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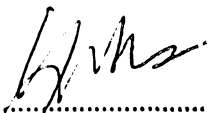
We, **CWS INTERNATIONAL AG**, of Oberneuhofstrasse 5, CH-6430 Baar, Switzerland,
being the applicant in respect of Application No. 46969/93 state the following:-

The Person nominated for the grant of the patent has entitlement from the actual inventor
by assignment.

The person nominated for the grant of the patent is the applicant of the application listed in
the declaration under Article 8 of the PCT.

The basic application listed in the declaration made under Article 8 of the PCT is the first
application made in a Convention country in respect of the invention.

By our Patent Attorneys,
WATERMARK PATENT & TRADEMARK ATTORNEYS


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Registered Patent Attorney

30 September 1996



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In Fig. 1, a schematically represented room spray dispenser is designated with numeral 1. The dispenser is in a functional state characterized by the numeral III, namely in the operational state: "Spray".

Fig. 1 shows an impact lever 2 designed as an angular rocking lever. This impact lever has a frontal hammer portion 2a and, at the rear, bearing lugs 2b integral with two levers 2c having noses 2d. In the bearing lugs 2b is mounted a shaft 3 supported on its end in a housing (not shown).

A further shaft 4, accessible from below, serves as a mounting location for a bearing lug 8b of a detaining/triggering rocker 8. The latter is provided at its end with a rearwardly pointing cam element 8a.

The cam element 8a rests with its recess 8c on a supporting roller 11 designed as a bushing, which is rotatably mounted on a stationary shaft 5.

Between the shafts 4 and 5 there extend two helical springs 7 capable of storing the kinetic energy for the actuation of the atomizer pump of a commercially available dispenser 50 (CWS AG, Switzerland).

A vertically arranged swivel shaft 6 of a square cross-section is led through the rear central portion 10b of a three-armed swivel lever 10. Against camming surfaces 10a with noses 10d rests a spring-loaded resetting rocker 9 (spring not shown) with its two noses 9a. By swiveling a triggering lever 60 in the clockwise sense, in which lever 60 the upper portion of the square shaft 6 terminates, the swivel lever 10 is swung aside. As a result, the front-side triggering nose 10c of the swivel lever 10 makes contact with the cam element 8a, deflecting the latter from the vertical and, see Fig. 2, causes it to drop with its recess 8c onto the supporting roller 11. At the same time, the swivel lever 10 tilts the spring-loaded impact lever 2 about its shaft 3 into a slanting position.

From Fig. 1, in conjunction with Fig. 2, it is easily seen that the cam element 8a projects into the swivel path of the triggering nose 10c which is thus able to tilt the part 8 from its vertical position, Fig. 2.

The functional state II represented in Fig. 2 corresponds to the operational state: "Safe"; the room spray dispenser 1 is ready for state III, as shown in Fig. 1.

If now the triggering lever 60, Fig. 1, with its triggering roller 61 centered around its pivot 62 is

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- 3 .

swiveled in direction of the dash-dotted arrow (counter-clockwise sense), the operational state: "Cocking" is produced.

Via the shaft 6, the swivel lever 10 is now swung out in direction towards the observer; one of the camming surfaces 10a engages the lefthand nose 2d of one of the lever arms 2c and, while tensioning the springs 7, lifts the impact lever 2 with its hammer portion 2a into an upper terminal position. At the same time, the detaining/triggering rocker 8 is pulled onto the supporting roller 11 by a resetting spring 28 (not shown in this drawing) and eventually set down on this roller 11, to touch the latter along a line. Thus the functional state II, Fig. 2, is re-established.



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(54) Title: ENVIRONMENTAL SPRAY DISPENSER AND ITS PREFERRED APPLICATION

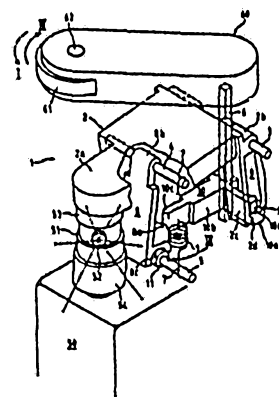
(54) Bezeichnung: RAUMSPRAYSPENDER UND DESSEN BEVORZUGTE VERWENDUNG

(57) Abstract

It is fairly difficult to adjust and install prior art environmental spray dispensers to prevent it from spraying the people using the area. A device (1) has been created which moves a pivoted lever (10) clockwise via a precisely adjustable trigger (60) with a roller (61). A release rocker (8) with its cam section (8a) is forced from its position of rest by the pivoted lever (10); the hammer section (2a) of the spring (7) loaded angled rocker (2) strikes the dispenser (50) fitted with a conventional spray pump and thus produces the desired spray. The environmental spray dispenser (1) is made ready by actuating the lever anticlockwise. Various embodiments of the trigger (60) make it possible to install the spray dispenser in such a way that it produces a delayed spray in virtually all fitting positions, hence with no annoyance to the people in the area.

(57) Zusammenfassung

Bisherige Raumsprayspender waren relativ schwierig zu plazieren und einzustellen, damit sie keine die Räume benutzenden Personen besprühen. Eine Vorrichtung (1) wurde geschaffen welche durch einen genau justierbaren Auslösehebel (60) mit einer Gleitrolle (61) einen Schwenkhebel (10) im Uhrzeigersinn betätigt. Eine Auslösewippe (8) mit ihrem Nockenenteil (8a) wird durch den Schwenkhebel (10) aus ihrer Ruhelage gedrückt; die mit Federn (7) belastete winkelförmige Wippe (2) schlägt mit ihrem Hammerteil (2a) auf den mit einer konventionellen Sprühpumpe ausgerüsteten Spender (50) und bewirkt dadurch das gewünschte Spraysen. Die Betriebsbereitschaft des Raumsprayspenders (1) wird durch eine Betätigung des Hebels im Gegenuhrzeigersinn hergestellt. Verschiedene Varianten des Auslösehebels (60) erlauben einen Einbau des Raumsprayspenders derart, dass dieser bei nahezu allen Einbausituationen ein verzögertes Spraysen bewirkt, welches im Raum befindliche Personen nicht beeinträchtigt.



ROOM SPRAY DISPENSER

The disclosure of Swiss priority application No. 02 609/92-7 filed August 21, 1992 is incorporated herein by reference.

The present invention relates to a room spray dispenser with a triggering
 5 mechanism, wherein a dispenser is arranged in the room spray dispenser,
 having a receptacle for, or with, an odor-neutralizing and/or deodorizing liquid to
 be atomized, the neck of the receptacle containing a valve body with pump and
 nozzle, wherein an impact lever is provided, biased in direction of the valve
 body by means of at least one spring, and wherein this impact lever is provided
 10 with a cocking and detaining device.

The invention furthermore relates to a preferred use of the object thereof.

The EP-BI-0 127 573 teaches a room spray dispenser according to the
 preamble of claim 1. While this dispenser has proved itself, it requires an
 accurate positioning in the room or on the door, in order to prevent persons from
 15 getting sprayed. The adjustment possibilities are relatively limited, as triggering
 of the dispenser is effected via a linearly actuated triggering lever, a similarly
 actuatable cocking lever being provided for cocking. Also, due to the kinematics
 of the arrangement, relatively large forces have to be applied, which require a
 correspondingly careful mounting of the room spray dispenser, especially on
 20 doors.

It is thus one of the objects of the invention to produce a device that has
 such dimensions as not to impair actuation of the door, that requires no, or only
 a minimum of, fasteners causing damage, and that can be so located as to
 prevent the spray produced from falling on persons, e.g., using lavatories or
 25 toilet rooms.



According to the invention, this is achieved by providing a swivel shaft to which is fixedly attached a swivel level which, in a swung-out position, raises and cocks the impact lever, in an intermediate position moves the lever into a safe position and, in its position of rest, releases the lever for spraying.

- 5 The inclusion of a swivel shaft, that is, triggering effected on a circular segment, and a corresponding cocking of the mechanism, ensures accurate control motions and requires only slight forces absorbable by rolling friction.

A particular advantage of the room spray dispenser resides in its simple mounting procedure, requiring, due to its large mounting surface, only a
10 minimum of mechanical means.

The following depending claims describe the advantageous further development of the object of the invention.

The swivel lever is functionally advantageous and subject to slight wear
only.

- 15 The rocker-like impact lever is easily cocked and triggered.

The detaining/triggering rocker is kinematically advantageous, due to its being arranged on the impact lever.

The inclusion of a supporting roller ensures, due to the resulting linear contact with the detaining/triggering rocker, an accurate triggering with only
20 minimal torques required.

A detaining/triggering rocker loaded by a resetting spring yields the advantage of well-defined functional stages.

The resetting rocker advantageously serves to produce a basic state of the functions without need for an extraneous auxiliary energy.



The polygonal swivel shaft is in the simplest case a square shaft, which ensures non-slip transmission of torques.

Found reliable was a triggering lever with a triggering roller at its end, since thereby the fastener means are acted upon by only minimal friction forces
5 and correspondingly slight shear forces.

