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(54) **Safety lock for bonnets in motor-vehicles**

Sicherheitsschloss für Motorhauben von Kraftfahrzeugen

Serrure de sécurité pour capots de véhicules automobiles

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DE-U- 9 308 635

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Description

[0001] The present invention refers to a combination of bonnet and bodywork for a including a safety lock for a motor vehicle.

[0002] Safety locks for bonnets are provided with a mechanism that allows the bonnet to be hooked in two different positions, a completely closed and locked position and a partially open position which allows the user to put his/her hand under the bonnet in order to lift it completely, after releasing the lock.

[0003] In order to disengage the bonnet completely from the lock, this one presents a lever generally hidden under the bonnet, next to its edge. WO-A-9 826 144 discloses a combination according to the preamble of claim 1. DE-A-4 446 078 discloses a different example.

[0004] However, it is not very practical to locate the lever in that position because it happens sometimes that it becomes necessary to look for the lever all along the edge of the bonnet since its location is not at all indicated outside.

[0005] It is an object of the present invention to provide a combination of bonnet and bodywork including a safety lock provided with a release lever which is clearly visible to the user while he/she is releasing the bonnet and which is mounted on the bonnet, that is, on the mobile part of the lock, so that no transmission is needed to operate the fixed part of the lock mounted on the crosspiece of the radiator.

[0006] Said object is achieved by means of a combination of bonnet and bodywork including a safety lock for motor-vehicle presenting the characteristics set forth in claim 1.

[0007] Additional characteristics and advantages will become clear from the following description, referring to the appended drawings provided as non-restrictive examples and in which:

figure 1 is a perspective view of a lock for the bonnet of a motor-vehicle in the closed position;
figure 2 is a perspective view of the lock in figure 2 in a partially open position, the safety hook being positioned, and
figure 3 is a perspective view of the lock in figure 1 with the safety lock in the open position.

[0008] With reference to the figures, reference number 1 indicates a safety lock for a bonnet of a motor-vehicle in general. A first main part of the lock is fixed in a known way by means of a bracket 2, inside the motor compartment on the supporting crosspiece of the radiator. It consists of said bracket 2 to which a hook 4 is rotatably connected by means of a pivot 3, the hook consisting of a first main hook 4a and a second safety hook 4b. Besides, the hook 4 is provided with a push finger 5 and can rotate from a full engagement and locking position of the bonnet to a full release position when the bonnet itself can be opened, passing through a so-called intermediate safety position, in which the bonnet is kept some 25 mm higher than the front crosspiece of the bodywork.

[0009] In the engagement and locking position shown in figure 1, the hook 4 is rabbeted against a stop 5a made on the bracket 2, being kept in this position by means of an engagement (not shown), against the action of an elastic element not shown. Said engagement can be operated from the interior compartment, in a known way, by means of a tie rod 6 so that the hook 4 is unlocked and the wire rod 8, which is integral with the bonnet (not shown), is released.

[0010] The second mobile part of the lock is mounted on the bonnet. This part consists of a curved lever 13 the outline of which is basically S-shaped and which is rotatably mounted on a pivot 10, by means of a bolted bracket 12. Said lever is controlled by an elastic element 14 so that, when the bonnet is closed, the lever is kept rotated into a predefined position against a stop consisting of a metal rod iron integral with the bracket 2.

[0011] One of the ends of the lever 13 is provided with a handle 16 while the other end is provided with a push peak 17. Shape and dimensions of the lever are such that when it is in its rest position against the stop 15, it remains disguised in the outline of the motor-vehicle, among the bars of the grill in the case here shown, and its push peak 17 is basically on the vertical of the push finger 5. The shape and dimensions of said lever will obviously be adapted each time to the outline of the motor-vehicle where the safety lock according to the invention is to be placed.

[0012] The safety lock works as follows.

[0013] When the hook 4 is released by means of the cable 6, it rotates counterclockwise and releases the first hook 4a from the wire rod 8 thus allowing the edge of the bonnet to get away from the front crosspiece. The two parts of the lock get then into the position shown in figure 2, where the wire rod 8 is engaged to the second hook 4b and the push peak 17 of the lever 13 is resting on the push finger 5, as a consequence of both the counterclockwise rotation of the hook 4 and the counterclockwise rotation of the lever 13, which is no longer retained by the stop 15, which is lowered due to the fact that the bonnet has been lifted. The rotation of the lever 13 makes the handle 16 come out from the outline of the motor-vehicle so that the user can operate it.

