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(54) **Hinge for hoods and luggage compartment lids of motor vehicles.**

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Description

The invention refers to a hinge for motor vehicles hoods and luggage compartment lids.

The hinges employed in this sector at the moment consist of two parts hinged to each other by means of a riveted pin. The two above elements are then fastened to the framework of the lid and to the motor vehicle by means of screws.

The assembly of this type of hinge usually requires manual intervention as some operations are needed that cannot be carried out by an automated device.

An example of the above devices is shown in document FR-A-1302645 which proposes a hinge for motor vehicle hoods and luggage compartment lids comprising an appendix of the hood or compartment equipped with a V-shaped seat to house a hinge pin of an appendix of the lid.

The purpose of the invention is to propose a particular type of hinge for hoods and for luggage compartment lids, suitable for the assembly on motor vehicles by automated devices (robots, for instance) without the intervention of workers for the hinge fastening. This is a remarkable advantage as motor vehicle manufacturers lately tend to eliminate the greatest part of manual intervention.

In order to reach this and other purposes which will be better understood as the description follows, the invention proposes a hinge for motor vehicles hood and luggage compartment lids which differs from the known devices by the fact that it provides a little plate fitted to the appendix or plate of the hood or compartment in rotating mode on it around the hinge axis; the little plate being equipped with a V-shaped seat, corresponding to the above mentioned one, and of a semicircular slot having an axis coincident with the one of the hinge, in which is engaged a screw which is further screwed in the appendix of the hood or compartment. Further preferred features are defined in claims 2 to 4.

The description of the hinge according to the invention is following and reference is being made to the enclosed drawings:

- Fig. 1 is a section view of the motor vehicle close to the hinge, subject of the invention;
- Fig. 2 is a section view according to the outline II-II of Fig. 1;
- Fig. 3 is a section view according to the outline III-III of Fig. 1;
- Fig. 4 is a section view of the motor vehicle as in Fig. 1 but with elements in different operating conditions.

The hinge subject of the invention consists of a plate or appendix 11 welded to the vehicle body 10 and of a plate or appendix 12 welded to the frame-

work of the lid 13.

On plate 12 a hinge pin 15 is riveted, while on plate 11 a little plate 14 is assembled and constrained to it by a locking screw 16 which is screwed into a hole of the plate 11 through a slot 17 of the plate 14. Furthermore, the latter is secured to the outer edge of plate 11 by its tongues 18 and 19, turned over the outer edge of plate 11.

The plate 14 also foresees outer tongues 20 and 21 turned over the outside of the unit.

Finally, both plate 11 and plate 14 bear a V-shaped seat 22 which is countersunk at the mouth 22 where pin 15 of the plate 12 is inserted in order to realize on it the hinge axis X.

The assembly of the unit will be carried out in the following way: plate 14 will be applied to plate 11 by means of screw 16 which will not be fully screwed so that plate 14 be rotatable around the hinge axis X, until it assumes the position of Fig. 2 where the V-shaped seats 22 of the little plate 14 and of plate 11 coincide.

An adequately preset robot will lift the lid 13 on the side of the assembly line and will position it so that the pin 15 will be inserted, at limit stop, in the seats 22, as illustrated with dash-and-dot line in position A of fig. 1.

A second robot will rotate the little plate 14 acting on its tongues 20 and 21 so as to reach the position of fig. 4 where the screw 16 has reached the opposite limit stop, with respect to Fig. 1, into the slot 17 and the seat 22 of the plate 11 is closed by the sides of the little plate 14. Then, the screw 15 will be locked against the sides of the slot 17 thus avoiding that the little plate 14 effect any rotation.

After the above, the robot will leave the grip of the lid 13 which will be able to rotate to closed position B illustrated in Fig. 1.

Claims

1. Hinge for motor vehicles hood and luggage compartment lids (13) comprising an appendix or plate (11) of the hood or compartment equipped with a V-shaped seat (22) to house a hinge pin (15) of an appendix or plate (12) of the lid (13) characterized in that a little plate (14) is fitted to the appendix (11) of the hood or compartment in rotating mode on it around the hinge axis; the little plate being equipped with a V-shaped seat (22), corresponding to the above mentioned one, and of a semicircular slot (17) having an axis coincident with the one of the hinge, in which is engaged a screw (16) which is further screwed in the appendix (11) of the hood or compartment.
2. Hinge according to claim 1 characterized in

that on the little plate (14) are foreseen tongues (18, 19) turned over the appendix (11) of the hood or compartment that slide on it during the rotation of the little plate (14).

3. Hinge according to claim 1 characterized in that the condition in which the V-shaped seats (22) of the appendix (11) of the hood or compartment and of the little plate (14) coincide, correspond to the condition in which the screw (16) is at limit stop on a side of the slot (17) while the locking condition of the screw (16) on the slot (17) is being realized when the little plate (14) is being rotated to close the V-shaped mouth seat (22) of the appendix (11) of the hood or compartment and the same screw (16) is at stop limit on the opposite side of the slot (17).
4. Hinge according to claim 1 characterized in that on the little plate (14) grasping tongues (20, 21) are foreseen for the positioning of the same plate.