The design of the triggering lever facilitates very simple and precise adjustment of the desired "control functions" of the device.

A two-part triggering lever is advantageous from the design point of view and permits the economical manufacturing thereof.

10 It is often practical to mount the triggering lever inside a door opening.

A cranked triggering lever facilitates the bridging of larger triggering distances, while still permitting the retaining of preselected mounting locations for the device.



~~Use according to claim 14 results in the simplest~~
actuation of the room spray dispenser.

~~The subsequent claim 15 describes a particularly~~
~~advantageous use.~~

In the drawings:

- Fig. 1 is a simplified representation of a room spray dispenser during the spraying process;
- Fig. 2 shows the room spray dispenser of Fig. 1 in the safe position;
- Fig. 3 is a simplified top view in partial cross-section, the characteristic angular positions of the swivel lever being represented;
- Fig. 4 showing the initiation of the triggering process, including the respective positions of the swivel lever;
- Fig. 5 is an embodiment of the room spray dispenser in a vertical partial cross-section, with a first version of a triggering lever;
- Fig. 6 is the representation of Fig. 5, rotated by 90°;
- Figs. 7a-7c show the rocker-shaped impact lever of Fig. 1, Fig. 2 in a bottom view, in a cross-sectional elevation and in a side view;
- Figs. 8a-8c show the swivel lever, Fig. 1, Fig. 2, in three views;
- Figs. 9a-9c show the detaining/triggering rocker, Fig. 1, Fig. 2, in three views;
- Figs. 10a-10d represent the resetting rocker of Fig. 1, Fig. 2 in four views;
- Figs. 11a-11c show a triggering lever slightly changed relative to that of Fig. 1;
- Figs. 12a, 12b show variants of the triggering lever of Figs. 11a-11c for limited space conditions;
- Figs. 13a, 13b show a joint-like triggering lever for the bridging of longer triggering distances;



Fig. 14 illustrates a characteristic way of mounting a room spray dispenser on a door opening into the room;
Fig. 15 illustrates the functioning of the triggering of the spraying process on the door of Fig. 14, and
Figs. 16a-16c illustrate, by way of example, the mounting and manner of operation, of a room spray dispenser on a door opening towards the outside.

The following is a more detailed description, aided by drawings, of a preferred embodiment of the object of the invention.

In Fig. 1, a schematically represented room spray dispenser is designated with numeral 1. The dispenser is in a functional state characterized by the numeral III, namely in the operational state: "Spray".

Fig. 1 shows an impact lever 2 designed as an angular rocking lever. This impact lever has a frontal hammer portion 2a and, at the rear, bearing lugs 2b integral with two levers 2c having noses 2d. In the bearing lugs 2b is mounted a shaft 3 supported on its end in a housing (not shown).

A further shaft 4, accessible from below, serves as a mounting location for a bearing lug 8b of a detaining/triggering rocker 8. The latter is provided at its end with a rearwardly pointing cam element 8a.

The cam element 8a rests with its recess 8c on a supporting roller 11 designed as a bushing, which is rotatably mounted on a stationary shaft 5.

Between the shafts 4 and 5 there extend two helical springs 7 capable of storing the kinetic energy for the



actuation of the atomizer pump of a commercially available dispenser 50 (CWS AG, Switzerland).

A vertically arranged swivel shaft 6 of a square cross-section is led through the rear central portion 10b of a three-armed swivel lever 10. Against camming surfaces 10a with noses 10d rests a spring-loaded resetting rocker 9 (spring not shown) with its two noses 9a. By swiveling a triggering lever 60 in the clockwise sense, in which lever 60 the upper portion of the square shaft 6 terminates, the swivel lever 10 is swung aside. As a result, the front-side triggering nose 10c of the swivel lever 10 makes contact with the cam element 8a, deflecting the latter from the vertical and, see Fig. 2, causes it to drop with its recess 8c onto the supporting roller 11. At the same time, the swivel lever 10 tilts the spring-loaded impact lever 2 about its shaft 3 into a slanting position.

From Fig. 1, in conjunction with Fig. 2, it is easily seen that the cam element 8a projects into the swivel path of the triggering nose 10c which is thus able to tilt the part 8 from its vertical position, Fig. 2.

The functional state II represented in Fig. 2 corresponds to the operational state: "Safe"; the room spray dispenser 1 is ready for state III, as shown in Fig. 1.

If now the triggering lever 60, Fig. 1, with its triggering roller 61 centered around its pivot 62 is swiveled in direction of the dash-dotted arrow (counter-clockwise sense), the operational state: "Cocking" is produced.



Via the shaft 6, the swivel lever 10 is now swung out in direction towards the observer; one of the camming surfaces 10a engages the lefthand nose 2d of one of the lever arms 2c and, while tensioning the springs 7, lifts the impact lever 2 with its hammer portion 2a into an upper terminal position. At the same time, the detaining/triggering rocker 8 is pulled onto the supporting roller 11 by a resetting spring 28 (not shown in this drawing) and eventually set down on this roller 11, to touch the latter along a line. Thus the functional state II, Fig. 2, is re-established.

The characteristic positions of the swivel lever 10a-10c in its possible swung-out locations I are shown in Fig. 3, from which it can be learned that according to the adjustment of the triggering lever 60 with its triggering roller 61, the lever 60 leads to a left-side or, optionally, right-side actuation of the device, whereby the swivel lever 10 acts on the left-side, respectively right-side nose 2d of the impact lever 2 (see Fig. 1).

The above-described positions correspond to the solid lines in Fig. 3; the equally possible ones, to the dash-dotted position of the swivel lever 10 or its camming surface 10a.

It is further seen that in these two terminal positions I it is always the opposite nose 10d, that rests against a part of the resetting rocker 9.

A comparison of Fig. 3 and Fig. 4 shows that a swivel lever 10 located in its central position will produce the operational state "Spray" represented in Fig. 1.



A further actuation of the lever 60 in the direction marked in Fig. 4 (in the counter-clockwise sense) will return the impact lever 2, Fig. 2, to its horizontal position, restoring the state II, i.e., "Safe".

Figs. 3 and 4 further show the walls 12 of the device including the horizontal bearing bushings 13 arranged in them for the shafts 3, 5 and 18 (Fig. 5). Also shown in Figs. 3 and 4 is a slot 12' to accommodate the neck of the bottle with the spraying liquid.

Further details concerning the structural design of the object of the invention, as well as variants of the triggering lever which is indispensable for the operation, are seen in the following drawings:

The partial cross-section of Fig. 5 again shows the functional components already depicted. In addition, it is seen that, at the hammer portion 2a of the impact lever 2, there is arranged a replaceable anvil piece 53 which is capable of impacting the conventional atomizing pump of the dispenser 50 in a hammer-like manner. It is further seen that a resetting spring 28 is provided, which, with its ends, hooks on one side onto a shaft 24' mounted in bores 24, and, on the other side, into a hole 29. Similarly, a pull-up spring 19 is arranged between a mounting rod 17 in the resetting rocker 9 and a similar rod 18 mounted in opposite bearing bushings 13 (Figs. 3, 4) in the walls 12 of the device.

The square, vertical swivel shaft 6 is mounted in bearing bushings 14 and rendered rotatable by bearing rings 14'. These per se known bearing rings have an inner bore of a square cross-section corresponding to the shaft 6 and are



cylindrical on the outside, being a sliding fit in the bushings 14.

The wall 12 of the device is fully covered by a conventional cover 12a, all components of the device thus being protected.

Mounting slots 15 being advantageously provided in the wall 12, thus, in case of need, enabling the device to be screwed and secured to the mounting location. In addition, there is provided a locking mechanism 16 which, in a known manner, can be operated with the aid of a special key.

Of particular importance is the structural design of the two-part triggering lever 60. The cross-sectional representation in the upper part of Fig. 5 shows all essential details: The triggering roller 61, its pivot 62 and journal 63, and the screw 64. On the swivel shaft 6 there is fixedly mounted a worm wheel 66 in which engages a worm 67, having at both ends screw shafts 68. The triggering lever 60 has an upper lever housing and a lower housing which are fixedly attached to one another by at least one screw 65.

Fig. 6, rotated relative to Fig. 5, reveals further details from Figs. 1-4, seen in particular are two springs 7, suspended at their ends on shafts 4 and 5, respectively. Also seen is the design of the walls 12 and the cover 12'.

Figs. 7a-7c represent the impact lever 2 in all its details. In the hammer portion 2a there is provided a centering bore 21 for the anvil piece 53. A pinning hole 22 crosses the bore 21 to secure the anvil piece 53. Also seen are the bores 23 for the shaft 4, the bore 24 for the shaft



24' of the resetting spring 28 and the bore 25 for the shaft 3 in the bearing lugs 2b.

The recess 20 seen in Fig. 7a serves to permit the attachment of springs 7 to the shaft 4, see also Figs. 1 and 6.

The angular impact lever 2 (see Figs. 7b and 7c) is reinforced by rigidifying ribs 27 and can thus be mechanically loaded.

