

Description

BACKGROUND OF THE UTILITY MODEL

5 (a) Technical Field of the Utility Model

[0001] The utility model relates to a police appliance, in particular to an indoor anti-riot catcher that protects people's assets from robbery and theft.

10 (b) Description of the Prior Art

[0002] At present, besides security guards, most of the banks, gold and jewelry stores, and other important units are equipped with CCTV monitoring systems. The drawback of the system is: it is mainly designed to provide video as a clue to solve the case after an event; therefore, it is a passive protection system thus is unable to catch the suspect on the spot.

SUMMARY OF THE UTILITY MODEL

[0003] In view that there is no indoor apparatus that can effectively catch the suspects on the spot yet, the utility model provides an indoor anti-riot catcher, which can shoot out a high strength net from a ceiling or a wall to wrap the suspect who is committing the crime thus catch the same.

[0004] The technical solution of the utility model is as following:

[0005] An indoor anti-riot catcher comprising a casing, pressurized gas containers, a shooting head, and shooting mechanisms; said casing is mounted on an indoor ceiling; said pressurized gas containers are two or more, they are mounted in the casing; said shooting head is mounted under one of the containers; several bullet holes inclining outward at a certain angle are distributed along the periphery of the said shooting head; each of said bullet hole has one bullet in it; said bullets are connected to the net in a net storage pipe of the shooting head through connecting strings; a T-joint is mounted under another pressurized gas container and is connected to a container orifice and two small containers; one of the small containers contains color paint, the other contains a stimulating substance or fluorescent powder; several nozzles are mounted under each small container; shooting mechanisms are mounted at the orifice of each pressurized gas container and may be controlled by a central monitoring system or a CCTV monitoring system.

[0006] Said shooting mechanisms mounted at the orifice of each pressurized gas container may be electro-magnetic valves, which are controlled by a concealed switch or a monitoring system.

[0007] Said shooting mechanisms mounted at the orifice of each pressurized gas container may also be fuse-resistor triggered type, i.e., respectively, frames are mounted at the orifice of each container, the frames connect to the orifices through screw threads; the orifices are sealed with rubber plugs, which are pressed with pressing plates; tightening strings at one end of the pressing plates are connected to protruding poles on the frames; the tightening strings are wound with wire resistors; at each end of the wire resistors configures riveted rings, each of the riveted rings is fixed on the tightening string and is connected to a control switch through a lead.

[0008] The technical solution of the utility model may also be:

[0009] An indoor anti-riot catcher comprises a casing, pressurized gas containers, a shooting head, and shooting mechanisms; said casing is mounted on an indoor wall or at a corner; the frames of said pressurized gas containers are mounted in the casing and detachably connects to the casing; a shooting head is mounted under one of the pressurized gas containers, and several bullet holes inclining outward at a certain angle are distributed along the periphery of the shooting head; one bullet in each bullet hole and the bullets are connected to the net in a net storage pipe of the shooting head through connecting strings; shooting mechanisms are mounted at the orifice of the containers and are controlled by a central monitoring system or a CCTV monitoring system.

[0010] Said shooting mechanism mounted at the orifice of the container may be fuse resistor triggered type, hand-held spinning-blade cut type, or small hand-held, fixed dual type; respectively, frames are mounted at the orifice of each containers, the frames connect to the orifices through screw threads; the orifices are sealed with rubber plugs, which are pressed with pressing plates; tightening strings at one end of the pressing plates are connected to protruding poles on the frames; the tightening strings are wound with wire resistors; at each end of the wire resistors configures riveted rings, and the riveted rings are connected to a control switch through leads; electrodes are mounted on the frames and on the casing; the electrodes on the frames and the electrodes on the casing are mated to each other after installation; a blade is mounted on the inner wall of a rotary sleeve of the frame.

