(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) EP 1 739 354 A1

(12) **EUROPEAN PATENT APPLICATION**
published in accordance with Art. 158(3) EPC

(43) Date of publication:
03.01.2007 Bulletin 2007/01

(21) Application number: **05741931.9**

(22) Date of filing: **12.04.2005**

(51) Int Cl.:
F23Q 2/16 *(2006.01)*

(86) International application number:
PCT/CN2005/000483

(87) International publication number:
WO 2005/100860 (27.10.2005 Gazette 2005/43)

(84) Designated Contracting States:
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IS IT LI LT LU MC NL PL PT RO SE SI SK TR

(30) Priority: **17.04.2004 CN 200420026460**

(71) Applicant: **Wu, Aiming**
Wenzhou, Zhejiang 325000 (CN)

(72) Inventor: **Wu, Aiming**
Wenzhou, Zhejiang 325000 (CN)

(74) Representative: **Intes, Didier Gérard André et al**
Cabinet Beau de Loménie,
158, rue de l'Université
75340 Paris Cedex 07 (FR)

(54) **A DOUBLE FLAME LIGHTER**

(57) The present invention relates to a lighter filled with gas fuel, particularly to a double-flame lighter. It comprises two flame assemblies, i.e., a first flame assembly and a second flame assembly, disposed on a housing, igniters, a gas tank provided with a gas outlet valve, and an ignition button. There are two igniters, and a gas nozzle of the gas outlet valve is a double-headed gas nozzle whose two gas outlet pipes communicate with the first flame assembly and the second flame assembly respectively. A two-way spring board is disposed on the gas outlet valve, and a two-way movable ignition button that actuates the igniters and the two-way spring board is disposed on the housing. There is a switch mechanism disposed between the ignition button and the gas outlet pipe for controlling closing or opening of the gas outlet pipe. The invention has the advantages of a simple structure with convenient operation and safety.

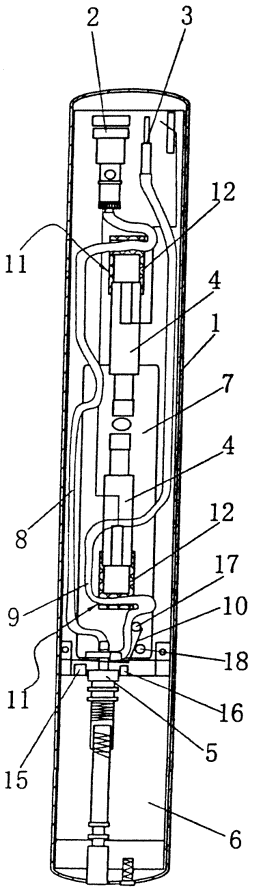

FIG. 1

EP 1 739 354 A1

Description

FIELD OF THE INVENTION

[0001] The present invention relates to a lighter, particularly to a double-flame lighter.

BACKGROUND OF THE INVENTION

[0002] At present, a double-flame lighter mainly includes two kinds of structures. One has a double-flame nozzle assembly. Conversion between naked flame and windproof flame is achieved in one flame nozzle assembly (windproof flame assembly) by a flame converting mechanism and a gas supply controlling mechanism, e.g., the Chinese patent with patent number of 92100999.2, grant announcement number of CN1055336C, entitled with "Double-Flame Lighter with High Ignition Efficiency", and the Chinese patent application with application number of 92109388.8, publication number of CN1082692A, entitled with "Double-Flame Lighter", are of the structure mentioned above. The other has two separate flame assemblies, both of which may be naked flame assemblies or windproof flame assemblies, or one of which is naked flame assembly and the other of which is windproof flame assembly, or other forms of flame assemblies, e.g., jet flame assemblies, e.g., the Chinese patent of utility model with patent number of 01210364.0, grant announcement number of CN2465069Y, entitled with "Multi-flame Lighter". Said multi-flame lighter comprises more than two flame assemblies, a housing, an igniter, a gas outlet valve, a gas tank, an ignition switch, and a spring board which is interlocked with the ignition switch and activates the gas outlet valve to exhaust. The key point of the multi-flame lighter lies in that conversion of the flames is achieved by a rotatable conversion wheel. Disadvantage of the lighter is that the conversion wheel has to be turned first to obtain a flame of the other form, which is inconvenient. Moreover, the conversion wheel tends to be damaged and cause leakage under frequent turn.

