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(72) Inventor: **Qualters, Michael Grenville**
Walsall, West Midlands (GB)

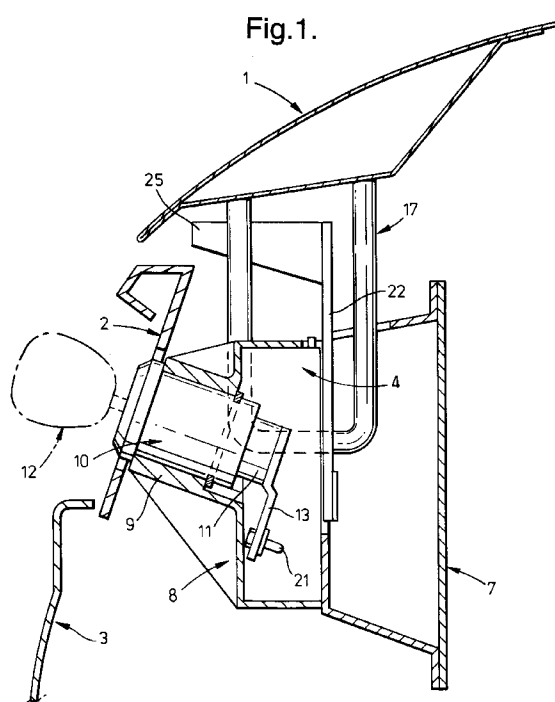
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(74) Representative: **Obee, Robert William**
Fleet, Hampshire GU13 8BU (GB)

(71) Applicant:
C.E. MARSHALL (WOLVERHAMPTON) LIMITED
Willenhall, West Midlands WV13 1QW (GB)

(54) Locking arrangement

(57) The locking arrangement for the hood 1 of a motor vehicle includes an assembly mounted under the hood with a primary latch member 14 which normally retains the hood and a detent lever 18 which normally retains the latch member. A cylinder lock 10 is also included, with its keyway accessible through a fascia member 2 at the front of the vehicle. The plug 11 of the cylinder is connected through a drive rod 21 to the detent lever 18 so that the hood can be released by key operation from outside the vehicle.



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Description

The present invention relates to locking arrangements for automobiles or other motor vehicles and more particularly to an arrangement for locking the bonnet or hood (the latter term will be used in this specification) which closes the engine compartment of such a vehicle.

Automobile hoods are usually held down by a primary latch which, for reasons of security, can only be released from inside the vehicle, e.g. via a cable mechanism. It is usual also to incorporate a secondary or safety latch to prevent the hood from flying open in the event of the failure or inadvertent release of the primary latch while the vehicle is in motion, and which can itself be released from outside the vehicle after the primary latch has been released. It is, however, considered desirable for the owner of a vehicle or other authorised person to be able to release the hood from outside the vehicle while at the same time providing security against access to the engine compartment by unauthorised persons.

The present invention addresses this problem and accordingly in a first aspect resides in an assembly adapted to be mounted under the hood of a motor vehicle; the assembly comprising a key-recognition mechanism and a latch member; in use the key-recognition mechanism being accessible for insertion of a proper key from outside the vehicle and the latch member serving to retain the hood in a closed condition; and the key-recognition mechanism and latch member being so associated that manipulation of a proper key within the key-recognition mechanism causes or enables movement of the latch member to a position in which it releases the hood.

The invention also resides in a motor vehicle having an engine compartment normally closed by a hood; and an assembly according to the first aspect of the invention mounted under said hood with its said key-recognition mechanism being accessible for insertion of a proper key from outside the vehicle and its said latch member serving to retain the hood in a closed condition.

A preferred embodiment of the invention will now be more particularly described, by way of example, with reference to the accompanying drawings, in which:-

Figure 1 is a part-sectional side view of an assembly according to the invention as installed in a vehicle;

Figure 2 is a part-sectional rear view of the assembly of Figure 1;

Figure 3 is a part-sectional front view of the assembly of Figures 1 and 2, shown in the locking condition; and

Figure 4 is a part-sectional front view of the assembly of Figures 1 and 2, shown in a partially released condition.