[0011] The benefits of the present utility model include:

1. The utility model utilizes high pressure gas in the pressurized gas containers mounted on a indoor ceiling or a

wall as the power source to trigger the shooting mechanism, which releases the high pressure gas thus pushes out the bullets in the bullet holes of the shooting head; the bullets in turn pull out the net in a umbrella-like shape to cover and wrap the suspect, make the suspect unable to escape or struggle; therefore capture the suspect effectively, without injuring the police and people around.

2. The ceiling-mounted catcher is not only equipped with a shooting head but also another pressurized gas container, which can release high pressure gas to spray out stimulating substance and color paint from the small containers under it, causing the suspect unable to open eyes, difficult to breathe and subjects to a strong burning pain, thus the suspect fails temporarily to continue the crime, it wins the time for the police to arrive. Even if the suspect breaks the net and escapes, he will be noticed by people due to the significant color paint sprayed on him, providing valuable witness clues for solving the case later. At night, it can also spray fluorescent powder on the suspect, so that the suspect is exposed.

3. For a ceiling-mounted catcher, the shooting mechanism may be electro-magnetic valve triggered type or fuse resistor triggered type; for a wall-mounted catcher, the shooting mechanism may be electric fuse triggered type or hand-held spinning blade cut type, so that security personnel can take down the catcher from the wall and shoot at the suspect with it in hand; therefore, the shooting types of the utility model are various, and each type is simple in structure and easy to use.

4. The control unit of the utility model is designed at a concealed place that is easy to access; therefore, the utility model can trap the suspect quickly and effectively; the utility model can be connected to an internal alarm system in a police station or be controlled in a remote mode by a central monitoring system in financial enterprises.

5. Combined with existing CCTV monitoring systems of the banks, the utility model delivers great deterrent to criminals and can effectively prevent major crime (e.g., robbery, theft) in banks and jewelry stores.

BRIEF DESCRIPTION OF THE DRAWINGS

[0012]

Fig.1 shows the structure view of a ceiling-mounted indoor catcher according to the utility model;

Fig.2 is a schematic diagram of another type of the shooting mechanism shown in Fig.1;

Fig.3 is a schematic diagram of the shooting mechanism in a wall-mounted indoor catcher according to the utility model.

wherein:

1: Casing container	2, 2a: Pressurized gas
3, 3a, 3b: Ball joint	4, 4a: Manometer
5, 5a: solenoid valve	6: Shooting head
7: Bullet hole	7a: Net storage pipe
8: Bullet	9: Net
10: Cap	11: Paint
11a: Stimulating substance container	12, 12a: Small
13: Nozzle	14: T-joint
15: Connecting string	16, 16a: Frame
17, 17a, 17', 17a': Riveted ring resistor	18, 18a: wire
19, 19a: Pressing plate plug	20, 20a: Rubber
21, 21a: Fastening string	22. Blade
23. Rotary sleeve	

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

[0013] Hereunder, the utility model is further described in the embodiments, with reference to the attached drawings.

[0014] Fig.1 is an ceiling-mounted embodiment of the anti-riot catcher described in the utility model; said indoor anti-riot catcher comprises a casing 1, pressurized gas containers, a shooting head, and shooting mechanisms; said casing 1 is mounted on an indoor ceiling; there are two pressurized gas containers in this embodiment and both of them are mounted in the casing 1; the shooting head 6 is mounted under one container 2; several bullet holes 7 inclining outward at a certain angle are distributed along the periphery of the shooting head 6; one bullet 8 in each bullet hole 7 and the bullets 8 are connected to the net 9 in the net storage pipe 7a of the shooting head 6 through connecting strings 15;

a T-joint 14 is mounted under the other pressurized gas container 2a and is connected to the orifice of the pressurized gas container and two small containers 12, 12a; one of the small containers 12 contains color paint 11, and the other small container 12a contains a stimulating substance 11a, which may be pepper oil or pulverized lime, or fluorescent powder at night; there are several nozzles 13 under each small container 12, 12a; a shooting mechanism is mounted at the orifice of each pressurized gas container respectively and those shooting mechanisms can be online controlled by a central monitoring system or a CCTV monitoring system.