Revendications

1. Charnière pour capots de moteur et coffre à bagages de véhicules (13) comprenant un appendice ou une plaque (11) du capot de moteur ou coffre à bagages équipé d'un siège à V (22) pour loger une cheville de charnière (15) d'un appendice ou d'une plaque (12) du capot (13), caractérisée du fait que une petite plaque (14) est emboîtée sur l'appendice (11) du capot de moteur ou coffre à bagages de façon tournante sur l'appendice susdit autour de l'axe de la charnière; la petite plaque étant équipée d'un siège à V (22), correspondant au siège susdit, et d'une rainure sémicirculaire (17), avant un axe qui coïncide avec l'axe de la charnière et dans laquelle une vis (16) est logée, qui est ultérieurement vissée dans l'appendice (11) du capot de moteur ou coffre à bagages.
2. Charnière selon la revendication 1, caractérisée du fait que sur la petite plaque (14) on a prévu des languettes (18, 19) courbées sur l'appendice (11) du capot de moteur ou coffre à bagages, qui glissent sur l'appendice susdit pendant la rotation de la petite plaque (14).
3. Charnière selon la revendication 1, caractérisée du fait que la condition, dans laquelle les sièges à V (22) de l'appendice (11) du capot de moteur ou coffre à bagages et de la petite plaque (14) coïncident, correspond à la condition dans laquelle la vis (16) va toucher la

butée de fin de course sur un côté de la rainure (17), tandis que la condition de blocage de la vis (16) sur la rainure (17) a lieu lorsque la petite plaque (14) est tournée pour fermer le siège avec ouverture à V (22) de l'appendice (11) du capot de moteur ou coffre à bagages, et la même vis (16) va toucher la butée de fin de course sur le côté opposé de la rainure (17).

4. Charnière selon la revendication 1, caractérisée du fait que sur la petite plaque (14) on a prévu des languettes de prise (20, 21) pour le positionnement de la plaque susdite.

Patentansprüche

1. Scharnier für Motor- und Kofferraumdeckel von Kraftfahrzeugen (13) bestehend aus einem Ansatz oder einer Platte (11) des Motor- oder Kofferraumdeckels, der einen V-förmigen Sitz (22) besitzt, um einen Scharnierstift (15) eines Ansatzes oder einer Platte (12) des Deckels (13) aufzunehmen, dadurch gekennzeichnet, daß eine kleine Platte (14) dem Ansatz (11) des Motor- oder Kofferraumdeckels drehbar auf besagten Ansatz um die Scharnierachse angepasst ist; wobei die kleine Platte einen besagtem Sitz entsprechenden V-förmigen Sitz (22) und eine halbkreisförmige Nut (17) besitzt, deren Achse mit der Scharnierachse zusammenfällt und in der eine Schraube (16) Aufnahme findet, die weiter im Ansatz (11) des Motor- oder Kofferraumdeckels eingeschraubt ist.
2. Scharnier nach Anspruch 1 dadurch gekennzeichnet, daß auf der kleinen Platte (14) Lappen (18, 19) vorgesehen sind, die auf dem Ansatz (11) des Motor- oder Kofferraumdeckels gebogen sind und die während der Drehung der kleinen Platte (14) auf besagten Ansatz gleiten.
3. Scharnier nach Anspruch 1 dadurch gekennzeichnet, daß der Zustand, in dem die V-förmigen Sitze (22) des Ansatzes (11) des Motor- oder Kofferraumdeckels und der kleinen Platte (14) zusammenfallen, dem Zustand entspricht, in dem die Schraube (16) den Endanschlag auf einer Seite der Nut (17) berührt, während der Verriegelungszustand der Schraube (16) auf der Nut (17) erfolgt, wenn man die kleine Platte (14) dreht, um den Sitz mit V-förmiger Öffnung (22) des Ansatzes (11) des Motor- oder Kofferraumdeckels zu schließen, und dieselbe Schraube (16) berührt den Endanschlag auf der entgegengesetzten Seite der Nut (17).

4. Scharnier nach Anspruch 1 dadurch gekennzeichnet, daß auf der kleinen Platte (14) Greiflappen (20, 21) zum Positionieren besagter Platte vorgesehen sind.

