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(54) Window stay.

(57) Window stay comprising an elongated hood (1) that can be hingedly fixed at one end to a frame, such as e.g. a window frame, and that is coupled hingedly at the other end with the one end of a tiltable elongated member (2) that is shorter than the hood and that can be hingedly fixed with its other end to a window casing, an auxiliary element pivotably connected to the tiltable member enabling a semi-open position of the frame with respect to the window casing, whereas in the closed position of the window handle, the hood and the tiltable member project into one another and in the open position the tiltable member is tilted to the inline position with the hood. According to the invention, the auxiliary element is a rocker guide (3) that is rockably connected adjacent to said other end of the hood and that comprises a slot through which said one end of the tiltable member is tiltably and slidably coupled with the rocker guide, so that the tiltable member is a tiltable slide that is only connected to the hood by means of the rocker guide and that with said other end is directly hingedly coupled to the window casing.

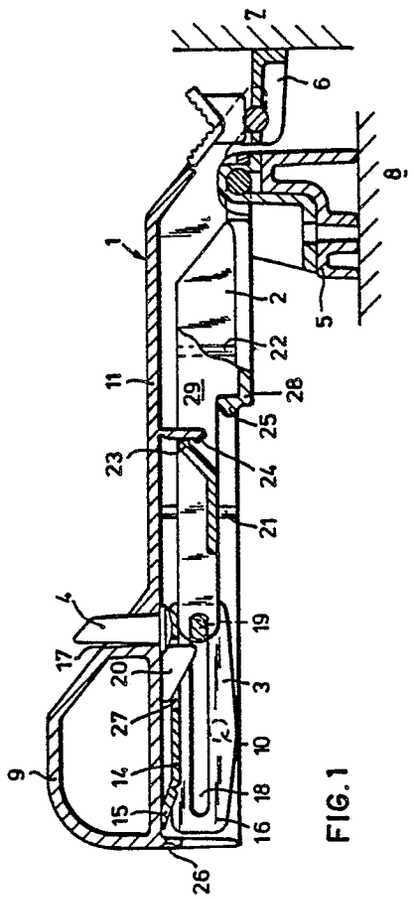

FIG. 1

EP 0 304 135 A1

Window handle

The invention relates to a window handle, comprising an elongated hood that can be hingedly fixed at one end to a frame, such as e.g. a window frame, and that is coupled hingedly at the other end with the one end of a tiltable elongated member that is shorter than the hood and that can be hingedly fixed with its other end to a window casing, an auxiliary element pivotably connected to the tiltable member enabling a semi-open position of the frame with respect to the window casing, whereas in the closed position of the window handle, the hood and the tiltable member project into one another and in the open position the tiltable member is tilted to the in-line position with the hood.

Such a window handle is known from Dutch patent specification 144,364, in which the hood, the tiltable member and the auxiliary element are made at least substantially of metal and in which the auxiliary element is pivotably connected between the window casing and said other end of the tiltable member.

The chief aim of the invention is a similar window handle, made, however, of synthetic material and thus being less expensive than a metal window handle. Metal, however, provides the possibility of pivot connections that are sufficiently tight to prevent too easily pivoting of the parts of the window handle with respect to one another. Therefore a window handle of synthetic material should be of different construction than a metal window handle.

For that purpose, the invented window handle is substantially characterized in that the auxiliary element is a rocker guide that is rockably connected adjacent to said other end of the hood and that comprises a slot through which said one end of the tiltable member is tiltably and slidably coupled with the rocker guide, so that the tiltable member is a tiltable slide that is only connected to the hood by means of the rocker guide and that with said other end is directly hingedly coupled to the window casing.

A few possible extra features of the invented window handle have been indicated in the pertaining sub claims.

The invention will be further elucidated in the following description of an embodiment that is shown in the pertaining drawing. In this drawing:

figure 1 is a longitudinal section of the example of the invented window handle in the closed position;

figure 2 is a section as in figure 1, but in the semi-open position or ventilation position;

figure 3 is a section as in figure 1, but in the open position.