The swivel lever 10, Figs. 8a-8c, represented in three different views, is of a three-armed design, see Fig. 8c. The square bore 10f, fitting the shaft 6, passes through the component. The two camming surfaces 10a are provided with noses 10d. The central portion 10b has a reinforcing rib 10e which merges with the triggering nose 10c.

The detaining/triggering rocker 8, Figs. 9a-9c, has also a reinforcing rib 8e, in which is located the hole 8f for the spring 28 (see Fig. 5). In the upper portion of the rocker 8 there is located the bearing lug 8b and at the end, the recess 8c which fits the supporting roller 11. The obtuse-angled design of the cam element 8a is clearly seen in Fig. 9c.

Figs. 10a-10d represent the resetting rocker 9 in four different views. The elevation, Fig. 10a, shows the two noses 9a and, between them, the recesses 9c and 9e. Also seen in the recess 9e are two holes 9f for the pull-up springs 19. The recess 9c serves for unhindered passage of the square swivel shaft 6 (Figs. 1, 2). The outer shape and cross-sectional shape of the resetting lever 9 are clearly seen in Figs. 10a and 10b.



The resetting rocker 9 is guided by the shaft 3 (Fig. 1) in a bore 9b.

Due to the triggering lever 60 (Figs. 11a-12b) which is adaptable to different conditions, the object of the invention is easily adapted to almost any desired location.

This is also facilitated by the per se already proven design of the dispenser 50, by means of a rotatable, i.e., in its spray direction adjustable, nozzle 52 in the valve body 51.

The design of the triggering lever 60 according to Figs. 11a and 11a' substantially corresponds to that seen in Fig. 5. What has been simplified here is the pivot 62. The two lever housing halves 60', 60" (Figs. 11b, 11c) have additional supporting rings 60a and furthermore, in the lower part 60", a ribbed ring 60a' and in the upper part 60' additional stops 60b for the worm wheel 66 provided with abutment noses 66a. Dowels 60c in the lower lever housing half 60" are centered in dowel sockets 60c' in the housing half 60' and serve for accurate joining by means of screws 65.

The ribbed ring 60a' according to Fig. 11c is also used in the variant of Figs. 13a and 13b.

According to Fig. 13a, this triggering lever 60 is articulated and can be adjusted for the bridging of larger triggering distances. To this end, two upper and two lower lever housing halves 60' and 60" respectively are screwed together at the desired angular position.

With limited space conditions, especially when the triggering lever must be led through the upper gap of a



door, a triggering lever 71' according to Figs. 12a and 12b is of help. Here, the pivot 62 is mounted in a yoke 70. The triggering roller 61' is of a smaller diameter and is purely discoid, without further recesses. The flat portion 71' of the lever 71 is so dimensioned that it will pass through the upper door gap, without touching the door. The triggering lever 71 can be mounted in whatever way on the opposite side of the door frame or on the frame itself.

The universal mountability of the object of the invention is clearly perceived with the aid of Figs. 14-16c:

In Fig. 14, the room spray dispenser is in the usual way screwed to a door panel 72, with the door hinge 73 facing the room and the triggering lever 60 touching the door frame 72' when the door is closed. If now the door handle 74 is opened in the usual way, the spraying process is triggered according to Fig. 1, as represented in Fig. 15.

For the sake of completeness, the room wall is marked with numeral 75.

As represented in Figs. 16a-16c, the room spray dispenser 1 is mounted directly on the door opening of the wall 75. The door hinge 73, too, is directly attached to the wall 75.

In spite of these very rudimentary mounting conditions, the triggering lever 60 can be precisely adjusted by rotation of the worm 67 by means of a screwdriver engaging the slot in the screw shaft 68, e.g., in Fig. 11c. No added wear can occur, as all inaccuracies in shutting the door are translated into a rolling motion and, thus, into a stroke of the triggering lever 60.



The object of the invention is advantageously made of commercial plastics. With the exception of the shafts, the transmission parts (worm, worm wheel) and the fasteners and springs, proven and wear-resistant polymers can be used.

The above-described self-locking worm wheel 66 maintains the angular position of the triggering lever 60 relative to the impact lever 2 as set with regard to the geometric conditions, so that the room spray dispenser 1 can be operated for an extended period of time without readjustment.

With the lever variants shown, practically all conceivable mounting problems can be solved.

As the greatest advantage, however, appears the possibility of arranging the room spray dispenser 1 at any location without the spraying process offensively affecting people.

The slight triggering and cocking moments required permit in most cases the simplest mounting of the device by way of attachment with the aid of double-sided adhesive mounting tape.

This end is also served by setting the angle at the triggering lever 60, since this, indirectly, via the pathlength, reproducibly sets a time delay of the spraying process relative to triggering by the door movement.

The device according to the invention is obviously not limited to use in toilets and to actuation by a door movement. It could also be used in rooms in which smokers stay. Equally conceivable is the mounting of the room spray dispenser in the region of windows, blinds, flushing



cisterns, etc., so that the spraying process is triggered after the airing of a room, or after flushing, for the scenting of the room.



Nomenclature

1	Room spray dispenser
2	Impact lever (angular rocker)
2a	Hammer portion of 2
2b	Bearing lugs of 2
2c	Lever arms of 2
2d	Nose of 2
3, 4, 5	Shafts
6	Swivel shaft
7	Springs
8	Detaining/triggering rocker
8a	Cam element of 8
8b	Bearing lug of 8
8c	Recess in 8
8d	Flank portions
8e	Reinforcing rib
8f	Hole (spring 28)
9	Resetting rocker
9a	Noses
9b	Bore
9c	Recess for shaft
9e	Recess
9f	Hole
10	Swivel lever
10a	Camming surfaces of 10
10b	Central portion of 10
10c	Triggering nose
10d	Noses
10e	Reinforcing rib
10f	Square bore
11	Supporting roller (bushing)
12	Walls of device



12a	Cover of device
12'	Centering slot for neck of receptacle for spraying liquid
13	Bearing bushings (horizontal)
14	Bearing bushings (vertical)
14'	Bearing ring
15	Mounting slots
16	Locking mechanism
17, 18	Mounting rods (shafts) for springs
19	Pull-up springs
20	Recess
21	Centering bore for anvil piece
22	Pinning hole (for 21)
23	Bore for shaft 4
24	Bore for shaft 24'
24'	Shaft (resetting spring)
25	Bore for shaft 3
26	Abutment noses
27	Reinforcing ribs
28	Resetting spring
29	Hole
50	Dispenser (conventional atomizer pump with receptacle)
51	Valve body
52	Nozzle
53	Anvil piece (replaceable)
54	Neck (threaded cap)
60	Triggering lever
60'	Upper lever housing
60"	Lower lever housing
60a	Supporting ring
60a'	Ribbed ring
60b	Stops (abutment noses)



60c	Dowel
60c'	Dowel socket
61, 61'	Triggering rollers
62	Pivot
63	Journal
64, 65	Joining screws
66	Worm wheel
66a	Abutment noses
67	Worm
68	Screw shaft (axis of 67)
69	Bore
70	Bearing yoke
71	Triggering lever for mounting on wall opening
71'	Flat portion of 71
72	Door panel
72'	Door frame
73	Door hinge
74	Door handle
75	Wall
I	Functional state (terminal position), transition to operational state "Cock"
II	Functional state corresponding to operational state "Safe"
III	Functional state corresponding to operational state "Spray"



THE CLAIMS DEFINING THE INVENTION ARE AS FOLLOWS:

1. A room spray dispenser comprising a receptacle for a liquid to be atomized, said receptacle having a neck bearing a spray valve comprising a nozzle and pump; an impact lever pivotally mounted for engagement with said spray valve to actuate a spray, said input lever being normally biased against said spray valve; a cocking and detaining element having a vertical swivel shaft and a swivel lever mounted to said swivel shaft for rotation about said swivel shaft in a generally horizontal plane, said cocking and detaining element being mounted such that rotation of said swivel lever in a first direction from a first position to a second position raises said impact lever away from the biased position against said spray valve and rotation in a second direction from said second position to said first position releases said impact lever for return towards said spray valve to actuate a spray and to place said impact lever into a safe position.

2. The room-spray dispenser as claimed in claim 1, wherein the swivel lever comprises a central arm and first and second arms located at opposite sides of said central arm and at right angles thereto, said central arm having a distal end terminating in a triggering nose, said first and second arms each having a distal end terminating at a nose and camming surface.

3. The room spray dispenser as claimed in claim 1, wherein said impact lever has a hammer portion mounted at an angle to a pair of lever arms, said impact lever further comprising means for rotation about a horizontal axis.



4. The room spray dispenser as claimed in claim 3, further comprising a resetting rocker mounted upon a shaft for engagement with at least one of said camming surface noses of said first and second arms, and a spring joined to said resetting rocker to bias said rocker thereagainst.

5. The room spray dispenser as claimed in claim 1, further comprising a detaining/triggering rocker pivotally mounted to said impact level, said detaining/triggering rocker having a cam element at a distal end.

