PCT WORLD INTELLECTUAL PROPERTY ORGANIZATION
International Bureau

INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification 6 : H01R 13/639 — A1

(11) International Publication Number: **WO 99/60670**

(43) International Publication Date: 25 November 1999 (25.11.99)

(21) International Application Number: PCT/US99/10926

(22) International Filing Date: 18 May 1999 (18.05.99)

(30) Priority Data:
09/080,846 18 May 1998 (18.05.98) US

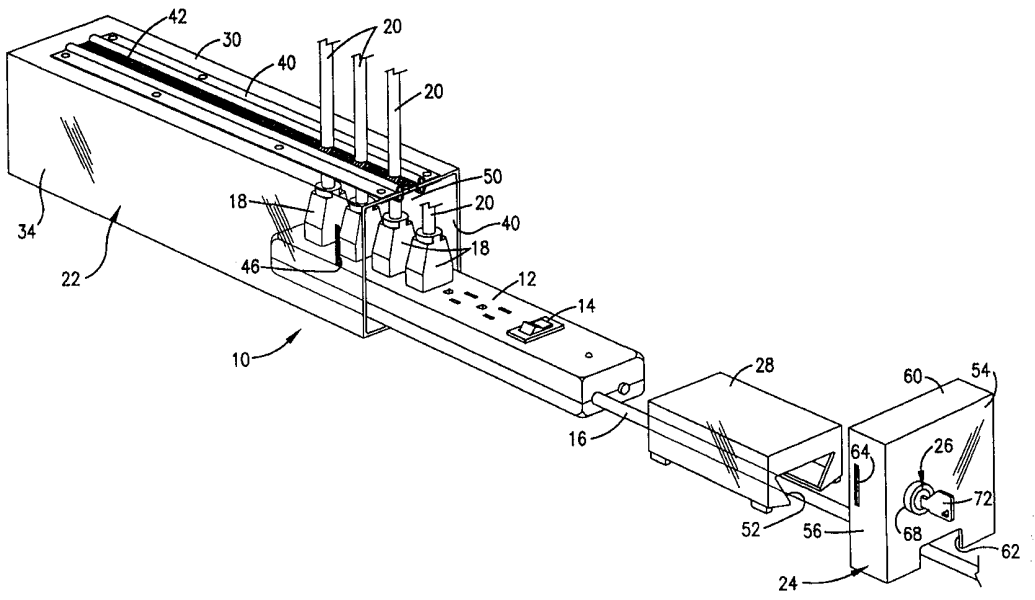
(71)(72) Applicant and Inventor: FOSTER, Albert, J. [US/US]; 919 Grand, St. Joseph, MO 64505 (US).

(74) Agent: LUEBBERING, Thomas, B.; Hovey, Williams, Timmons & Collins, Suite 400, 2405 Grand Boulevard, Kansas City, MO 64108 (US).

(81) Designated States: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

Published
With international search report.

(54) Title: LOCK BOX FOR POWER STRIP



(57) Abstract

A preferred power strip lock box apparatus (10) includes a housing (22) with a compartment (50) configured for containing a power strip (12) having an on/off switch (14) therein with one end of the apparatus having an access opening (40). The apparatus (10) further includes a key operated, lockable end cap (24) for closing the access opening (40), and a cord slot (42) for allowing the power cord (20) of an electrical plug (18) received in the power strip (12) to extend from the apparatus (10) while preventing access to the plug (18) or power strip (12). In use, the power strip switch (14) cannot be accessed without the key (72) for removing the end cap (24).