[0015] Said casing 1 is connected to the ceiling via a ball joints 3; the two pressurized gas containers 2, 2a are connected to the casing 1 via ball joints 3b, 3a respectively, so that the overall angle of casing 1 can be adjusted via the ball joints 3, and the angles of two pressurized gas containers can be adjusted via the ball joints 3a, 3b.

[0016] A slide track is mounted on the ceiling; the casing 1 can slide along the slide track or be fixed at an appropriate position.

[0017] A cap 10 is mounted under the shooting head 6 to prevent the bullets 8 and the net 9 from dropping.

[0018] Manometers 4, 4a are mounted at the orifices of the pressurized gas containers 2, 2a respectively to facilitate casual inspections for container pressure.

[0019] The shooting mechanisms mounted on the two pressurized gas containers 2, 2a shown in Fig.1 are equipped with solenoid valves 5, 5a respectively; said solenoid valves are controlled by a concealed switch or a monitoring & control system.

[0020] Fig.2 shows another embodiment of the shooting mechanisms mounted at the orifices of pressurized gas containers 2, 2a; both of the shooting mechanisms are fuse-resistor triggered type; frames 16, 16a are mounted at the orifices of each the pressurized gas container and are connected to the orifices through screw thread connections; each of the orifices is sealed with a rubber plug 20, 20a, the rubber plugs are pressed with controlled releasing pressing plates 19, 19a; tightening strings 21, 21a are mounted on one end of the pressing plates 19, 19a and are connected to protruding poles on the frames 16, 16a; wire resistors 18, 18a are wound on the tightening strings 21, 21a, respectively; riveted rings 17, 17a, 17', 17a' are mounted on each end of the wire resistors 18, 18a and those riveted rings are fixed on the tightening strings and are connected to a power supply and a control switch through leads.

[0021] The operating procedures of ceiling-mounted catcher with solenoid valve triggered shooting mechanism(s) are: turn on the concealed switch to power on the solenoid valve 5, which triggers the pressurized gas container 2 to release high pressure gas; pushed by the high pressure gas, the bullets 8 in the bullets holes 7 fly out and pull out the net 9 from the net storage pipe 7a in a umbrella-like shape to wrap the suspect. At the same time, the solenoid valve 5a on the pressurized gas container 2a is also powered on, so that the high pressure gas rushes through the T-joint 14 into the small container 12a containing stimulating substance 11a, the small container 12 containing color paint 11, and into the nozzles 13 under the small containers; under the pressure of the gas, the plugs on the nozzles are pushed out and the stimulating substance and the color paint are sprayed on the suspect, causing the suspect unable to continue the crime and leaving color marks on the suspect.

[0022] The operating procedures of a ceiling-mounted catcher with fuse resistor triggered shooting mechanism(s) are: switch on the switch so that the current flows through the leads and the riveted rings 17, 17a and fuses the wire resistor 18 wound on the fastening string 21; the high pressure gas in the pressurized gas container 2 pushes out the plug 20 and the pressing plate 19 and forces out the bullets, which in turn pull out the net. At the same time, the high pressure gas in the other pressurized gas container 2a also rushes out to force the small containers to spray stimulating substance and paint.

[0023] The indoor anti-riot catcher described in the utility model can also be mounted on a wall or at a corner. A wall-mounted catcher comprises a casing, pressurized gas containers, a shooting head, and shooting mechanisms; said casing is mounted on a wall or at a corner; the frames of said pressurized gas containers are mounted in the casing and are connected to the casing through boss and recess connection, which is detachable; the shooting head is mounted under the pressurized gas container; several bullet holes inclining outward at a certain angle are distributed along the periphery of the shooting head; one bullet in each bullet hole and the bullets are connected to the net in the net storage pipe of the shooting head through connecting strings; the shooting mechanisms are mounted at the orifices of the pressurized gas containers and may be online controlled to a central monitoring system or a CCTV monitoring system.