The example of the invented window handle that is discussed hereafter substantially comprises a hood 1, a tiltable slide 2, a rocker guide 3, a button 4, a window casing base 5 and a window frame base 6. In this embodiment all these parts are preferably made of synthetic material so as to reduce production prices. The casing base 5 is connected to the window casing 8 and the window base 6 is connected to the window frame 7, the casing base and the window base not constituting essential parts of the inventive notion, so that they will not be further discussed here.

According to all figures, the hood 1 is pivotably connected with its right-hand end to the window base 6 and comprises, near the other end, a handle 9 and a bearing holes 10. In cross-section the hood is substantially reversed U-shaped with a ceiling 11 and two walls 12 and 13, each wall comprising a bearing hole 10 as particularly according to figure 3.

According to all figures, the rocker guide 3 is in cross-section substantially reversed U-shaped with an upper body portion 14 to which two side walls 16 connect. For clarity's sake only one side wall 16 has been drawn. On each side wall 16 a stud is integrally formed, each stud projecting rotatably into the adjacent bearing hole 10 of the hood 1, by which the rocker guide 3 is rockable about the bearing holes within the hood 1. A spring portion 15 is integrally formed at the body portion 14 of the rocker guide, the free end of this extension abutting the ceiling 11 of the hood 1 so that according to figure 1 the rocker guide 3 can only be rocked downward with its right-hand end to a certain extent with respect to the ceiling 11 of the hood 1. The button 4 projects through a hole 17 in the ceiling 11 of the hood 1 until up to the right-hand end of the rocker guide, so that by pushing the button according to figure 1 downwards, the rocker guide 3 pivots about the bearing holes 10 against the spring action of the spring portion 15 of the rocker guide.

In each of the two side walls 16 of the rocker guide 3 there is a guide slot 18 into which a stud 19, integrally formed on the tiltable slide 2, projects, so that the stud projects slidably and pivotably into said slot. According to figure 1, the tiltable slide 2 is pivotably connected with its right-hand end to the casing base 5 that is connected to the window casing 8. According to figure 1, the left-hand end of the tiltable slide is disposed adjacent to a cam 20 formed on the ceiling 11 of the hood 1, so that the hood 1 and thus the window frame 7

through the window base 6 cannot be displaced to the right so that the window remains closed. The cam 20 projects through an opening 27 in the body portion 14 of the rocker guide 3. A hook 24 on the hood 1 and a grab member 23 on the tiltable slide ensure that the hood 1 and the tiltable slide 2 are not too easily pivotable about the stud 19 with respect to one another.

In order to move the window to a ventilating, semi-open position with respect to the window casing, the window handle should be taken from the position according to figure 1 to the position according to figure 2. In order to do so, one pushes the button 4 in the situation according to figure 1 downwards, so that the rocker guide 3 pivots against the action of the spring portion 15, so that the stud 19 of the tiltable slide 2 is displaceable underneath the cam 20 at the hood 1 by means of the slots 18 in the rocker guide 3. Due to this, the hood 1 with rocker guide 3 is displaceable to the right with respect to the tiltable slide 2 from the position according to figure 1, up to the position according to figure 2, in which the stud of the tiltable slide 2 slides from the right-hand end to the left-hand end of the guide slot 18 of the rocker guide 3. In the position according to figure 2 the window frame 7 cannot be displaced further to the right since the hood 1 through the rocker guide 3 abuts the stud 19 of the tiltable slide 2.

The hood 1 preferably comprises cans 21 to which according to figure 2 cams 22 abut on the tiltable slide 2 so that the hood 1 in the position according to figure 3 cannot slide too easily to the left so that the window 7 cannot close undesired. In this way the windown in figure 2 is safe-guarded against both pivoting to the left as to the right. The tiltable slide 2 can be U-shaped in cross-section with a bottom 28 and two side walls 29 to which the cams 22 are formed integrally (vide e.g. figure 3).