SUMMARY OF THE INVENTION

[0003] The problem to be solved by the present invention is to overcome shortcomings of the prior art, and provide a double-flame lighter of simple structure with convenient operation and safety.

[0004] The technical solution adopted in the present invention to solve the technical problem mentioned above is as follows: a double flame lighter comprises two flame assemblies, i.e., a first flame assembly and a second flame assembly, disposed on a housing, igniters, a tank provided with a gas outlet valve, and an ignition button. There are two igniters, and a gas nozzle of the gas outlet valve is a double-headed gas nozzle whose two gas outlet pipes are communicated with the first flame assembly and the second flame assembly respectively. A two-way spring board is disposed on the gas outlet valve, and a two-way movable ignition button that is actuated with the igniters and the two-way spring board is disposed on the housing. There is a switch mechanism disposed between the ignition button and the gas outlet pipe for controlling closing or opening of the gas outlet pipe.

[0005] Advantages of the invention are as follows: only the two-way movable ignition button and the two-way spring board are used in the present invention and the double-flame ignition is achieved by the switch mechanism of the gas outlet pipe. So the invention has advantages of a simple structure with convenient operation and safety.

BRIEF DESCRIPTION OF THE DRAWINGS

[0006]

Fig. 1 is a structural schematic view of the first embodiment of the invention.

Fig. 2 is a structural schematic view of the second embodiment of the invention.

Fig. 3 is a structural schematic view of the third embodiment of the invention.

Fig. 4 is a structural schematic view of the fourth embodiment of the invention.

DETAILED DESCRIPTION OF THE INVENTION

[0007] The present invention will be further described with reference to the drawings and the embodiments.

[0008] As shown in Fig. 1, which is a structural schematic view of the first embodiment of the invention, a double-flame lighter comprises two flame assemblies, i.e., a first flame assembly 2 and a second flame assembly 3, disposed on a housing 1, igniters 4, a gas tank 6 provided with a gas outlet valve 5, and an ignition button 7. There are two igniters, and a gas nozzle of the gas outlet valve is a double-headed gas nozzle whose two gas outlet pipes 8, 9 communicate with the first flame assembly 2 and the second flame assembly 3 respectively. A two-way spring board 10 is disposed on the gas outlet valve 5, and a two-way movable ignition button 7 that actuates the igniters 4 and the two-way spring board 10, with which it is matched, is disposed on the housing. Two fulcrums 15, 16 of the spring board are disposed on the gas tank 6, and two press pieces 17, 18 are disposed on the ignition button 7. A switch mechanism 11 for controlling closing or opening of the gas outlet pipes 8, 9 is also provided on the ignition button 7 and the housing 1. Said igniters 4 are movably disposed in an igniter groove 12, which is fixedly connected to the housing 1. The gas outlet pipes 8, 9 pass between the igniters 4 and the bottom surface of the igniter groove 12. When the ignition button 7 is pressed, the igniters 4 will move in company with the ignition button 7, oppress the gas pipes, and then close the gas path. When the ignition button 7 is

released, the igniters 4 will restitute under the resilience of the gas pipes 8 or 9, and then the gas path is opened. Thereby, the switch mechanism 11 for closing or opening the gas path is formed. Said two igniters 4 are disposed in rectilinear direction in the housing 1.

[0009] The second embodiment of the invention, whose structural schematic view is shown in Fig. 2, differs from the first embodiment only in that said igniters 4 are disposed in parallel in the housing 1.

[0010] The difference between the third embodiment of the invention, whose structural schematic view is shown in Fig. 3, and the first embodiment lies in the switch mechanism 11. In this embodiment, said igniters 4 are fixedly disposed in the housing 1, and the press pieces 13, 14 of the gas pipes are disposed on the ignition button 7 and the housing 1 respectively. The gas outlet pipes 8, 9 pass between the two press pieces 13, 14, and the press piece 13 on the ignition button 7 moves in company with it and oppresses the gas outlet pipes. Thus, the switch mechanism 11 for closing or opening the gas path is formed.

[0011] The fourth embodiment of the invention, whose structural schematic view is shown in Fig. 4, differs from the third embodiment only in that said igniters 4 are disposed in parallel in the housing 1.