[0024] Referring Fig.3, wherein the shooting mechanism at the orifice of the pressurized gas container is fuse resistor triggered type or hand-held spinning blade cut type; a frame 16 is mounted at the orifice of the pressurized gas container and it is connected to the orifice through screw thread connection; the orifice is sealed with a rubber plug, which is pressed with a pressing plate 19; a tightening string 21 is mounted at one end of the pressing plate 19 and it is connected to a protruding pole on the frame; a wire resistor 18 is wind on the tightening string; riveted rings 17, 17a are mounted on each end of the wire resistor 18 and both of the riveted rings are fixed on the tightening string; the riveted rings are connected to a control switch through leads; an electrode is mounted on the frame, and another electrode is mounted on the casing; after installation, the two electrodes are mated to each other; a blade 22 is mounted on the inner wall of a rotary sleeve 23 on the frame 16.

[0025] The wall-mounted catcher can be shot from the wall directly or taken down from the wall and shot manually. In the case of shooting from the wall, turn on the switch to power on the electrodes, so that the wire resistor fuses the tightening string and the high pressure gas rushes out and release the net. In the case of shooting in hand-held manner, take down the catcher from a recess of the wall and turn the rotary sleeve by hand; the blade on the sleeve rotates with the sleeve to cut apart the tightening string, so that the net is released from the shooting head. The net in the shooting mechanism of the utility model may include an electrified net, the voltage of which is not lethal.

Claims

1. An indoor anti-riot catcher, **characterized in** said indoor anti-riot catcher comprises a casing (1), pressurized containers, a shooting head, and shooting mechanisms; said casing (1) is mounted on a ceiling; said pressurized containers are two or more and are mounted in the casing (1); the shooting head (6) is mounted under one pressurized container (2); several bullet holes (7) inclining outward at a certain angle are distributed along the periphery of the shooting head (6); one bullet (8) in each of the bullet holes (7) and the bullets (8) are connected to a net in the net storage pipe (7a) of the shooting head (6) through connecting strings (15); a T-joint (14) is mounted under another pressurized container (2a) and is connected to orifice of the pressurized container and two small containers (12, 12a); one small container (12) contains color paint (11), and the other small container (12a) contains stimulating substance (11a) or fluorescent powder; several nozzles (13) are mounted under the two small containers (12, 12a); the shooting mechanisms are mounted at orifice of each pressurized container respectively and may be controlled to a central monitoring system or a CCTV monitoring system.
2. The indoor anti-riot catcher according to claim 1, **characterized in that** said casing (1) is connected to the ceiling via a ball joint (3); said two or more pressurized containers are connected to the casing (1) via ball joints, respectively.
3. The indoor anti-riot catcher according to claim 1, **characterized in that** a slide track is mounted on the ceiling and the casing (1) can slide along that slide track or be fixed at an appropriate position.
4. The indoor anti-riot catcher according to claim 1, **characterized in that** a cap (10) is mounted under the shooting head (6).
5. The indoor anti-riot catcher according to claim 1, **characterized in that** manometers are mounted at the orifice of each of said two or more pressurized containers.
6. The indoor anti-riot catcher according to claim 1, **characterized in that** said shooting mechanisms mounted at the orifice of each of the two or more pressurized containers are solenoid valves, which are controlled by a concealed switch or a monitoring & control system.
7. The indoor anti-riot catcher according to claim 1, **characterized in that** the shooting mechanisms mounted on said two or more pressurized containers (2, 2a) are fuse-resistor triggered type; respectively, frames (16, 16a) are mounted at the orifice of each pressurized container, and said frames (16, 16a) are connected to the orifice of the pressurized container through screw thread connection, each of the orifices is sealed with a rubber plug (20, 20a), which is pressed with a pressing plate (19, 19a); tightening strings (21, 21a) are mounted at one end of each pressing plates (19, 19a) and are connected to protruding poles on the frames (16, 16a); wire resistors (18, 18a) are wound on the tightening strings (21, 21a), riveted rings (17, 17a, 17', 17a') are mounted at each end of the wire resistors (18, 18a) and those riveted rings are fixed on the tightening strings and are connected to a control switch through leads.
8. An indoor anti-riot catcher, **characterized in that** said indoor anti-riot catcher comprises a casing, pressurized containers, a shooting head, and shooting mechanisms; said casing is mounted on an indoor wall or at a wall corner; the frames of said pressurized containers are mounted in the casing and are connected to the casing through a detachable connection; said shooting head is mounted under said pressurized container; several bullet holes inclining outward at a certain angle are distributed along the periphery of the said shooting head; one bullet in each of the bullet holes, and those bullets are connected to a net in the net storage pipe of said shooting head; said shooting mechanism is mounted at the orifice of said pressurized container and may be online controlled by a central monitoring system or a CCTV monitoring system.