6. The room spray dispenser as claimed in claim 5, further comprising a supporting roller mounted for engagement with said cam element of said detaining/triggering rocker, said cam element having an edge surface and a recess, said supporting roller being adapted to be alternatively engaged with one of said edge surface an recess.

7. The room spray dispenser as claimed in claim 6, further comprising a resetting spring connected to said detaining/triggering rocker to bias said detaining/triggering rocker against said supporting roller.

8. The room spray dispenser as claimed in claim 1, wherein said swivel shaft has a polygonal cross-section.

9. The room spray dispenser as claimed in claim 1, further comprising a triggering lever mounted to a first end of said swivel shaft, said triggering lever having a rotatably mounted triggering roller mounted to a distal end thereof.



10. The room spray dispenser as claimed in claim 9, further comprising a worm-wheel mounted upon said swivel shaft and a worm mounted to said triggering lever, said worm and worm-wheel being further mounted for mutual engagement to couple said triggering lever to said swivel shaft.

11. The room spray dispenser as claimed in claim 9, wherein said triggering lever comprises first and second pivotally jointed parts.

12. The room spray dispenser as claimed in claim 9, wherein said triggering lever is articulately bendable, having an angular position determined by the interlock of dispenser housing parts.

13. The room spray dispenser as claimed in claim 1, further comprising a triggering lever mounted to said swivel shaft, said triggering lever comprising an arm of low structural height, adapted for wall-opening mounting.

DATED this 30th day of September, 1996

CWS INTERNATIONAL AG

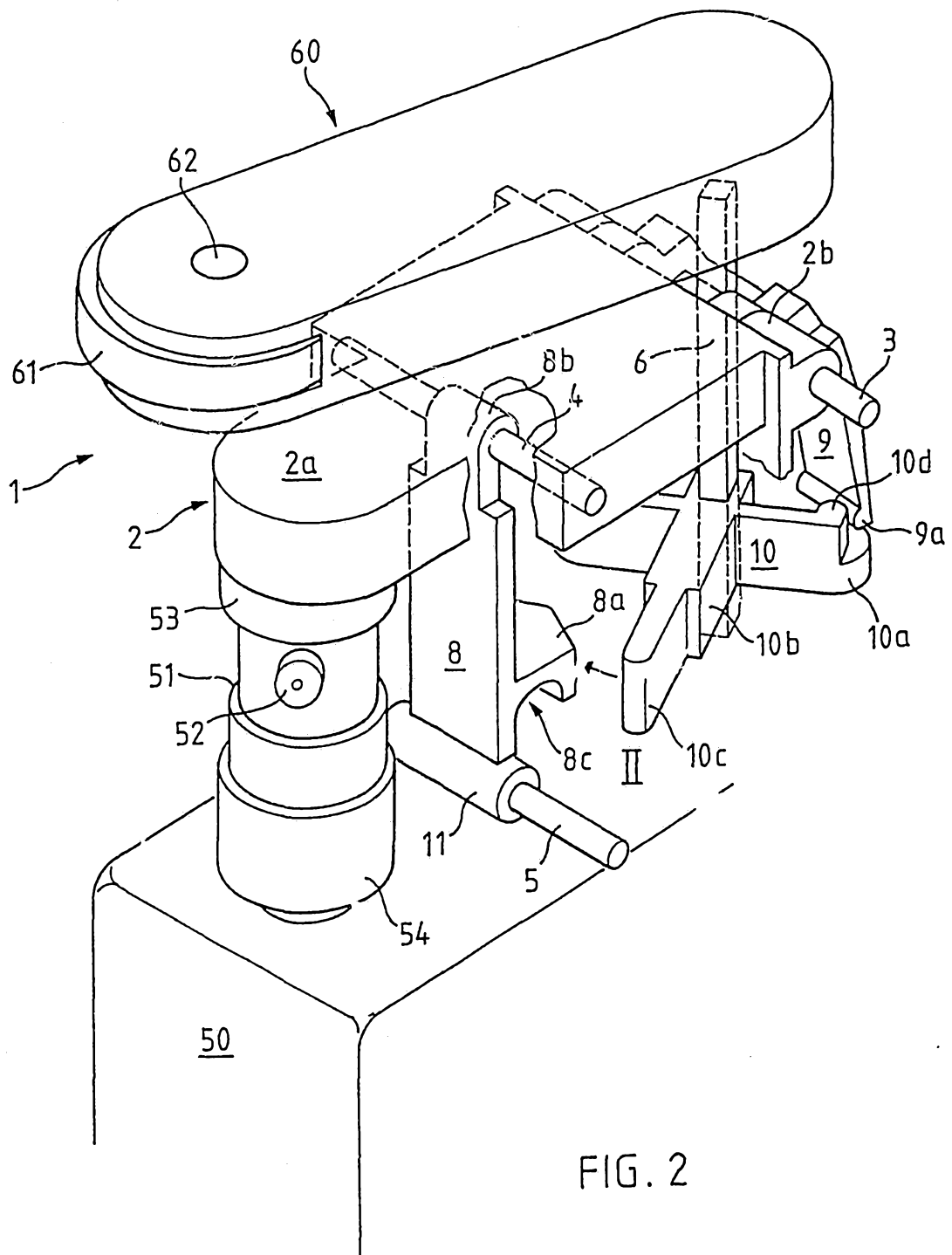
WATERMARK PATENT & TRADEMARK ATTORNEYS
290 BURWOOD ROAD
HAWTHORN VICTORIA 3122
AUSTRALIA

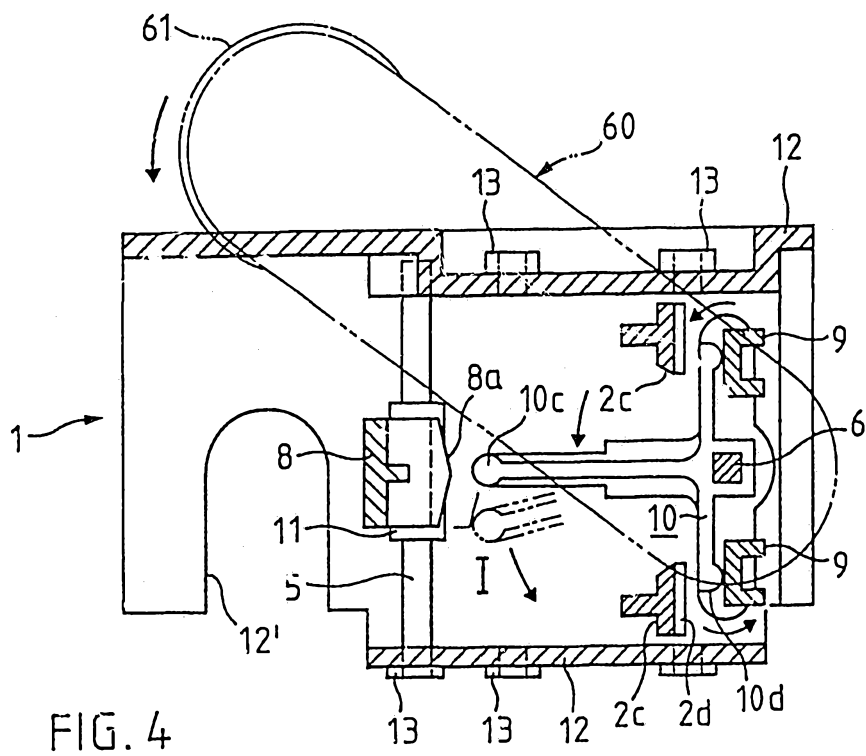
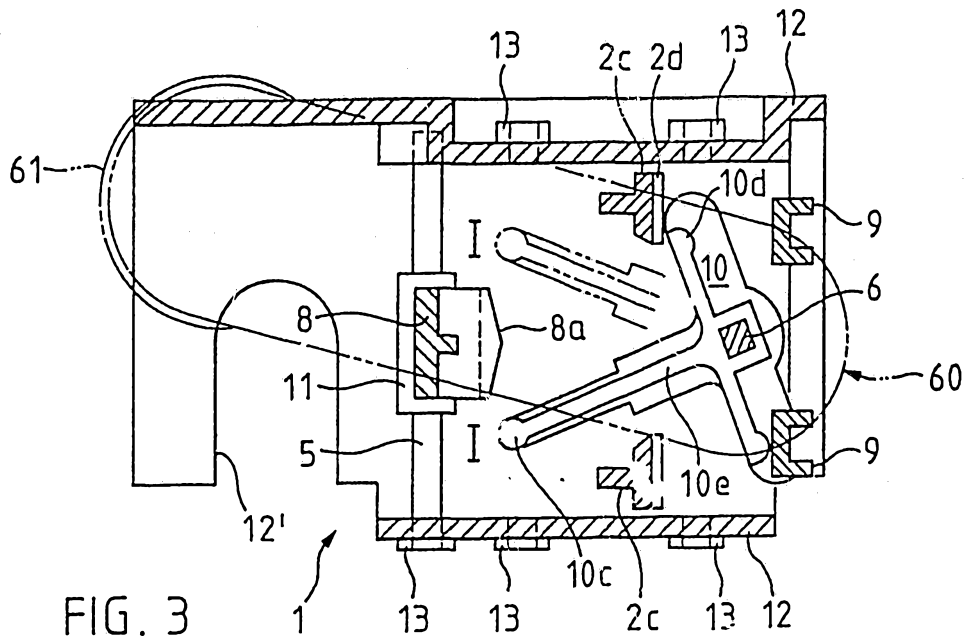