[0014] An additional counterclockwise rotation of the lever 13 achieved by means of the handle 16 (figure 3), makes the hook 4 rotate clockwise, since the peak 17 rests on the finger 5. Said rotation releases completely the wire rod 8 from the safety hook 4b and allows the bonnet to be lifted.

Claims

1. A combination of bonnet and bodywork including a safety lock for a motor vehicle, whereby the safety

lock includes a main hook (4) provided with a first locking hook (4a) and a second safety hook (4b) mounted on a bracket (2) fixed to the bodywork, the main hook (4) being adapted to rotate from a position in which it engages and locks the bonnet and a position in which the bonnet is completely released, passing through a so-called intermediate safety position in which said bonnet is disengaged from the bodywork and kept by the second hook (4b), said safety lock is provided with a lever (13) to pass from the safety position to the complete release position **characterised in that** said hook (4) is operated by means of said lever (13) rotatably supported on the bonnet and adapted to push a push-finger (5) integral with said hook (4) in order to pass from the safety position to the complete release position.

2. Combination as claimed in claim 1 **characterised in that** an elastic element (14) keeps the lever (13), at rest and with the bonnet locked, resting on a stop (15) integral with the mounting bracket (2) of said hook (4).

3. Combination as claimed in claim 1 and 2 **characterised in that** the shape and dimensions of the lever (13) are such that when it is at rest it is part of the outline of the motor-vehicle.

4. Combination as claimed in claim 1 and 2 **characterised in that** the shape and dimensions of the lever (13) are such that when the hook (4) is in its safety position, one of its ends (16) protrudes from the outline of the motor-vehicle.

Patentansprüche

1. Verbindung aus Motorhaube und Karosserie, welche ein Sicherheitsschloss umfasst, für ein Kraftfahrzeug, wobei das Sicherheitsschloss umfasst: einen ersten Haupthaken (4), welcher mit einem ersten Verriegelungshaken (4a) und einem zweiten Sicherheitshaken (4b) ausgestattet ist, welcher auf einer Tragstütze (2) angebracht ist, die ihrerseits an der Karosserie befestigt ist, wobei der Haupthaken (4) so ausgelegt ist, um von einer Position, in der er die Motorhaube in Eingriff hat und diese verriegelt, in eine Position, in welcher die Motorhaube vollständig freigegeben ist, zu drehen, wobei er dabei eine so genannte zwischengeschaltete Sicherheitsposition durchschreitet, in welcher die Motorhaube aus dem Eingriff mit der Karosserie gelangt und durch einen zweiten Haken (4b) gehalten wird, wobei das Sicherheitsschloss mit einem Hebel (13) bereit gestellt ist, um von der Sicherheitsposition in die vollständig Freigabeposition überzugehen, **dadurch gekennzeichnet, dass** der Haken (4) mittels des Hebels (13) betätigt wird, welcher drehbar an der Motorhaube angebracht ist und so ausgelegt ist, um einen Schiebefinger (5), einstückig mit dem Haken (4), zu verschieben, um von der Sicherheitsposition in die vollständig freigegeben Position zu gelangen.

2. Verbindung nach Anspruch 1, **dadurch gekennzeichnet, dass** ein elastisches Element (14) den Hebel (13) in Ruhe und mit der Motorhaube verriegelt hält, wobei er auf einem Anschlag (15) ruht, welcher einstückig mit der Befestigungstragstütze (2) des Hakens (4) ausgebildet ist.

3. Verbindung nach Anspruch 1 und 2, **dadurch gekennzeichnet, dass** die Gestalt und die Abmessungen des Hebels (13) so gewählt sind, dass er, wenn er sich in Ruheposition befindet, Teil des Umrisses des Kraftfahrzeugs ist.

4. Verbindung nach Anspruch 1 und 2, **dadurch gekennzeichnet, dass** die Gestalt und die Abmessungen des Hebels (13) so gewählt sind, dass, wenn der Haken (4) sich in seiner Sicherheitsposition befindet, eines seiner Enden (16) aus dem Umriss des Kraftfahrzeugs vorragt.

Revendications

1. Combinaison d'un capot et d'une carrosserie incluant une serrure de sécurité pour un véhicule à moteur, dans laquelle la serrure de sécurité inclut un crochet principal (4) comprenant un premier crochet de verrouillage (4a) et un deuxième crochet de sécurité (4b) montés sur une ferrure (2) fixée à la carrosserie, le crochet principal (4) étant apte à tourner entre une position dans laquelle il est en prise avec le capot et verrouille celui-ci ,et une position dans laquelle le capot est totalement dégagé, en passant par une position dite intermédiaire de sécurité, dans laquelle ledit capot est dégagé de la carrosserie mais est maintenu par le deuxième crochet (4b), ladite serrure de sécurité comportant un levier (13) pour passer de la position de sécurité à la position totalement dégagée, **caractérisée en ce que** ledit crochet (4) est manoeuvré au moyen dudit levier (13) supporté à rotation sur le capot et apte à pousser un doigt poussoir (5) d'un seul tenant avec ledit crochet (4) afin de passer de la position de sécurité à la position totalement dégagée.