Figure 1 shows a preferred embodiment of an as-

sembly according to the invention as installed in the forward portion of an automobile engine compartment beneath a hinged hood 1 and behind a decorative grille or other facia member 2 which is itself located above the vehicle's front bumper (fender) 3. This assembly comprises a first housing portion with rear flanges 5 (Figures 2 to 4) provided with mounting holes 6 for fixing the assembly to a structural cross-member 7 of the vehicle. A second housing portion 8 is riveted to the first, and at its forward end the portion 8 is formed with a tubular extension 9 in which is mounted a key-recognition mechanism in the form of a conventional cylinder 10. The cylinder 10 may incorporate any known disc, pin or other tumbler arrangement by which a rotatable plug 11 is normally locked within the cylinder but can be released for rotation by insertion of a properly cut key 12. The entrance to the keyway of the cylinder is located within an aperture in the facia member 2. At its distal end the plug 11 carries a lever 13.

A primary latch member 14 is mounted on a pivot 15 in the housing portion 4 and is biased in the clockwise direction (as viewed in Figures 3 and 4) by a spring 16. As shown in Figure 3 this latch member normally serves to hold down the hood 1 by trapping a U-shaped striker bar 17 which is rigidly attached to the underside of the hood. The latch member 14 is itself held in this position by a detent lever 18 pivoted at 19 and biased in the clockwise direction (as viewed in Figures 3 and 4) by a spring 20. At its lower end the detent lever 18 is connected to one end of a drive rod 21 which extends transversely through the housing 4/8 and is connected at the other end to the lever 13 (Figures 1 and 2).

In order to release the hood 1 a proper key 12 is inserted into the cylinder 10 and turned to rotate the plug 11 and lever 13 in the direction which is clockwise as viewed in Figure 2. This has the effect of drawing the rod 21 to the right as viewed in Figure 3 and pivoting the detent lever 18 against the bias of its spring 20, which in turn releases the latch member 14 to pivot upwards under the bias of its spring 16. The hood is therefore freed to pop up through a short distance under the action of a spring (not shown) provided for the purpose. This condition is shown in Figure 4. The cylinder plug 11 can be turned back and the key removed, allowing the detent lever 18 to pivot back until it abuts the released latch member 14. In this condition further lifting of the hood is still dependent on the release of a secondary or safety latch member 22 which is pivoted at 23 (Figure 2) and biased in the clockwise direction (as viewed in Figures 3 and 4) by a spring 24. This safety latch member is equipped with a tab 25 which can be reached under the hood when the latter has been released by the primary latch member 13 and can be manipulated to pivot the safety latch member clear of the striker bar 17.

To secure the hood once more it is allowed to close to re-engage the striker bar 17 under the safety latch member 22 and is then pressed down against its spring so that the mechanism is reset to the condition shown in

Figure 3. There is sufficient lost motion in the connection between the detent lever 18 and the drive rod 21 to allow the detent lever to reset under the bias of its spring 20 and without requiring key operation.

If desired, a cable arrangement can also be connected to the detent lever 18 by which the hood 1 can be released from within the passenger compartment of the vehicle, without the use of a key.

6. A motor vehicle having an engine compartment normally closed by a hood (1); and an assembly according to any preceding claim mounted under said hood (1) with its said key-recognition mechanism (10) being accessible for insertion of a proper key (12) from outside the vehicle and its said latch member (14) serving to retain the hood (1) in a closed condition.