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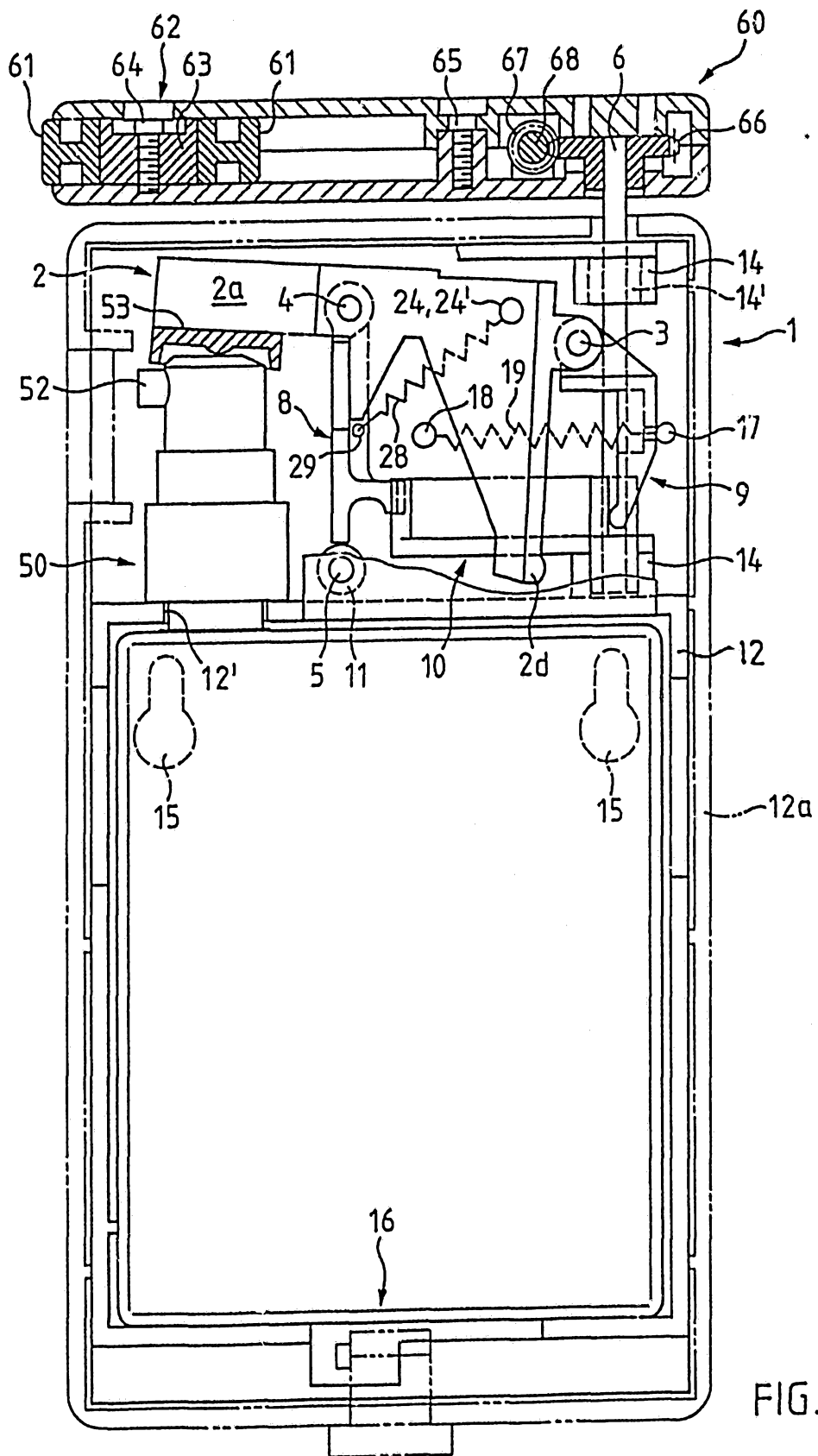