9. The indoor anti-riot catcher according to claim 8, **characterized in that** said shooting mechanism mounted at the orifice of the container is fuse-resistor triggered type or hand-held spinning blade triggered hand-held/fixed type; the frame (16) of said shooting mechanism is mounted at the orifice of the container and is connected to the orifice of the container through screw thread connection; the orifice is sealed with a rubber plug, which is pressed with a pressing plate (19); there is a tightening strings (21) at one end of the pressboard (19) and said tightening string (21) is connected to a protruding pole on the frame; a wire resistor (18) is wound on the tightening rope; there are riveted rings (17, 17a) at each side of the wire resistor (18) and the riveted rings are fixed on the tightening string; said riveted rings are connected to a control switch through leads; an electrode is mounted on the frame, and another electrode is mounted on the casing; the two electrodes are mated to each other after installation; a blade (22) is mounted on the inner wall of a rotate sleeve (23) of the frame (16).
10. The indoor anti-riot catcher according to claim 1 or 8, **characterized in that** an electrified net with non-lethal voltage may be incorporated into said net.

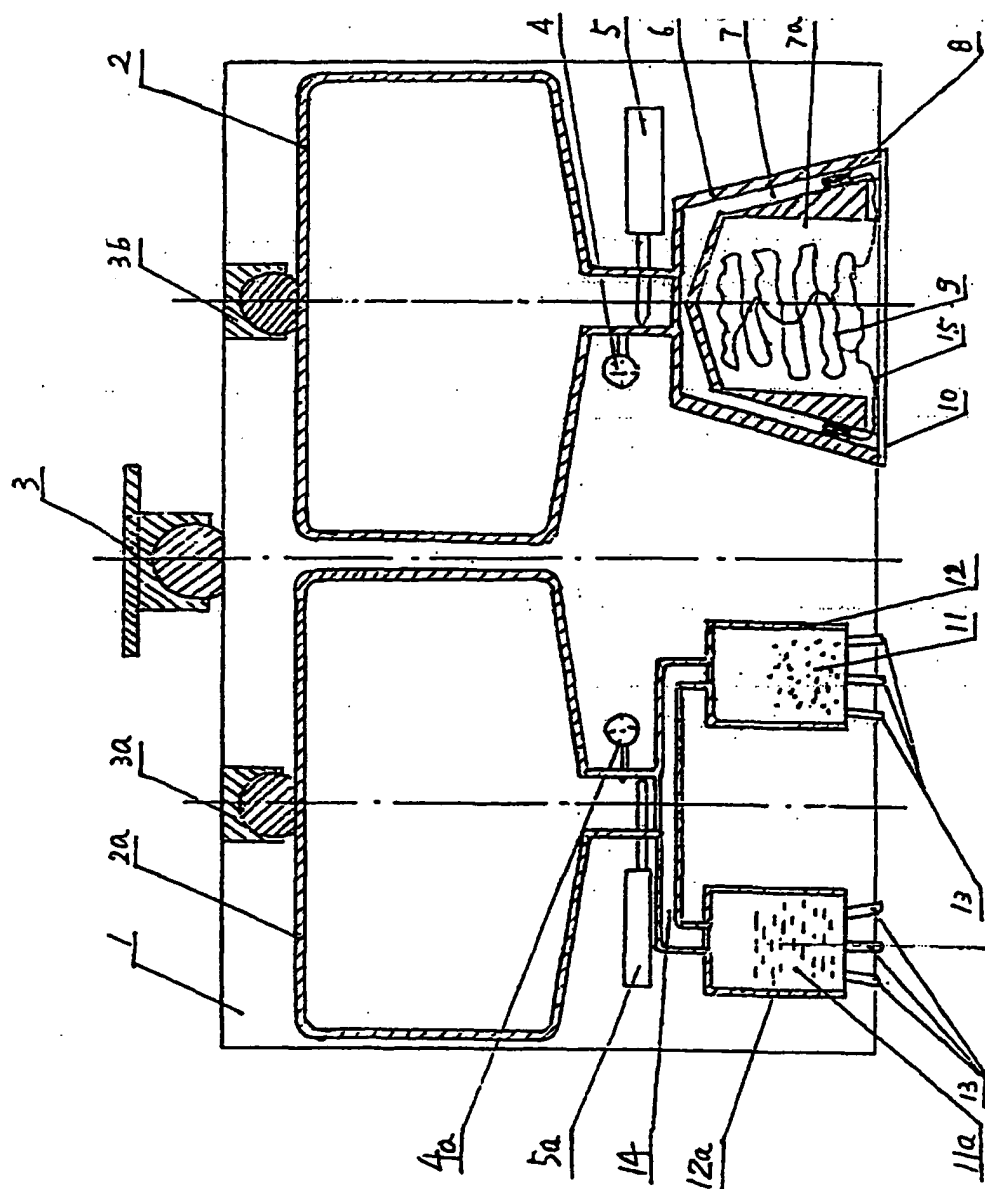


Fig. 1

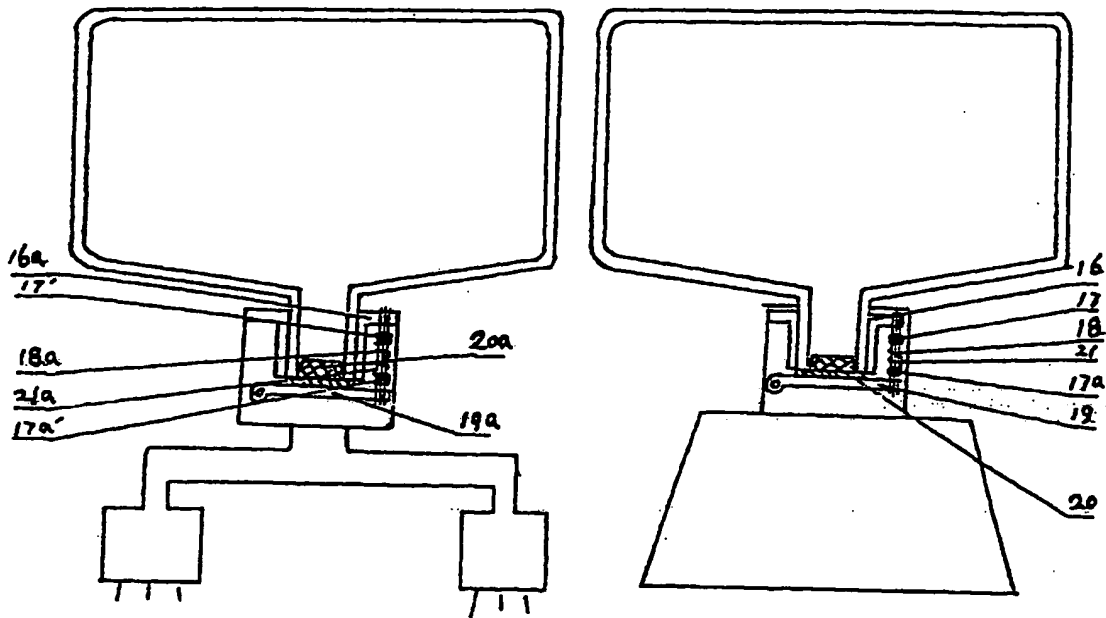


Fig. 2

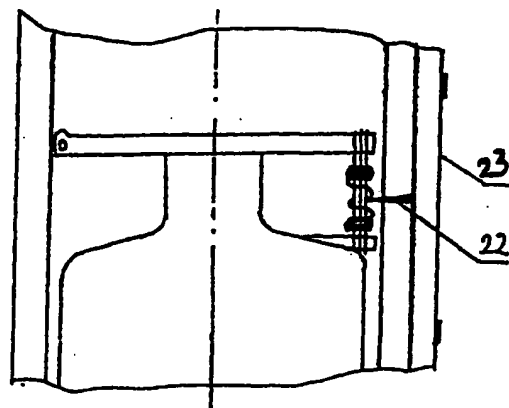
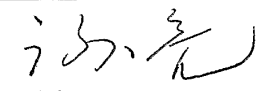


Fig. 3

INTERNATIONAL SEARCH REPORT

International application No.
PCT/CN02/00500

A. CLASSIFICATION OF SUBJECT MATTER		
IPC ⁷ : G08B15/00		
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 ⁷ : G08B15/00, F41B15/10, 15/00, F41H13/00		
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched		
Documents of Chinese patent and utility model		
Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)		
EPODOC, WPI, PAJ, CNPAT		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	DE19706632(Daimler Banz Arospace, DE)(03.Sep.1998,03.09.98)	1
A		2-10
Y	CN1117176A(ZHNG, Jingxin, CN)(21.Sep.1996, 21.02.96)(claim 1)	1
Y	WO97/23852(BUGIEL, Horst, Georg, DE)(03.Jul.1997,03.07.97)	1
Y	CN2378495Y(WANG, Zhenhu, CN)(17.May2000, 17.05.00)(Abstract)	1
☐ Further documents are listed in the continuation of Box C. ☒ See patent family annex.		
* Special categories of cited documents: "A" document defining the general state of the art which is not considered to be of particular relevance "E" earlier application or patent but published on or after the international filing date "L" document which may throw doubts on priority claim (S) or which is cited to establish the publication date of another citation or other special reason (as specified) "O" document referring to an oral disclosure, use, exhibition or other means "P" document published prior to the international filing date but later than the priority date claimed "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art "&" document member of the same patent family		
Date of the actual completion of the international search 05.Mar.2003(05.03.03)		Date of mailing of the international search report 27 MAR 2003 (27.03.03)
Name and mailing address of the ISA/CN 6 Xitucheng Rd., Jimen Bridge, Haidian District, 100088 Beijing, China Facsimile No. 86-10-62019451		Authorized officer  Telephone No. 86-10-62093420

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Information on patent family membersInternational application No.
PCT/CN02/00500

Cited document	Publication date	Family document	Publication date
DE19706632	03.Sep.1998(03.09.98)	EP0860683	26.Aug.1998(26.08.98)
CN1117176A	21.Feb.1996(21.02.96)	None	
WO97/23852	03.Jul.1997(03.07.97)	DE2952036U	13.Jun.1996(13.06.96)
		DE29619694U	13.Jun.1996(13.06.96)
CN2378495Y	17.May2000(17.05.00)	None	

Form PCT/ISA /210 (patent family annex) (July 1998)