internal part of the handle unit during one stage of assembly. The base member 14 is also provided, in a position below the levers 16, with seats 22 into which substantially L-shaped spacer inserts 23 can be inserted. One arm of the insert 23 engages a tooth 24 provided on the levers 16 to maintain the levers 16 in a partly raised position. To facilitate extraction of the inserts 23 they are provided with a projection 26 on that end outwards of the indentation 13. The levers 16 are also provided with elastic means 25 for snap-fitting the handle 17 (by pressing).

Figures 1 to 4 show in sequence the main assembly stages.

In Figure 1 the internal part is fixed to the indentation, the spacer inserts are in their respective seats, and the handle has not yet been inserted.

Figure 2 shows the handle fixed to the levers. During this stage, especially if on the assembly line, the fitter is required to exert a certain pressure on the handle, and if the spacer inserts were not present there would be a risk of impact against already painted parts.

Figures 3 and 4 show how the spacer inserts are disengaged, this being an operation which can be carried out subsequently, in that these can be removed from the vehicle at any time up to its delivery to the purchaser.

Claims

1. A method for assembling a handle unit (11), consisting of:
 - a first stage in which the internal part (14,16) of a handle unit (11) is fixed onto a door (12) in a position corresponding with a

- holed indentation (13), said internal part (14,16) comprising elastically hinged levers (16) for insertion through slots (18) of said indentation (13);
- a second stage in which said levers (16) are raised and inserted into suitable seats;
 - a third stage in which a handle (17) is mounted onto partially raised levers (16); characterised in that
 - the second stage consists also of inserting profiled spacer inserts (23) into seats (22) which are provided above said seats of said levers (16) and
 - a fourth and final stage in which said handle (17) rigid with said levers (16) is raised and said spacer inserts (23) are removed, said fourth stage being deferred in time as required.
2. A vehicle handle unit (11) assembled according to the method of claim 1 in which said indentation (13) comprises a pair of levers (16) hinged to a base member (14), said levers (16) being provided with elastic fixing means (25) and tensioning springs, said indentation being of large radius and comprising slots (18) to allow passage of a handle (17) to be fixed to said levers (16) by said elastic fixing means (25), characterised in that said handle (17) is provided with caps of rubbery material for sealing purposes, said base member (14) also being provided with a pair of seats (22) for receiving respective spacer inserts (23) of plastics material, and positioned on said levers (16), said spacer inserts (23) preventing contact between said handle (17) when mounted on said levers (16) and said vehicle door (12) and being freely removable, said handle (17) being locked to said levers (16) for snap-fitting.
3. A handle unit (11) as claimed in claim 2, characterised in that said spacer inserts (23) are substantially of L cross-section, one arm of said L engaging a respective tooth (24) provided on said levers (16).
4. A handle unit (11) as claimed in claim 2, characterised in that said spacer inserts (23) are provided on that end outwards of said indentation (13) with a bent portion (26) to facilitate their extraction from said seats (22).
5. A handle unit as claimed in claim 2, characterised in that said indentation (13) also comprises holes (19) for fixing said internal part (14,16) of said unit (11) to said door (12).
6. A handle unit (11) as claimed in claim 2, characterised in that said elastic fixing means are a pair

of flat springs (25).