FIG. 5

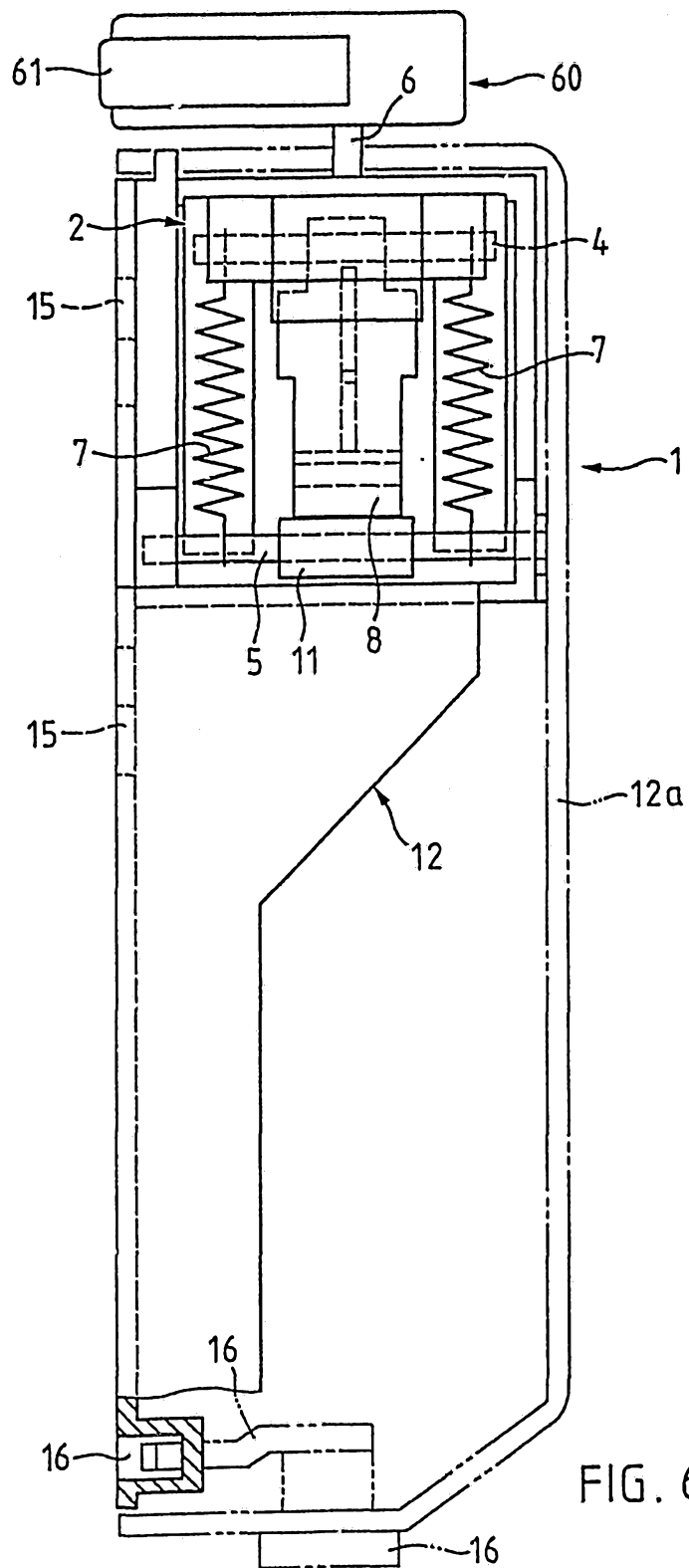


FIG. 6

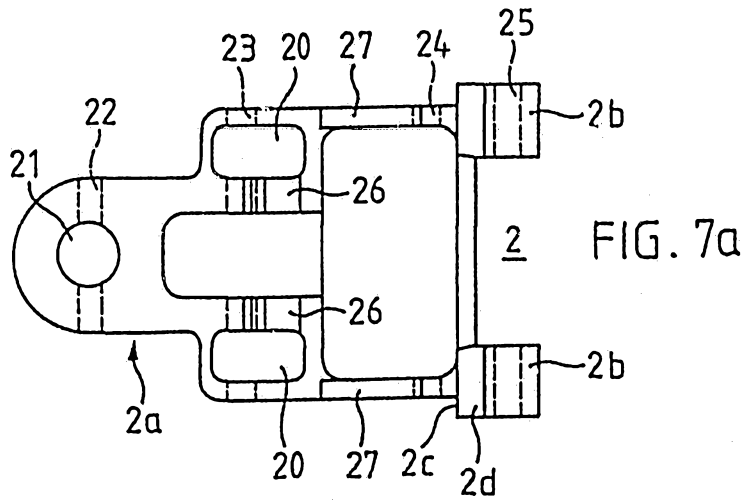
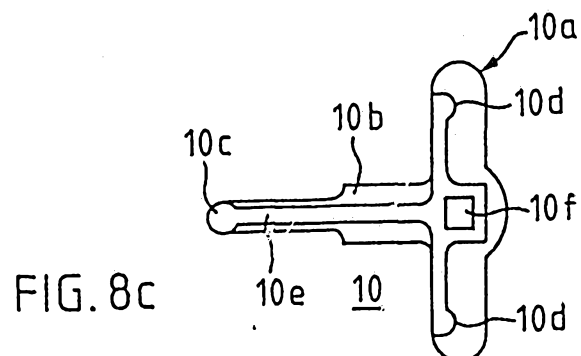
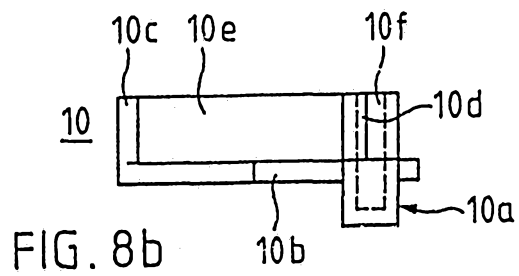
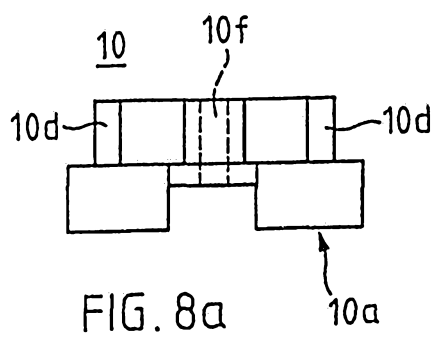
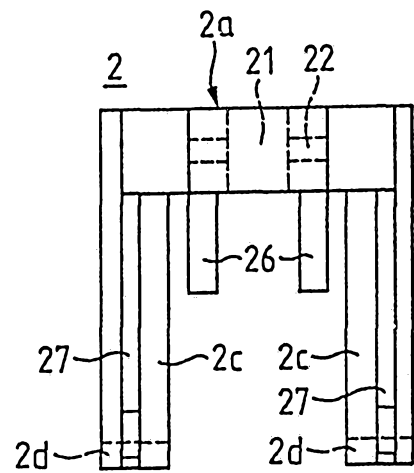
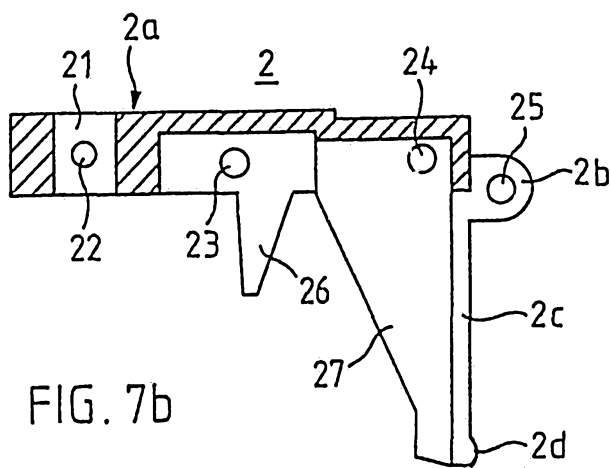


FIG. 7c



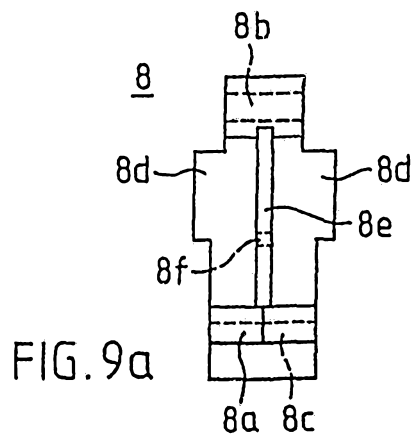


FIG. 9a

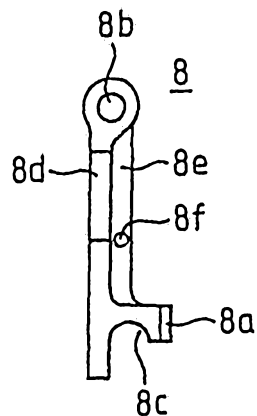


FIG. 9b

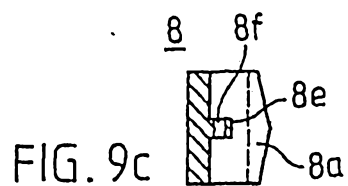


FIG. 9c

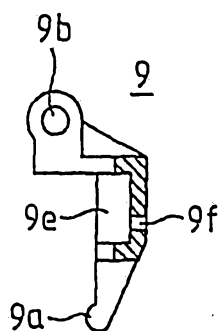


FIG. 10c

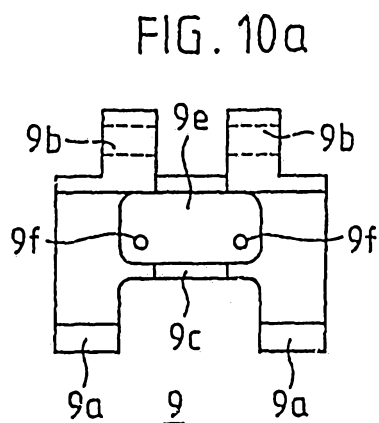


FIG. 10a

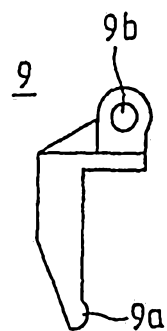


FIG. 10d

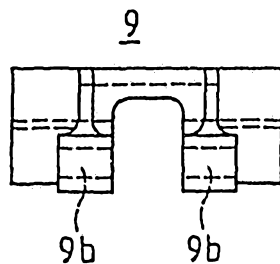


FIG. 10b

FIG. 11b

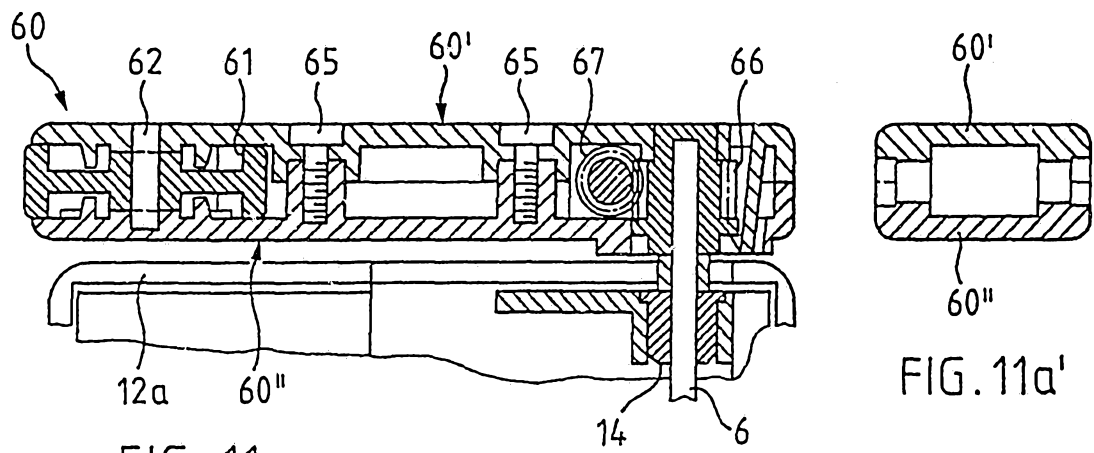
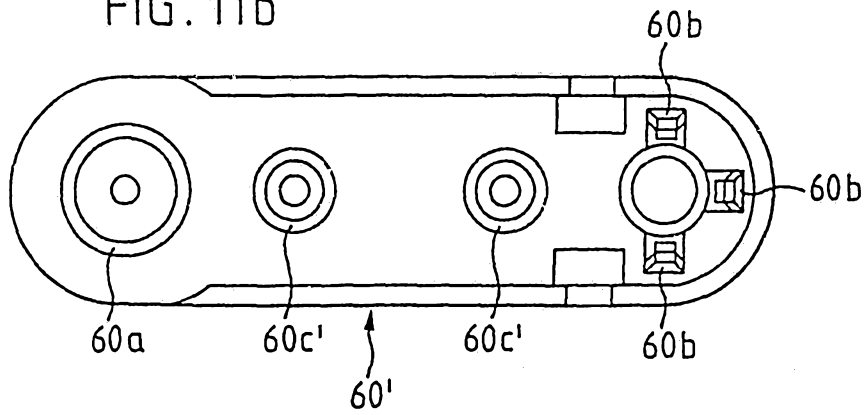


FIG. 11a

FIG. 11a'