[0012] It is to be noted that the two-way action of the ignition button 7 may be a linear reciprocating motion or a swaying motion, both of which will fall into the scope of the invention.

Claims

1. A double-flame lighter, comprising two flame assemblies, i.e., a first flame assembly and a second flame assembly, disposed on a housing, igniters, a gas tank provided with a gas outlet valve, and an ignition button, **characterized in that** there are two igniters, and a gas nozzle of the gas outlet valve is a double-headed gas nozzle whose two gas outlet pipes communicate with the first flame assembly and the second flame assembly respectively, a two-way spring board is disposed on the gas outlet valve, a two-way movable ignition button that actuates the igniters and the two-way spring board is disposed on the housing, a switch mechanism for controlling closing or opening of the gas outlet pipes is disposed on the ignition button and the housing.

2. The double-flame lighter according to claim 1, **characterized in that** the igniters are movably disposed in an igniter groove which is fixedly connected to the housing, the gas outlet pipes pass between the igniters and the bottom surface of the igniter groove, the igniters move in company with the ignition button and oppress the gas pipes, thereby, the switch mechanism for closing or opening the gas path is formed.

3. The double flame lighter according to claim 1, **characterized in that** said igniters are fixedly disposed in the housing, press pieces of the gas pipes are disposed on the ignition button and the housing respectively, the gas outlet pipes pass between the two press pieces, the press piece on the ignition button moves in company with the ignition button and oppresses the gas pipes, thus, the switch mechanism for closing or opening the gas path is formed.

4. The double flame lighter according to claim 1, or 2, or 3, **characterized in that** said igniters are disposed in parallel in the housing.

5. The double flame lighter according to claim 1, or 2, or 3, **characterized in that** said igniters are disposed in rectilinear direction in the housing.

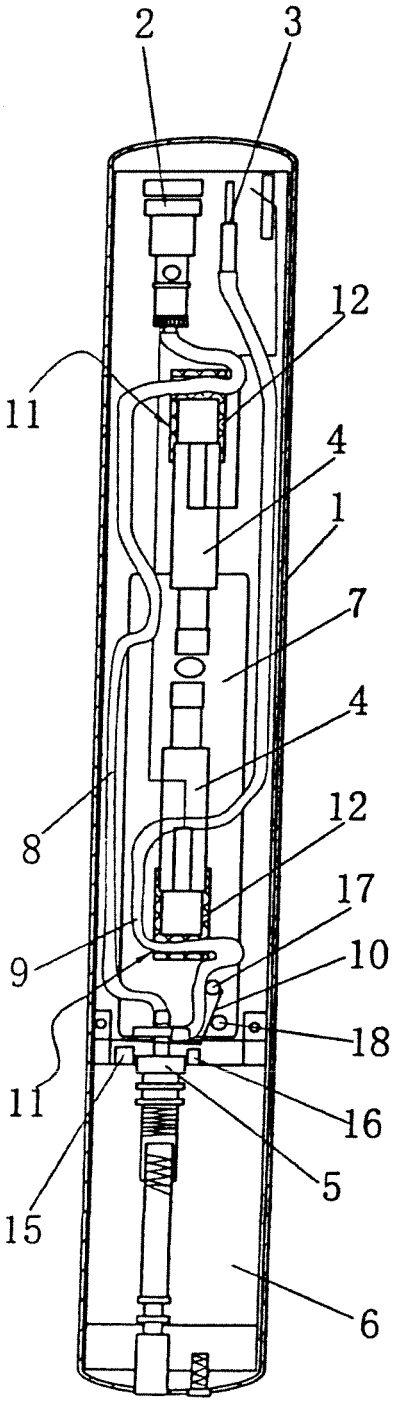
2
3
12
11
4
1
7
4
8
12
17
9
10
18
11
16
5
15
6