In order to bring the window into its entirely open position, the tiltable slide 2 should be tilted over about 180° about the casing base 5 from the semiopen position according to figure 2 to the position according to figure 3. Here, by manually pulling the handle 9 upwards and to the right, the hood 1 follows a track that enables the tilting of the tiltable slide 2. Then the stud 19 of the tiltable slide 2, moreover, slides through the guide slots 18 of the rocker guide 3 from the left-hand ends (figure 2) of these guide slots to the right-hand ends (figure 3) underneath the cam 20, for which purpose it is necessary that the left-hand side of the cam is sloping and that the rocker guide 3 rocks back and forth about the bearing holes 10 in the hood 1 from and to the position determined by the spring 15 of the rocker guide with respect to the hood 1.

In the completely open position according to figure 3 the nose 25 on the bottom 28 of the tiltable slide 2 abuts in the recess 26 in the hood 1 so that the the hood is not movable to the left with respect to the tiltable slide 2 and also so that the hood 1 is not too easily pivotable upwards with respect to the tiltable slide 2 from the position according to figure 3.

It goes without saying that the window handle can also be pivoted from the entirely closed position according to figure 1 in stead of from the semi-open position according to figure 2 to the completely open position according to figure 3. This substantially requires the same movements as from the semi-open position according to figure 2, for those movements you are referred to the above-stated discussion of figure 2. This movement is also possible because the grab member 23 is mounted resiliently in the tiltable slide 2 and can therefore be released from the hook 24 on the hood 1, wide figure 1. In order to bring the window handle form the completely open position according to figure 3 to the completely closed position of figure 1, movements are performed that are contrary to the above-described movements. So the handle 9 is moved obliquely upwards to the right in order to pull the nose 25 on the tiltable slide 2 out of the recess 26 in the hood 1, after which the handle 9 can be pulled downwards along a curve to the left so that the tiltable slide 2 tilts over 180° from the position according to figure 3 to the position according to figure 1. Hereby the stud 19 turns in the guide slot 18 until the grab member 23 resiliently grabs the hook 24, vide figure 1.

The hood with all its parts is preferably formed integrally from synthetic material, i.e. the hood 1 with the handle 9, the cams 20 and 21 plus the hook 24. The tiltable slide 2 is also preferably made integrally of synthetic material, i.e. the tiltable slide 2 with the stud 19, the cams 22 and the grab member 23. Furthermore the rocker guide 3 is also preferably made integrally of synthetic material, i.e. the rocker guide 3 with the spring portion 15 and the studs that project into the bearing holes 10 of the hood 1. The button 4, the casing base 5 and the window base 6 are made separately of synthetic material.

It goes without saying that portions of the window handle given as an example can also be differently shaped without departing from the inventive notion. Particularly cams, springs, grap members, hooks and studs can be formed or disposed differently, while the merit of the invention as indicated in the pertaining claims is still complied with.

Claims

1. Window handle comprising an elongated hood that can be hingedly fixed at one end to a frame, such as e.g. a window frame, and that is coupled hingedly at the other end with the one end of a tiltable elongated member that is shorter than the hood and that can be hingedly fixed with its other end to a window casing, an auxiliary element pivotably connected to the tiltable member enabling a semi-open position of the frame with respect to the window casing, whereas in the closed position of the window handle, the hood and the tiltable member project into one another and in the open position the tiltable member is tilted to the in-line position with the hood, **characterized in that** the auxiliary element is a rocker guide that is rockably connected adjacent to said other end of the hood and that comprises a slot through which said one end of the tiltable member is tiltably and slidably coupled with the rocker guide, so that the tiltable member is a tiltable slide that is only connected to the hood by means of the rocker guide and that with said other end is directly hingedly coupled to the window casing.

2. Window handle according to claim 1, **characterized in that** the slot in the rocker guide extends substantially parallel to the hood from the vicinity of said other end of the hood, the tiltable member being tiltably and slidably connected through a stud with the rocker guide, said stud, in the closed position of the window handle, being disposed hear the end of the slot removed from said other end of the hood and in semi-open position of the window handle near the end of the slot disposed at said other end of the hood.