2. Combinaison selon la revendication 1, **caractérisée en ce qu'**un élément élastique (14) maintient le levier (13), quand il est en position de repos et que le capot est verrouillé, pour qu'il repose sur un arrêt (15) d'un seul tenant avec la ferrure de montage (2) dudit crochet (4).

3. Combinaison selon la revendication 1 ou 2, **caractérisée en ce que** la configuration et les dimensions du levier (13) sont telles qu'il fait partie du profil du véhicule à moteur lorsqu'il est en position de repos.

4. Combinaison selon la revendication 1 ou 2, **caractérisée en ce que** la configuration et les dimensions du levier (13) sont telles que l'une (16) des extrémités du crochet (4) fait saillie du profil du véhicule à moteur lorsque le crochet est dans sa position de sécurité.

Fig.1

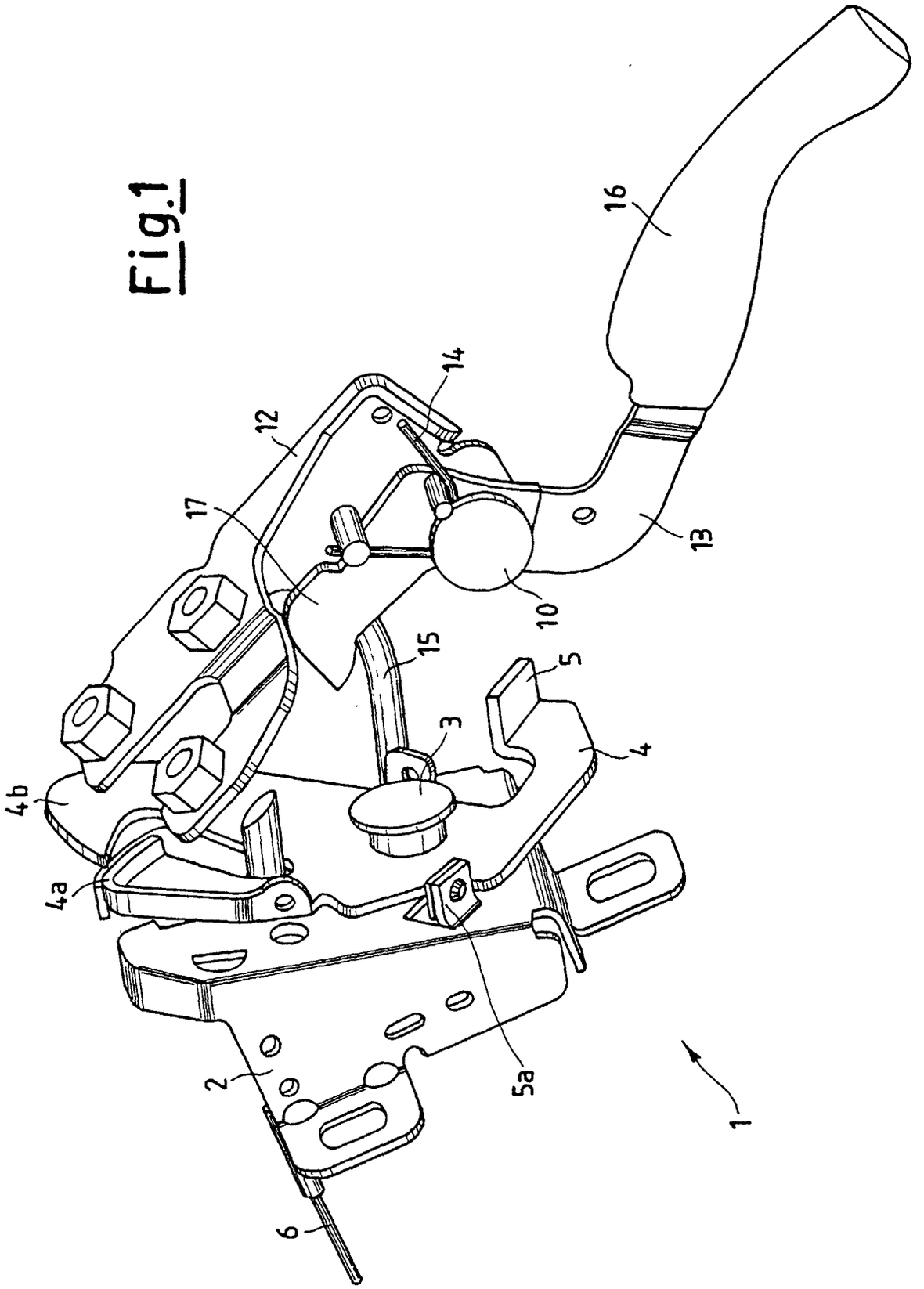


Fig.2

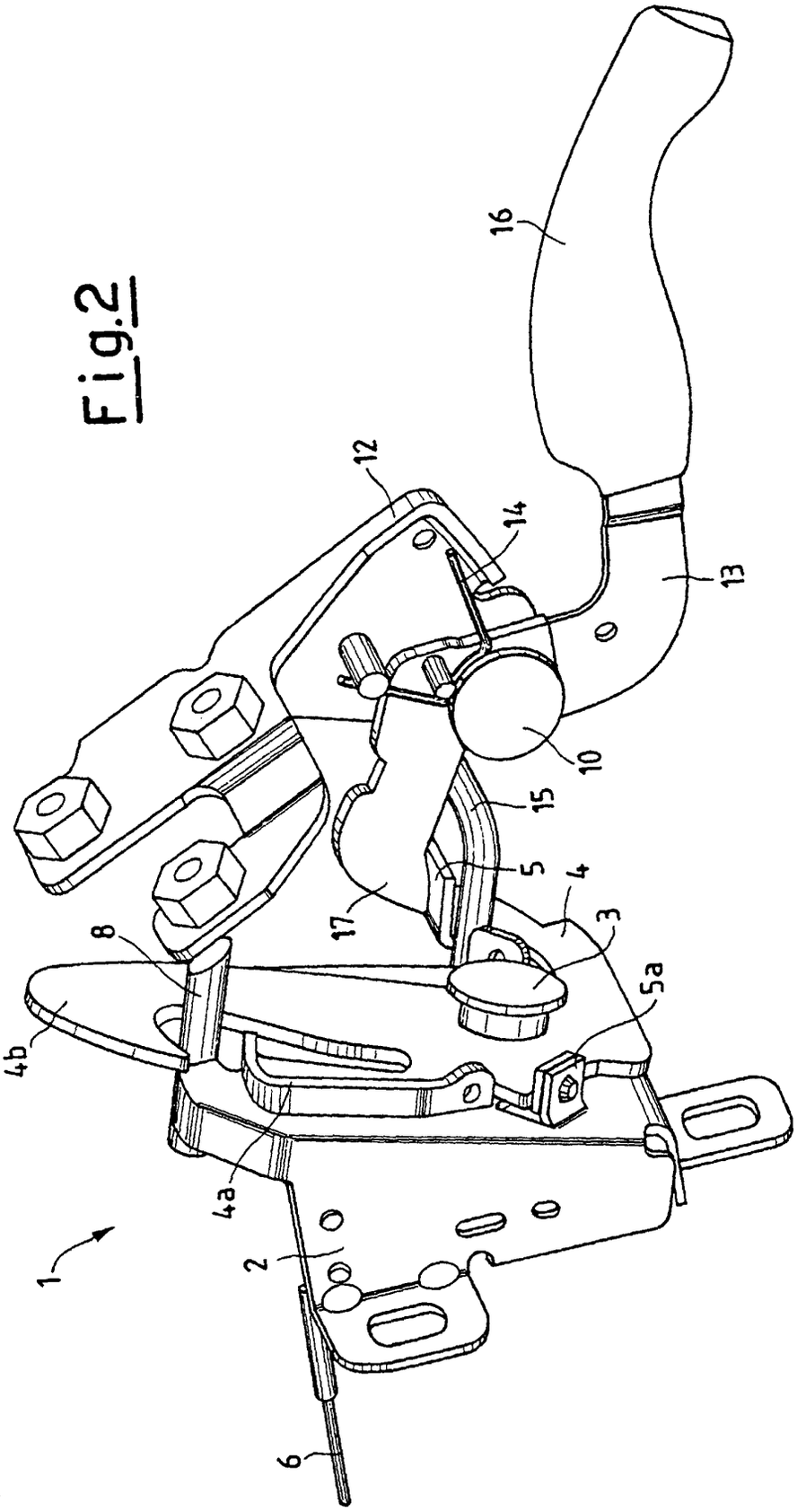


Fig.3