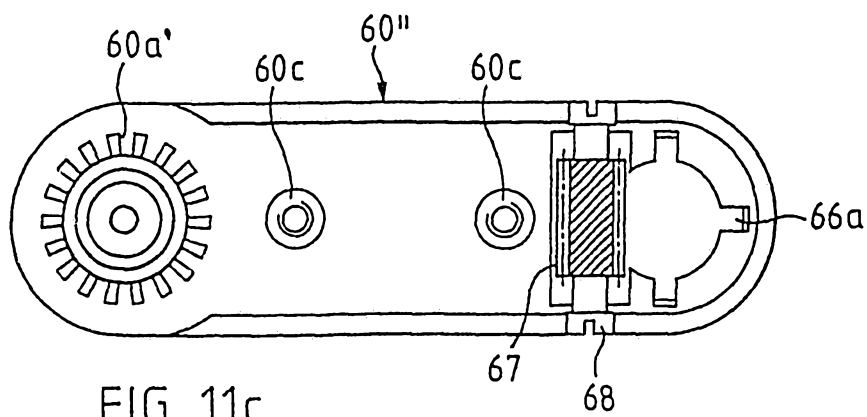


FIG. 11c

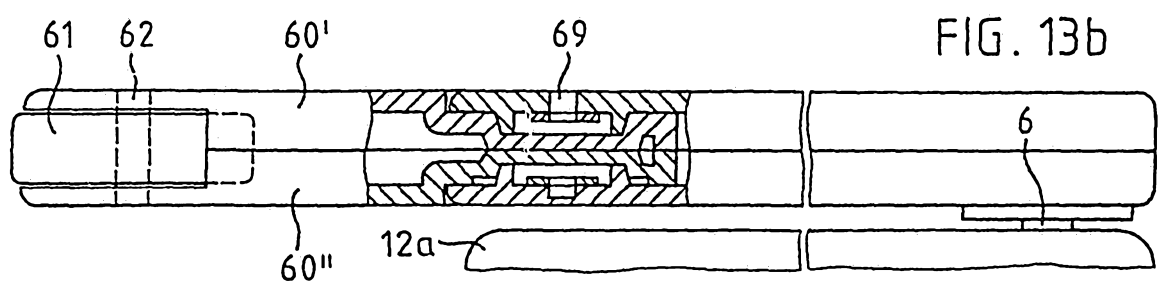
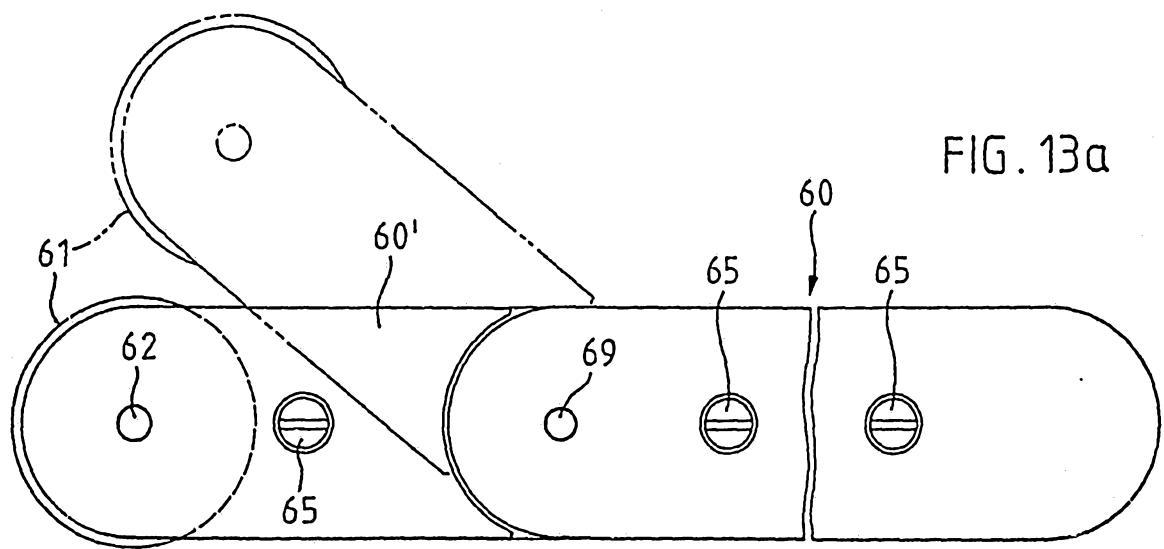
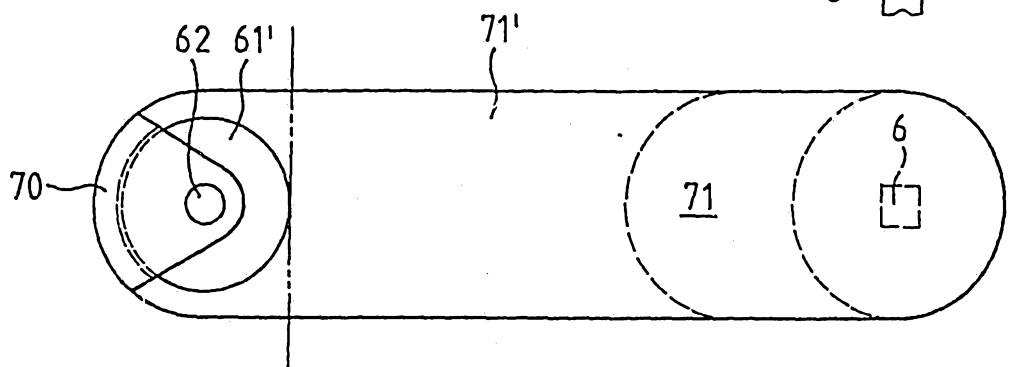
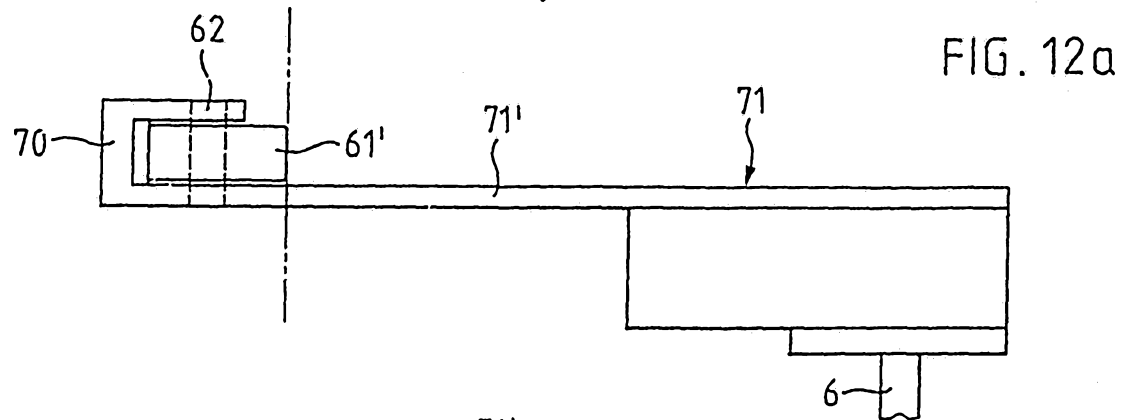