Claims

1. An assembly adapted to be mounted under the hood (1) of a motor vehicle; the assembly comprising a key-recognition mechanism (10) and a latch member (14); in use the key-recognition mechanism (10) being accessible for insertion of a proper key (12) from outside the vehicle and the latch member (14) serving to retain the hood (1) in a closed condition; and the key-recognition mechanism (10) and latch member (14) being so associated that manipulation of a proper key (12) within the key-recognition mechanism (10) causes or enables movement of the latch member (14) to a position in which it releases the hood (1).
2. An assembly according to claim 1 wherein the latch member (14) is biased (16) towards a position in which it is adapted to release the hood (1) but is normally held, by a detent member (18), in the position in which it is adapted to retain the hood (1); the detent member (18) being biased (20) towards the position in which it holds the latch member (14) as aforesaid but being releasable from that position by manipulation of a proper key (12) within the key-recognition mechanism (10).
3. An assembly according to claim 2 wherein the latch member (14) and detent member (18) are pivoted on generally parallel axes (16,19) and the key-recognition mechanism comprises a cylinder with a plug (11) which is rotatable on an axis within a plane generally parallel to the axes (16,19) of the latch member and detent member (18).
4. An assembly according to claim 3 wherein said plug (11) is connected to the detent member (18) via a drive rod (21) which in use extends generally transversely of the vehicle.
5. An assembly according to any preceding claim further comprising a secondary latch member (25) adapted to prevent further opening of the hood (1) when released by the first-mentioned latch (14) member and which in use is manually accessible from outside the vehicle when the hood (1) is released by the first-mentioned latch member (14).

Fig.1.

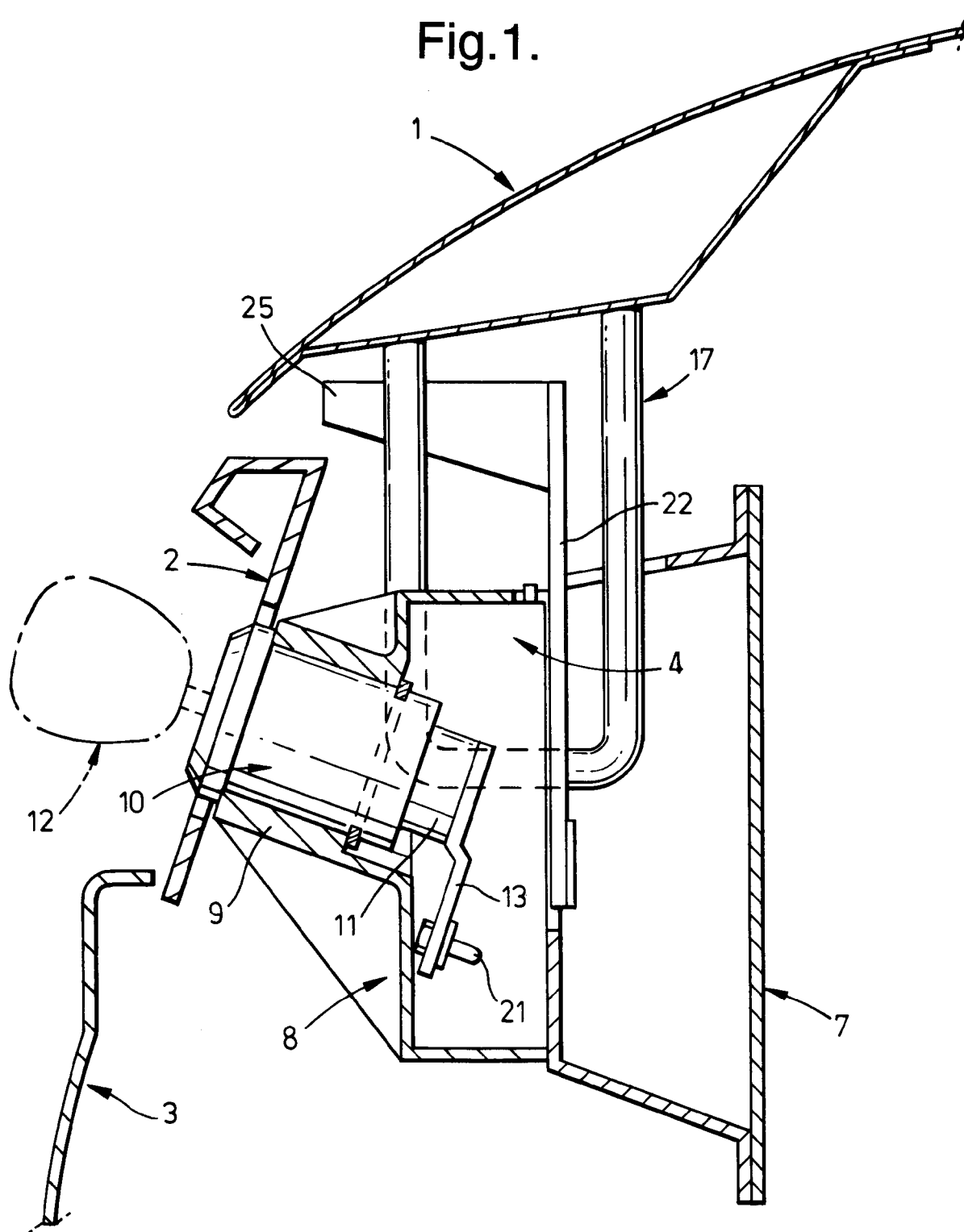


Fig.2.