FIG. 1

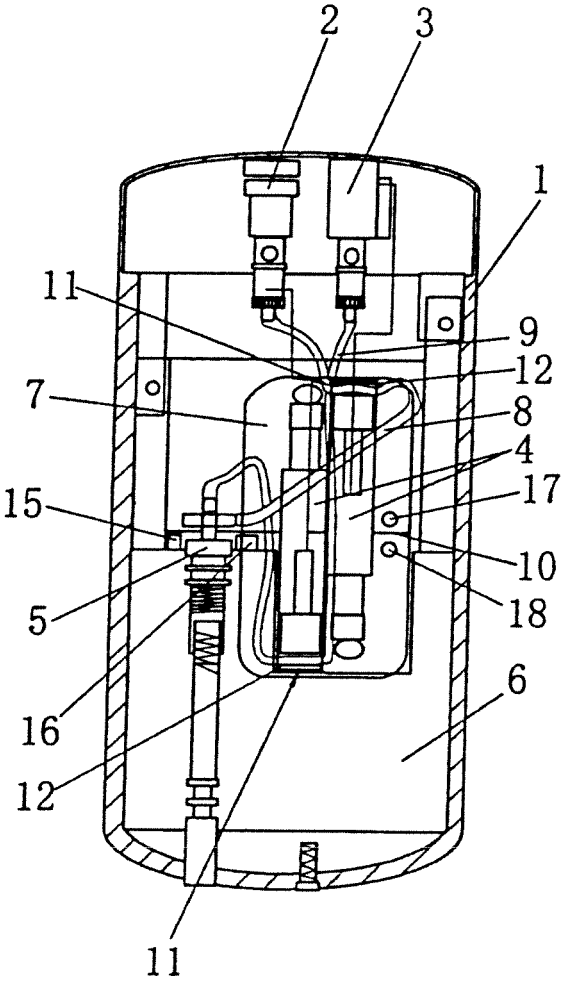
2
3
1
11
9
12
7
8
4
15
17
10
5
18
6
16
12
11

FIG. 2

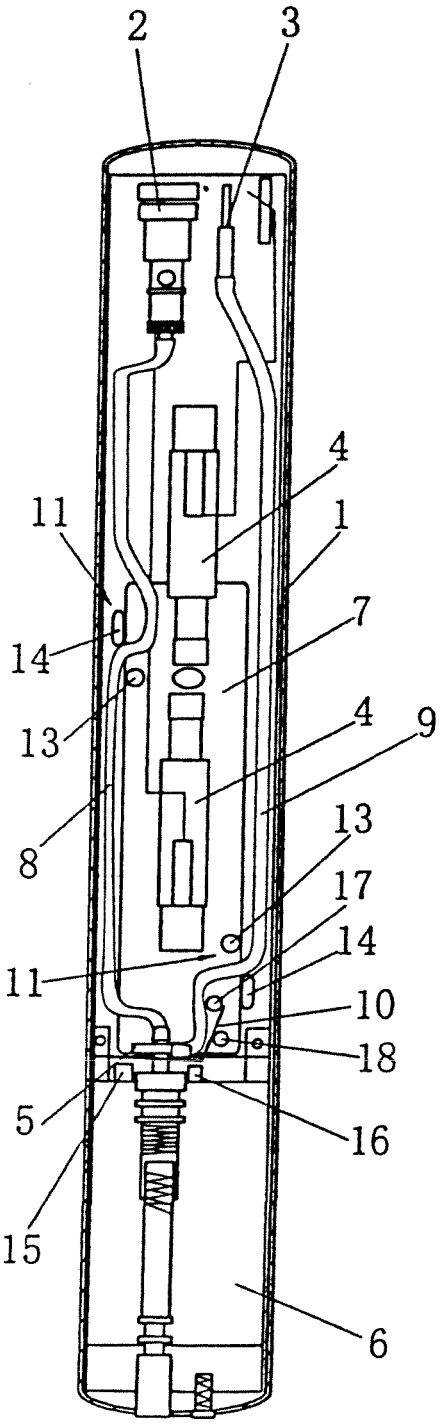
2
3
4
11
1
14
7
13
4
9
8
13
17
11
14
10
18
5
16
15
6