3. Window handle according to claim 1 or 2, **characterized in that** the rocker guide comprises a spring abutting the hood and biassing the rocker guide to a neutral position with respect to the hood, the end of the tiltable slide connected to the rocker guide releasably abutting a cam on the hood in the closed position of the window handle.

4. Window handle according to claim 3, **characterized by** a button arranged dispaceably in the hood for rocking the rocker guide from its neutral position against spring action so as to release the tiltable slide from the cam, said slide then being slidable from the one end of the slot to the other end, thus opening the window handle.

5. Window handle according to any of the preceding claims, **characterized in that** the tiltable slide comprises a grab member that releasably engages a hook on the hood in the closed position of the window handle, in such a manner that too easily pivoting of the hood away from the canter slide is avoided.

6. Window handle according to any of the preceding claims, **characterized in that** the tiltable slide comprises at least one cam that releasably abuts a pertaining cam on the hood in the semi-open position of the window handle, in such a manner that too easily sliding of the hood towards the closed position with respect to the tiltable slide is avoided.

7. Window handle according to any of the preceding claims, **characterized in that** the tiltable slide comprises a nose that in the completely open position of the window handle projects releasably into a recess in the hood, in such a manner that the tiltable slide and the hood cannot be slid towards one another and that too easily tilting of the tiltable slide with respect to the hood is avoided.

8. Window handle according to any of the preceding claims, **characterized in that** the hood with its handle, cams and grab member are integrally formed of synthetic material.

9. Window handle according to any of the preceding claims, **characterized in that** the tiltable slide with its stud, cams and grab member are integrally made of synthetic material.

10. Window handle according to any of the preceding claims, **characterized in that** the rocker guide with its spring and studs is integrally formed of synthetic material.