7. A handle unit (11) as claimed in claim 2, characterised in that said indentation (13) must be formed by pressing.

Patentansprüche

1. Verfahren zum Zusammenbau einer Griffereinheit (11), bestehend aus:
- einer ersten Stufe, in der das innere Teil (14, 16) einer Griffereinheit (11), welche in einer Stellung entsprechend einer ausgehöhlten Einbuchtung (13) auf einer Tür (12) befestigt wird, wobei das innere Teil (14, 16) elastisch angelenkte Hebel (16) zum Einsetzen durch Schlitze (18) der Einbuchtung (13) umfaßt;
 - einer zweiten Stufe, in der die Hebel (16) angehoben und in geeignete Sitze eingesetzt werden;
 - einer dritten Stufe, in der ein Griff (17) auf den teilweise angehobenen Hebeln (16) befestigt wird; dadurch gekennzeichnet, daß
 - die zweite Stufe außerdem darin besteht, daß profilierte Abstandshaltereinsätze (23) in Sitze (22) eingesetzt werden, welche oberhalb der Sitze der Hebel (16) vorgesehen sind, und
 - einer vierten und letzten Stufe, in welcher der mit den Hebeln (16) fest verbundene Griff (17) angehoben und die Abstandshaltereinsätze (23) entfernt werden, wobei die vierte Stufe zeitlich nach Bedarf aufgeschoben wird.
2. Fahrzeuggriffereinheit (11), welche gemäß dem Verfahren von Anspruch 1 zusammengebaut ist, bei welcher die Einbuchtung (13) ein Paar Hebel (16) umfaßt, welche an ein Basisteil (14) angelenkt sind, wobei die Hebel (16) mit elastischen Befestigungsmitteln (25) und Spannfedern versehen sind, wobei die Einbuchtung (13) einen großen Radius aufweist und Schlitze (18) umfaßt, welche ein Durchtreten eines an den Hebeln (16) durch die elastischen Befestigungsmittel (25) zu befestigenden Griffes (17) ermöglichen, dadurch gekennzeichnet, daß der Griff (17) mit Kappen aus Gummimaterial zu Dichtungszwecken ausgerüstet ist, daß das Basisteil (14) ebenfalls mit einem Paar Sitze (22) zur Aufnahme von zugehörigen Abstandshaltereinsätzen (23) ausgerüstet ist, welche einen Kontakt des Griffes (17) im auf den Hebeln (16) montierten Zustand mit der Fahrzeugschürze (12) verhindern und beliebig entfernbar sind, wobei der Griff (17) gegenüber

den Hebeln (16) zum Einrasten fixiert ist.

3. Griffseinheit (11) nach Anspruch 2, dadurch gekennzeichnet, daß die Abstandshaltereinsätze (23) im wesentlichen von L-förmigem Querschnitt sind, wobei ein Schenkel des L an einen zugehörigen Rücksprung (24), welcher auf den Hebeln (16) vorgesehen ist, eingreift. 5
4. Griffseinheit (11) nach Anspruch 2, dadurch gekennzeichnet, daß die Abstandshaltereinsätze (23) an dem bezüglich der Einbuchtung (13) außen liegenden Ende mit einem gebogenen Bereich (26) angeordnet sind, um ihr Herausziehen aus den Sitzen (22) zu erleichtern. 10
5. Griffseinheit (11) nach Anspruch 2, dadurch gekennzeichnet, daß die Einbuchtung (13) ebenfalls Löcher (19) zum Befestigen des inneren Teiles (14, 16) der Einheit (11) an der Tür (12) umfaßt. 15
6. Griffseinheit (11) nach Anspruch 2, dadurch gekennzeichnet, daß die elastischen Befestigungsmittel ein Paar Blattfedern (25) sind. 20
7. Griffseinheit (11) nach Anspruch 2, dadurch gekennzeichnet, daß die Einbuchtung (13) durch Pressen geformt sein muß. 25

Revendications

1. Méthode d'assemblage d'une unité de poignée (11) consistant en : 35
 - une première étape dans laquelle la partie interne (14, 16) d'une unité de poignée (11) est fixée sur une porte (12) dans une position qui est en correspondance avec un enfoncement perforé (13), ladite partie interne (14, 16) comportant des leviers articulés élastiquement (16) destinés à être insérés à travers des fentes (18) dudit enfoncement (13), 40
 - une deuxième étape dans laquelle lesdits leviers (16) sont relevés et insérés dans des logements appropriés, 45
 - une troisième étape dans laquelle une poignée (17) est montée sur des leviers partiellement relevés (16), caractérisée en ce que 50
 - la deuxième étape consiste également en l'insertion de pièces profilées rapportées d'écartement (23) dans des logements (22) qui sont ménagés au-dessus desdits logements desdits leviers (16), et 55
 - une quatrième et dernière étape dans laquelle ladite poignée (17) solidaire desdits leviers (16) est relevée et lesdites pièces

rapportées d'écartement (23) sont enlevées, ladite quatrième étape étant différée dans le temps selon la nécessité.