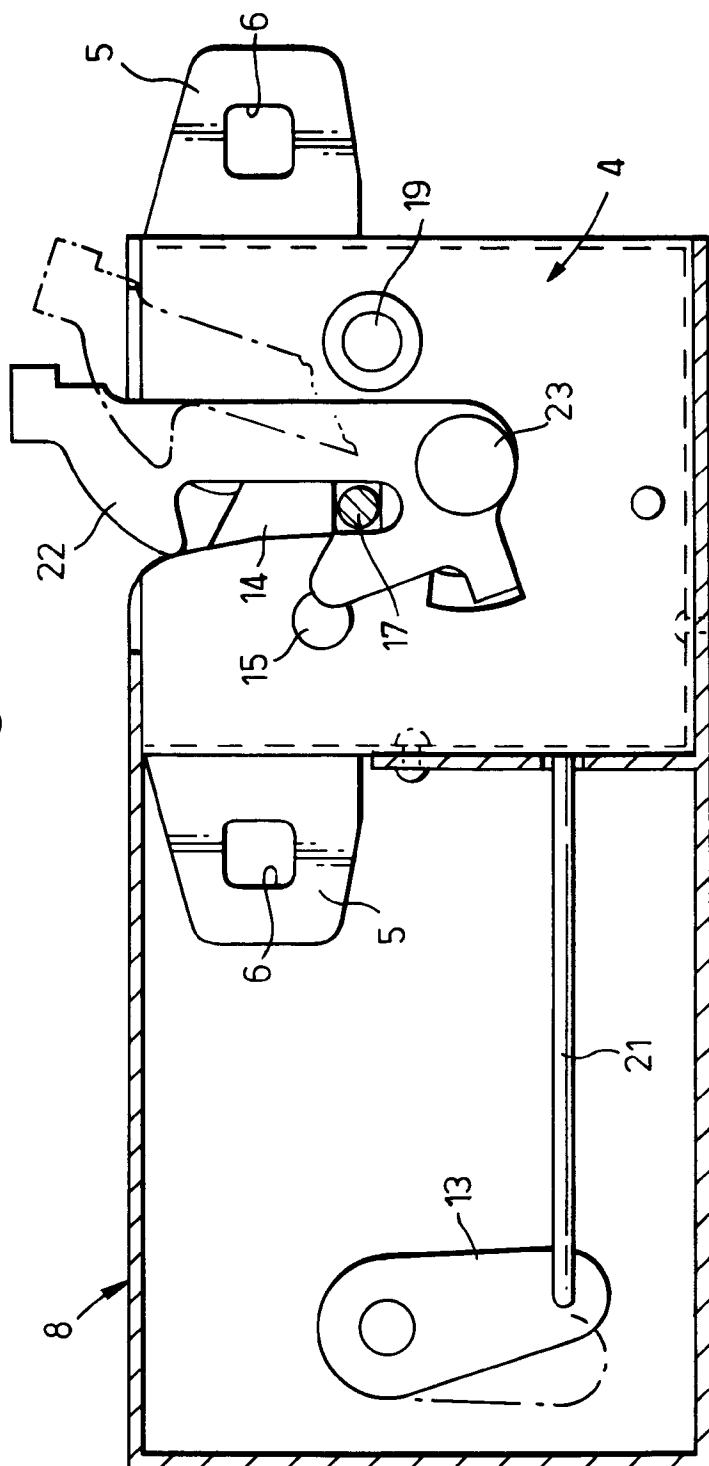


Fig.3.