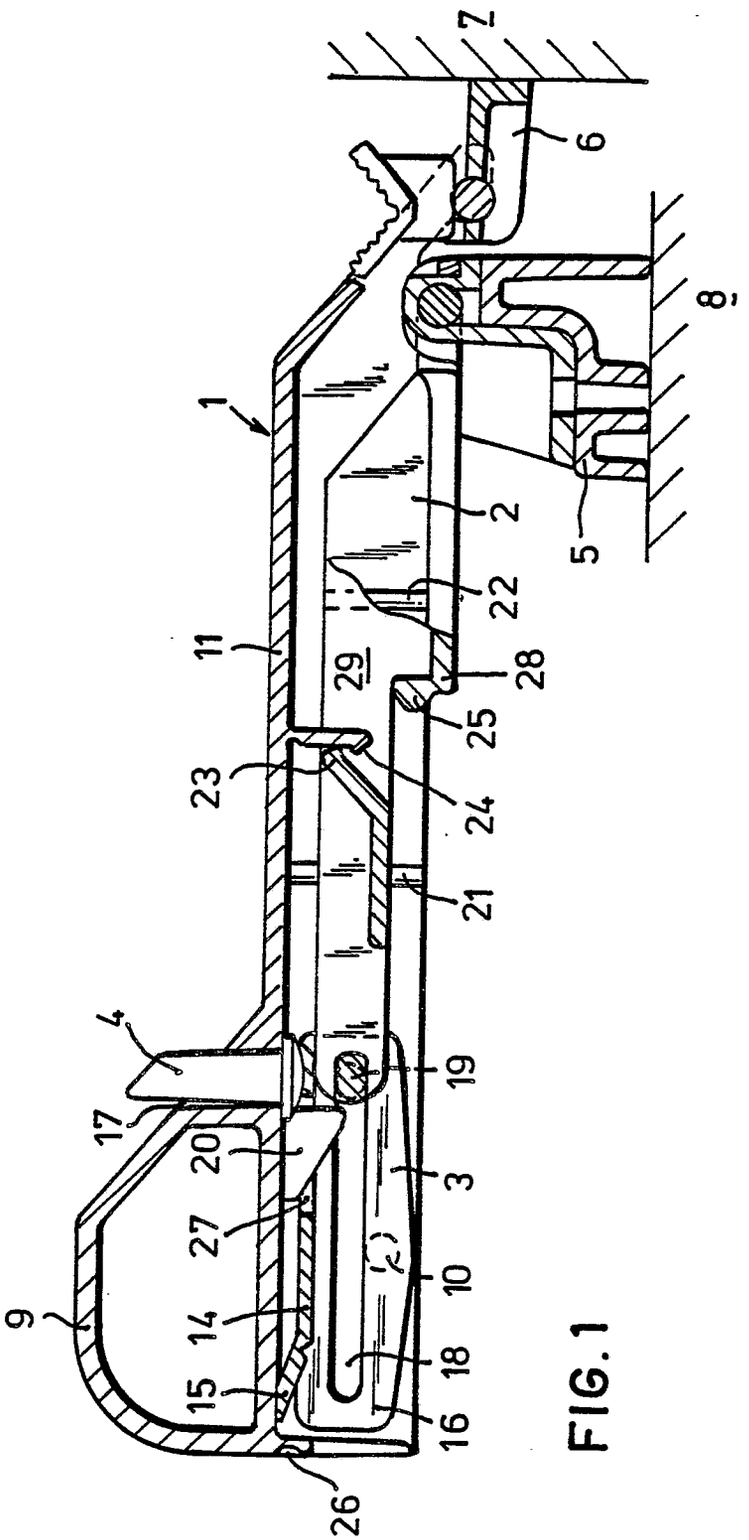

FIG. 1

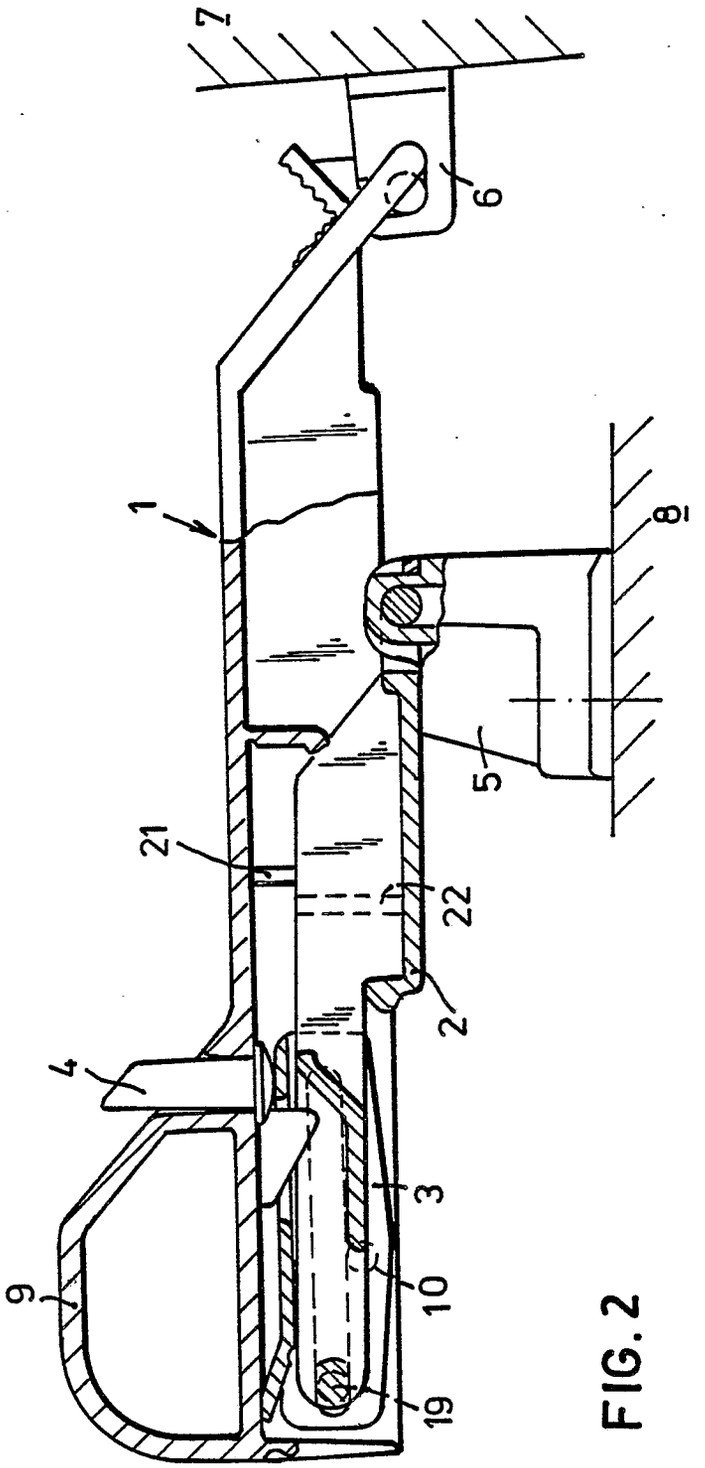

FIG. 2

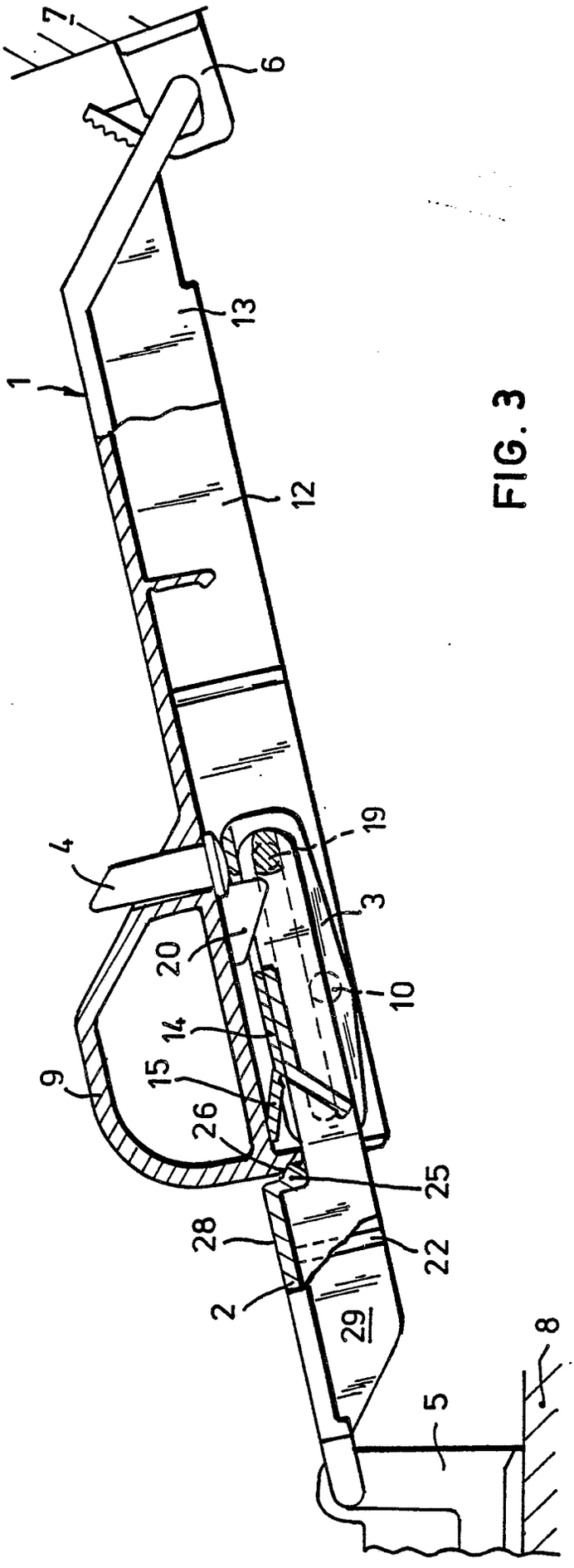

FIG. 3

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EUROPEAN SEARCH REPORT

Application Number

EP 88 20 1759

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.4)
A,D	FR-A-2 188 670 (UBBINK)		E 05 C 17/34

TECHNICAL FIELDS SEARCHED (Int. Cl.4)

E 05 C

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	21-11-1988	VAN BOGAERT J.A.M.M.

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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