2. Unité de poignée de véhicule automobile (11) assemblée conformément à la méthode de la revendication 1, dans laquelle ledit enfoncement (13) comprend une paire de leviers (16) articulés sur un élément de base (14), lesdits leviers (16) étant munis de moyens de fixation élastiques (25) et de ressorts de tension, ledit enfoncement étant d'un grand rayon et comprenant des fentes (18) permettant le passage d'une poignée (17) devant être fixée auxdits leviers (16) par lesdits moyens de fixation élastiques (25), caractérisée en ce que ladite poignée (17) est munie de garnitures de matériau à base de caoutchouc à des fins d'étanchéité, ledit élément de base (14) comportant également une paire de logements (22) destinés à recevoir des pièces rapportées d'écartement respectives (23) constituées de matériau plastique et positionnées sur lesdits leviers (16), lesdites pièces rapportées d'écartement (23) évitant tout contact entre ladite poignée (17), lorsqu'elle est montée sur lesdits leviers (16), et ladite porte de véhicule (12), ces pièces étant librement démontables, ladite poignée (17) étant verrouillée sur lesdits leviers (16) par montage à enclenchement.
3. Unité de poignée (11) selon la revendication 2, caractérisée en ce que lesdites pièces rapportées d'écartement (23) sont de section transversale pratiquement en forme de L, un bras dudit L coopérant avec une dent respective (24) disposée sur lesdits leviers (16).
4. Unité de poignée (11) selon la revendication 2, caractérisée en ce que lesdites pièces rapportées d'écartement (23) comportent, à leur extrémité tournée vers l'extérieur dudit emplacement (13), une partie pliée (26) afin de faciliter leur extraction hors desdits logements (22).
5. Unité de poignée selon la revendication 2, caractérisée en ce que ledit enfoncement (13) comprend également des trous (19) permettant de fixer ladite partie interne (14, 16) de ladite unité (11) sur ladite porte (12).
6. Unité de poignée (11) selon la revendication 2, caractérisée en ce que lesdits moyens de fixation élastiques sont constitués d'une paire de ressorts plats (25).
7. Unité de poignée (11) selon la revendication 2, caractérisée en ce que ledit enfoncement (13) est formé par emboutissage.