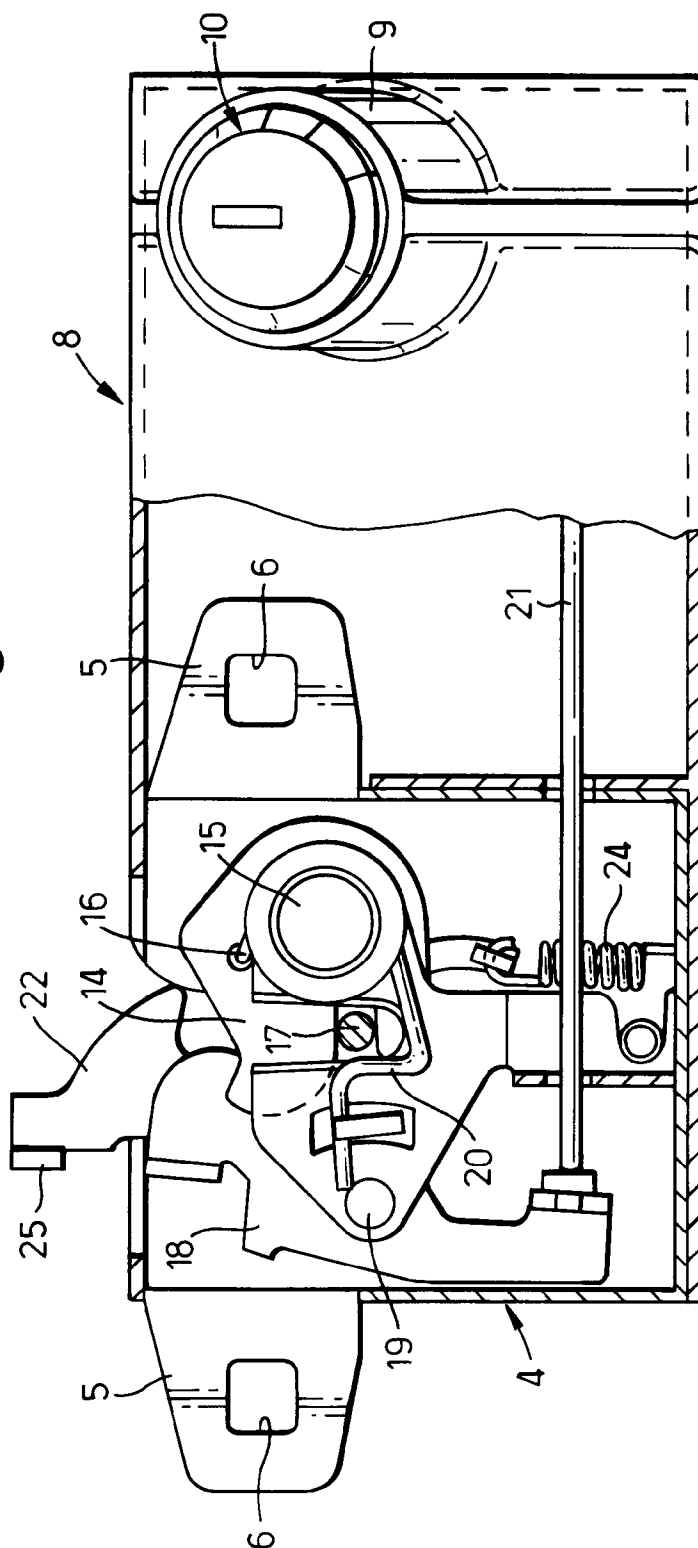
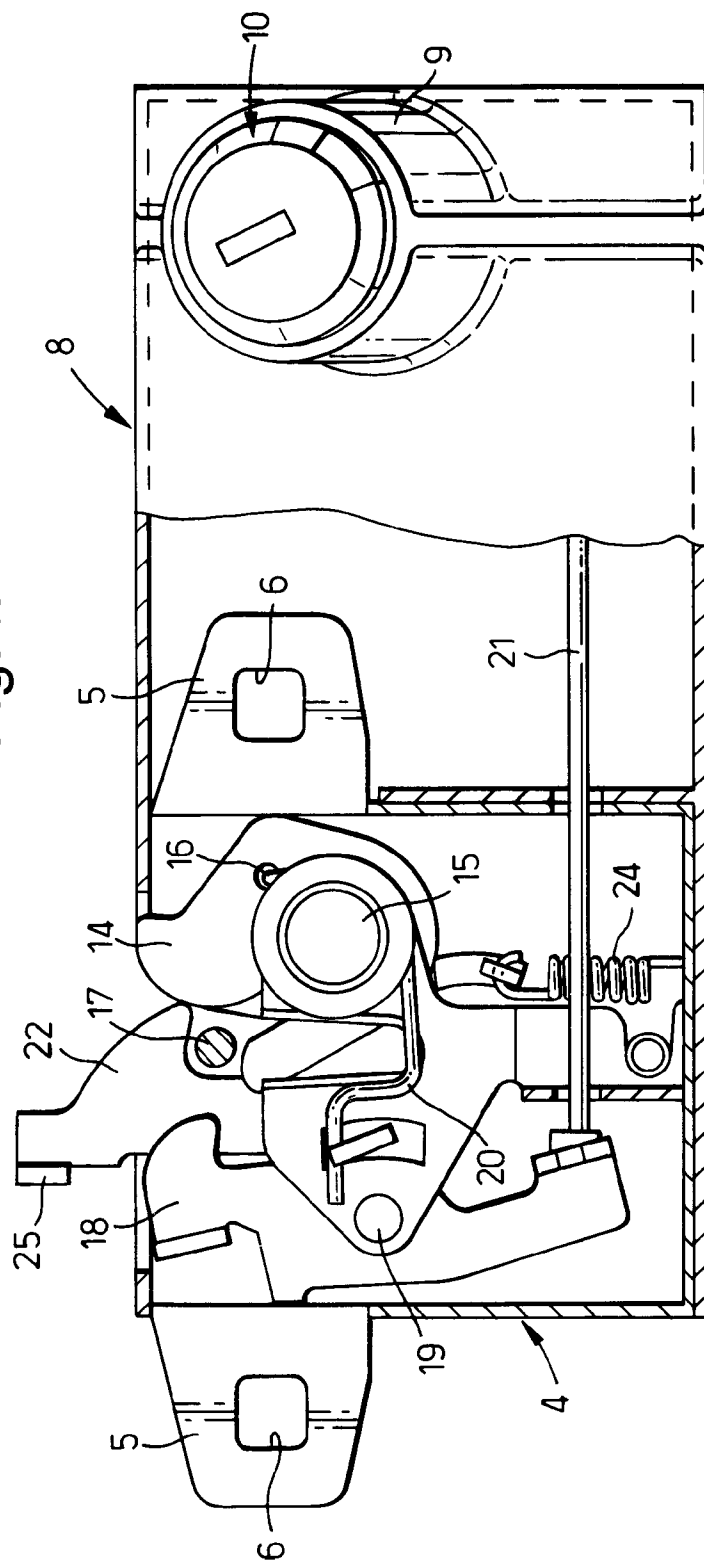


Fig.4.





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EUROPEAN SEARCH REPORT

Application Number
EP 95 30 5072

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.6)
X	DE-A-37 26 783 (PORSCHÉ AG) 23 February 1989	1-4,6	E05B65/19
Y	* column 2, line 25 - column 5, line 60; figures *	5	
X	DE-A-38 36 771 (DAIMLER BENZ AG ;BOCKLENBERG & MOTTE BOMORO (DE)) 18 January 1990	1,2,4,5	
A	* column 1, line 3 - column 2, line 40; figure *	3	
X	FR-A-2 093 329 (A.DUBOIS ET CIE.) 28 January 1972 * page 1, line 1 - line 27 * * page 1, line 36 - page 4, line 19; figures *	1-3,6	
X	FR-A-2 404 091 (DAIMLER BENZ AG) 20 April 1979	1,2,6	
A	* page 1, paragraph 1 * * page 2, line 26 - page 4, line 22; figures *	3,4	
Y	DE-C-947 440 (FA.FRITZ KEIPER)	5	E05B
A	* page 2, line 68 - page 3, line 99; figures *	1,4,6	
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 27 October 1995	Examiner Henkes, R
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