FIG. 3

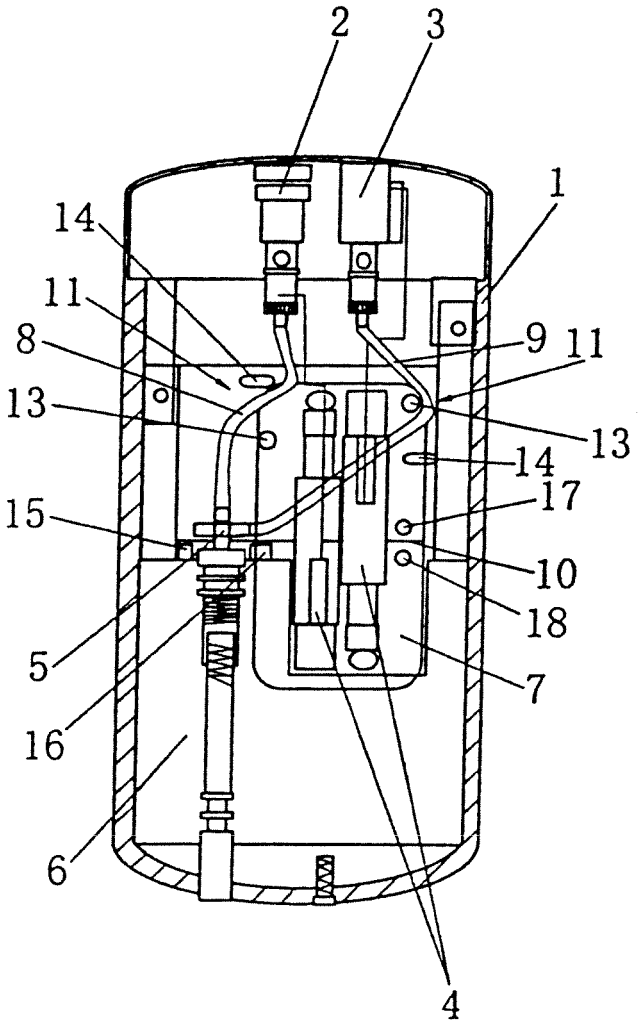
2
3
1
14
11
9
11
8
13
13
14
15
17
10
18
5
7
16
6
4

FIG.4

INTERNATIONAL SEARCH REPORT

International application No.
PCT/CN2005/000483

A. CLASSIFICATION OF SUBJECT MATTER

IPC[7] F23Q2/16

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] F23Q

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

CHINA PATENT DOCUMENT (1985—)

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

WPI,PAJ,EPODOC,CNPAT 双火苗 打火机 点火器 气体 阀 double flame lighter igniter gas valve

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US5308240A (COLIBRI LIGHTERS LTD) 03.May 1994 (03.05.1994) the whole document	1-5
A	US5055034A (WANG Zhilin) 08.Oct. 1991 (08.10.1991) the whole document	1-5
A	CN1076263A (WANG Zhilin) 15.Sept. 1993 (15.09.1993) the whole document	1-5
A	CN1082692A (WANG Zhilin) 23.Feb. 1994 (23.02.1994) the whole document	1-5

☐ 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	Date of mailing of the international search report
06/06/2005 (06.06.2005)	28 · 7月 2005 (28 · 07 · 2005)
Name and mailing address of the ISA/	Authorized officer 钧杨 Yang XiangJun
Facsimile No.	Telephone No. (86-10)62085046

Form PCT/ISA /210 (second sheet) (January 2004)

INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.
PCT/CN2005/000483

Patent document Cited in search report	Publication date	Patent family members	Publication date
US5308240A	03-05-1994	KR132284 B1	15-04-1998
		WO9119134A	12-12-1991
		CN1057101A	18-12-1991
		EP0532573A1	24-03-1993
		JP5506497T	22-09-1993
		EP0532573B1	13-07-1994
		DE69102875E	18-08-1994
		ES2056652T	01-10-1994
US5055034A	08-10-1991	EP0410313A	30-01-1991
		EP0410313B1	08-10-1991
		DE69009884E	21-07-1994
CN1076263A	15-9-1993	CN1055336C	09-08-2000
		GB2259755A	24-03-1993
CN1082692A	23-02-1994	NONE	

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

REFERENCES CITED IN THE DESCRIPTION

This list of references cited by the applicant is for the reader's convenience only. It does not form part of the European patent document. Even though great care has been taken in compiling the references, errors or omissions cannot be excluded and the EPO disclaims all liability in this regard.

Patent documents cited in the description

- CN 92100999 **[0002]**
- CN 1055336 C **[0002]**
- CN 92109388 **[0002]**
- CN 1082692 A **[0002]**
- CN 01210364 **[0002]**
- CN 2465069 Y **[0002]**