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Fig. 1

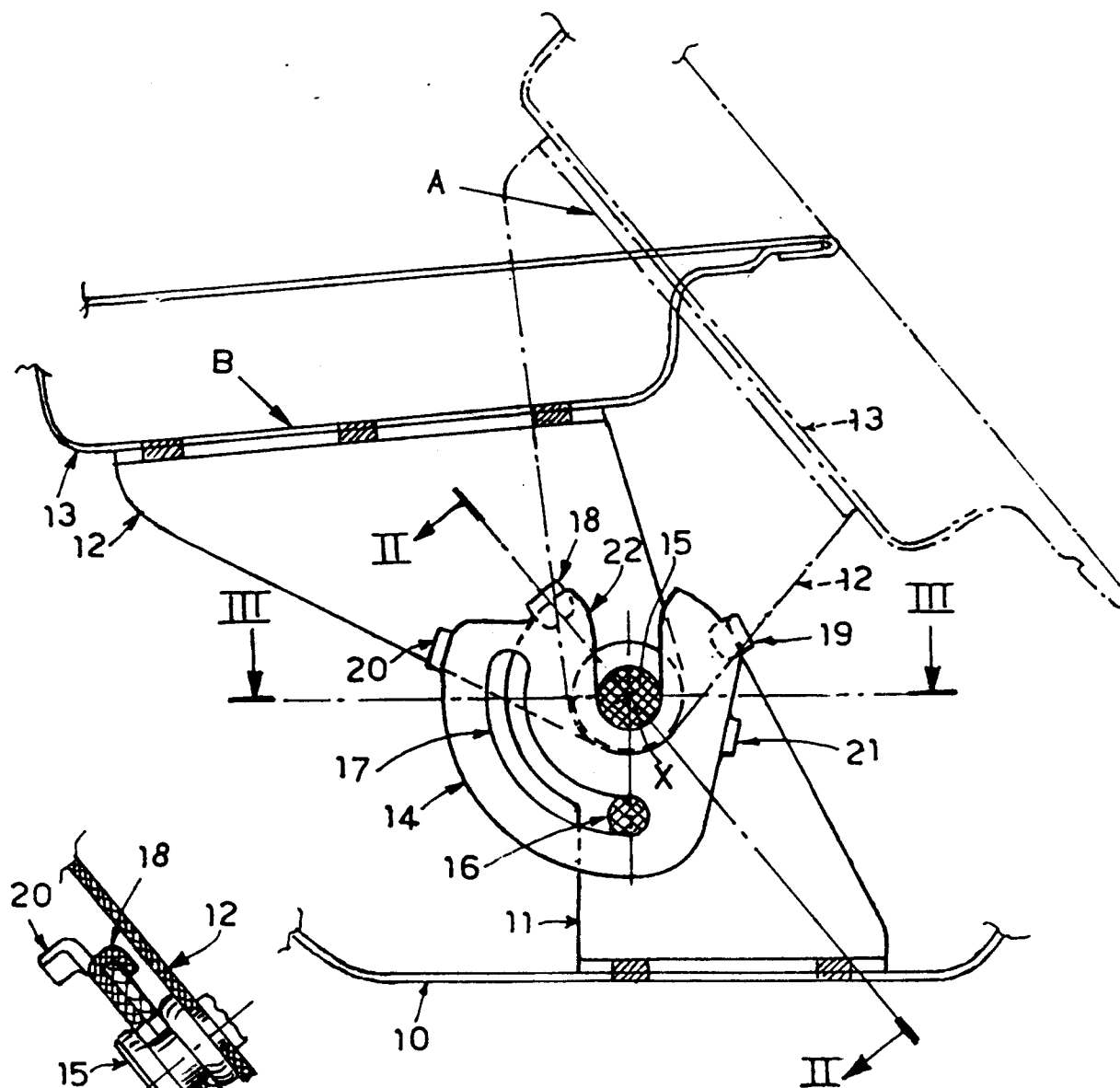


Fig.2

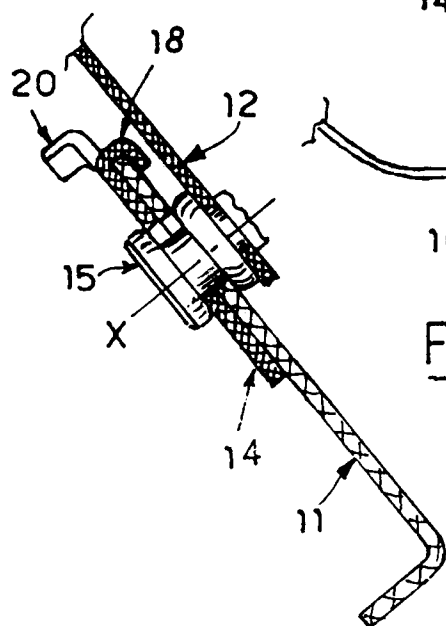


Fig.3

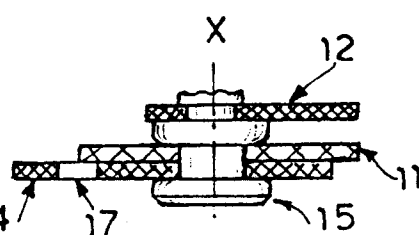


Fig.4