FIG. 14

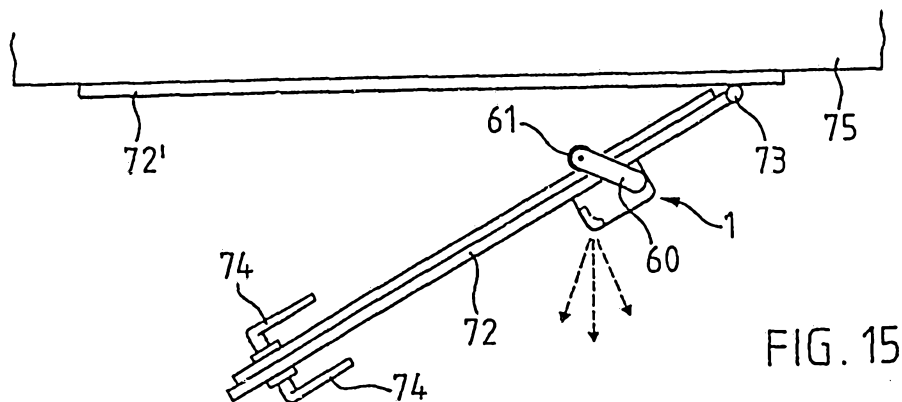
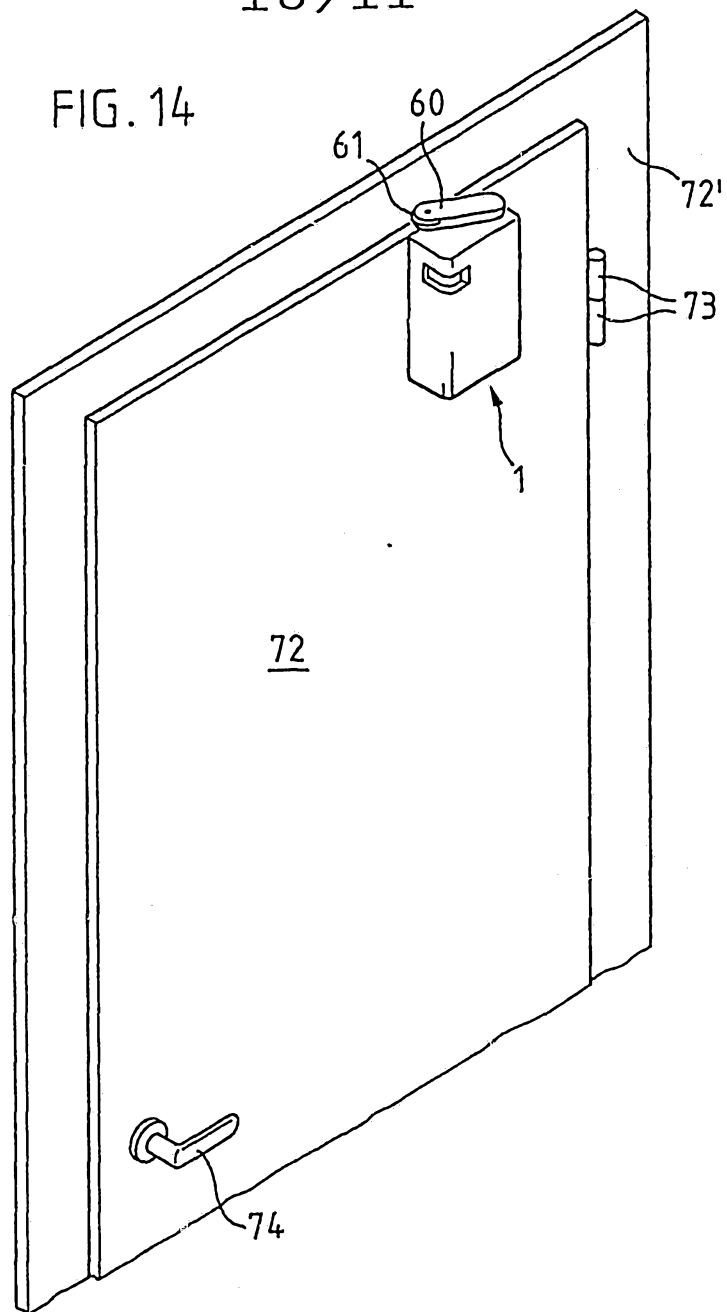
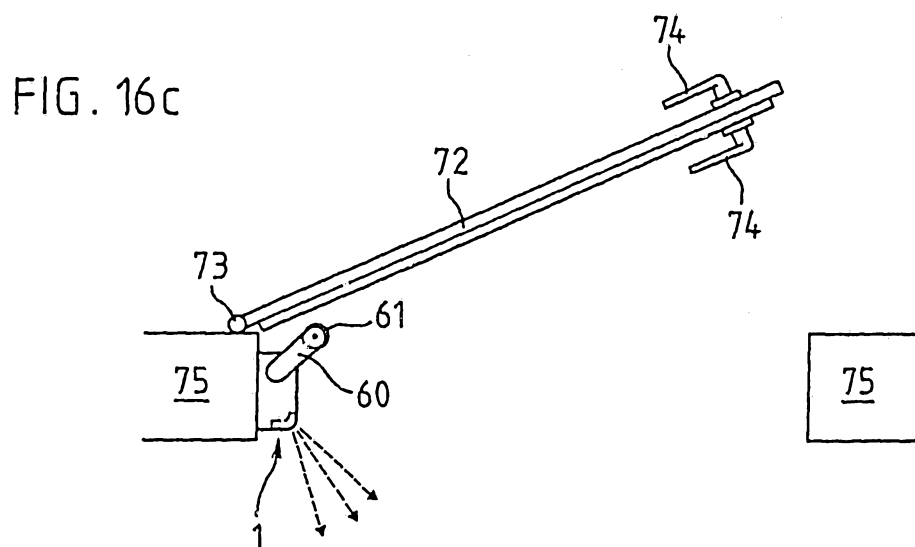
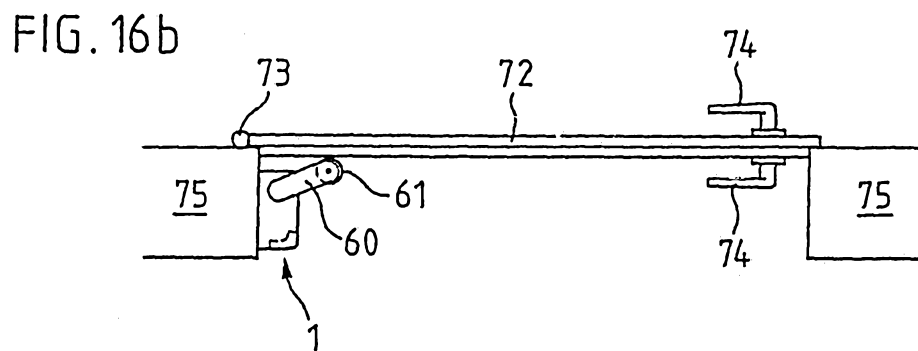
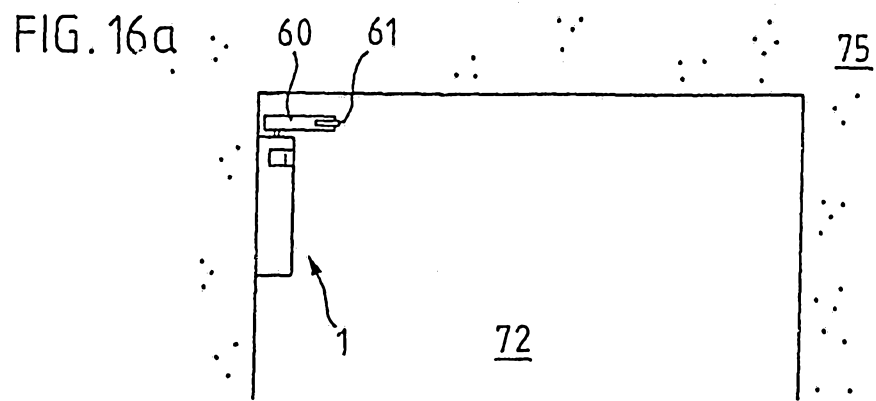


FIG. 15



INTERNATIONALER RECHERCHENBERICHT

Internationales Aktenzeichen

PCT/CH 93/00210

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C. ALS WESENTLICH ANGESEHENE UNTERLAGEN

Kategorie*	Bezeichnung der Veröffentlichung, soweit erforderlich unter Angabe der in Betracht kommenden Teile	Betr. Anspruch Nr.
A	EP,A,0 127 573 (CWS AG) 5. Dezember 1984 in der Anmeldung erwähnt siehe Zusammenfassung; Abbildung 4 ----	1,14,15
A	FR,A,2 553 303 (CHALAND) 19. April 1985 siehe Zusammenfassung; Abbildung 2 -----	1,14,15

☐ Weitere Veröffentlichungen sind der Fortsetzung von Feld C zu entnehmen☒ Siehe Anhang Patentfamilie

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4. November 1993

Abschließdatum des internationalen Recherchenberichts

11.11.93

Name und Postanschrift der Internationalen Recherchenbehörde

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NL - 2280 HV Rijswijk
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Bevollmächtigter Bediensteter

GUASTAVINO, L

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Angaben zu Veröffentlichungen, die zur selben Patentfamilie gehören

Internationales Aktenzeichen

PCT/CH 93/00210

Im Recherchenbericht angeführtes Patentdokument	Datum der Veröffentlichung	Mitglied(er) der Patentfamilie	Datum der Veröffentlichung
EP-A-0127573	05-12-84	DE-A- 3413810	18-10-84
		JP-B- 5000104	05-01-93
		JP-A- 59199071	12-11-84
		US-A- 4579261	01-04-86

FR-A-2553303	19-04-85	KEINE	

INTERNATIONAL SEARCH REPORT

International Application No

PCT/CH 93/00210

A. CLASSIFICATION OF SUBJECT MATTER
IPC 5 B05B11/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 5 B05B B65D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	EP,A,0 127 573 (CWS AG) 5 December 1984 cited in the application see abstract; figure 4 ---	1, 14, 15
A	FR,A,2 553 303 (CHALAND) 19 April 1985 see abstract; figure 2 -----	1, 14, 15

☐ Further documents are listed in the continuation of box C.☒ Patent family members are listed in annex.

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Date of mailing of the international search report

11. 11. 93

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information on patent family members

International Application No

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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
EP-A-0127573	05-12-84	DE-A- 3413810 JP-B- 5000104 JP-A- 59199071 US-A- 4579261	18-10-84 05-01-93 12-11-84 01-04-86
FR-A-2553303	19-04-85	NONE	