Fig.1

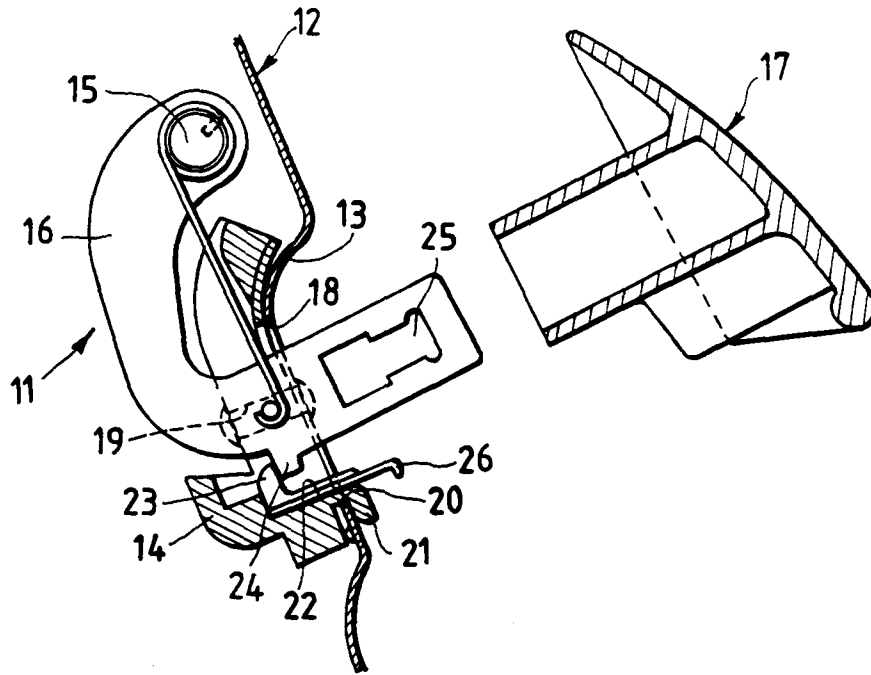


Fig.2

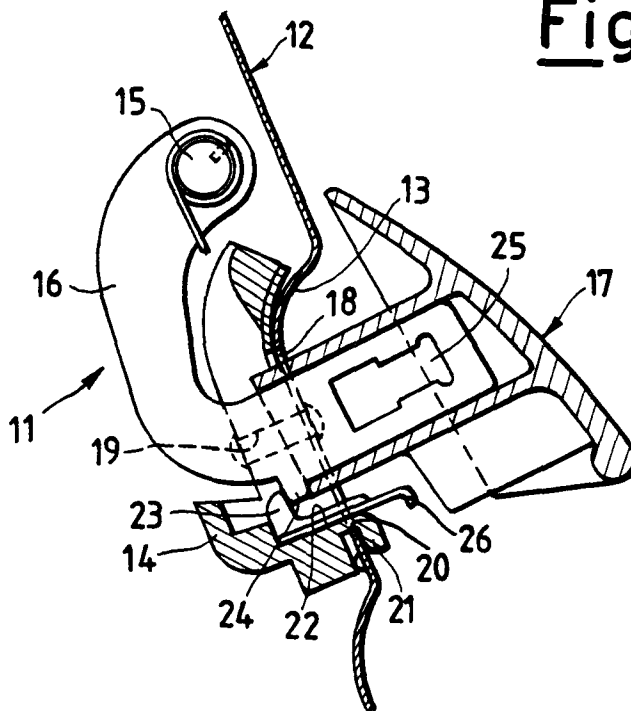


Fig.3

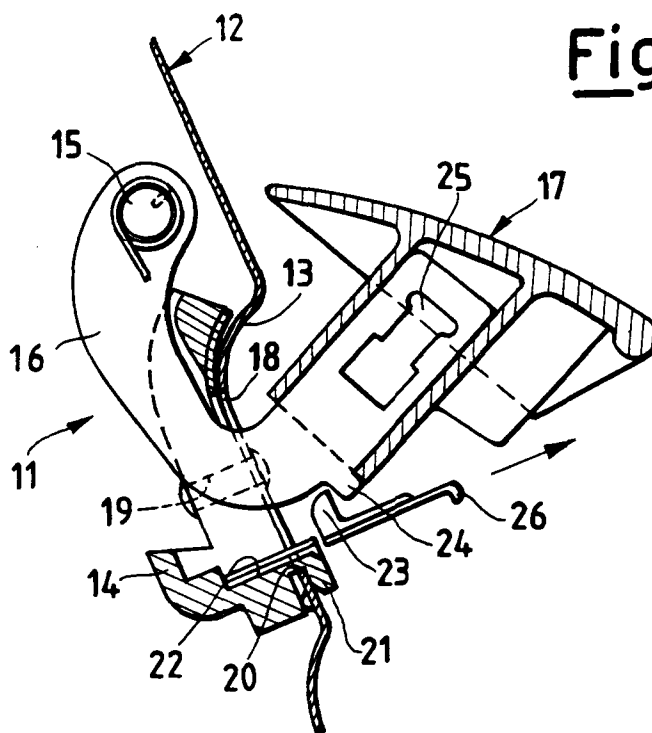


Fig.4