FOR THE PURPOSES OF INFORMATION ONLY

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

AL	Albania	**ES**	Spain	**LS**	Lesotho	**SI**	Slovenia
AM	Armenia	**FI**	Finland	**LT**	Lithuania	**SK**	Slovakia
AT	Austria	**FR**	France	**LU**	Luxembourg	**SN**	Senegal
AU	Australia	**GA**	Gabon	**LV**	Latvia	**SZ**	Swaziland
AZ	Azerbaijan	**GB**	United Kingdom	**MC**	Monaco	**TD**	Chad
BA	Bosnia and Herzegovina	**GE**	Georgia	**MD**	Republic of Moldova	**TG**	Togo
BB	Barbados	**GH**	Ghana	**MG**	Madagascar	**TJ**	Tajikistan
BE	Belgium	**GN**	Guinea	**MK**	The former Yugoslav Republic of Macedonia	**TM**	Turkmenistan
BF	Burkina Faso	**GR**	Greece			**TR**	Turkey
BG	Bulgaria	**HU**	Hungary	**ML**	Mali	**TT**	Trinidad and Tobago
BJ	Benin	**IE**	Ireland	**MN**	Mongolia	**UA**	Ukraine
BR	Brazil	**IL**	Israel	**MR**	Mauritania	**UG**	Uganda
BY	Belarus	**IS**	Iceland	**MW**	Malawi	**US**	United States of America
CA	Canada	**IT**	Italy	**MX**	Mexico	**UZ**	Uzbekistan
CF	Central African Republic	**JP**	Japan	**NE**	Niger	**VN**	Viet Nam
CG	Congo	**KE**	Kenya	**NL**	Netherlands	**YU**	Yugoslavia
CH	Switzerland	**KG**	Kyrgyzstan	**NO**	Norway	**ZW**	Zimbabwe
CI	Côte d'Ivoire	**KP**	Democratic People's Republic of Korea	**NZ**	New Zealand		
CM	Cameroon			**PL**	Poland		
CN	China	**KR**	Republic of Korea	**PT**	Portugal		
CU	Cuba	**KZ**	Kazakstan	**RO**	Romania		
CZ	Czech Republic	**LC**	Saint Lucia	**RU**	Russian Federation		
DE	Germany	**LI**	Liechtenstein	**SD**	Sudan		
DK	Denmark	**LK**	Sri Lanka	**SE**	Sweden		
EE	Estonia	**LR**	Liberia	**SG**	Singapore		

LOCK BOX FOR POWER STRIP

BACKGROUND OF THE INVENTION

1. FIELD OF THE INVENTION

The present invention relates to the field of power strip locking devices. In particular, the invention is concerned with a power strip lock box apparatus including a housing with a compartment configured for containing a power strip with one end of the apparatus having an access opening closable by a key operated, lockable end cap.

2. DESCRIPTION OF THE PRIOR ART

Many electrical devices are not equipped with a lockable on/off switch. Because of this, unauthorized personnel can operate the devices.

SUMMARY OF THE INVENTION

The present invention solves the prior art problem mentioned above and provides a distinct advance in the state of the art. More particularly, the lock box apparatus hereof prevents unauthorized use of electrical devices.

The preferred lock box apparatus includes a housing with a compartment configured to contain a power strip having an on/off switch with one end of the housing presenting an access opening. The apparatus further

includes a lockable end cap for releasably closing the access opening to prevent access to the power strip and the on/off switch.

The power cords of electrical plugs received in the power strip extend through a cord slot in the top wall of the housing with the slot being narrow enough to prevent removal of the plug. The power cord of the power strip extends through a cord aperture in the end cap. The preferred embodiment also includes a switch cover over the on/off switch to prevent access to the switch through the cord slot. Other preferred aspects of the present invention are disclosed herein.

BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1 is an exploded pictorial view of the lock box apparatus in accordance with the present invention shown in use with a power strip and electrical plugs.

Fig. 2 is a top plan view in partial section of the apparatus of Fig. 1;

Fig. 3 is a left side elevational view in partial section of the apparatus of Fig. 1;

Fig. 4 is a partial sectional view taken along line 4-4 of Fig. 3; and

Fig. 5 is a sectional view taken along line 5-5 of Fig. 3.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

The drawing figures illustrate preferred lock box apparatus 10 in accordance with the present invention. In particular, the drawing figures illustrate apparatus 10 in use with power strip 12 having on/off switch 14 and power cord 16 extending therefrom and with a plurality of electrical plugs 18 having respective power cords 20 extending therefrom. As illustrated, plugs 18 are received in respective electrical receptacles of strip 12.

Apparatus 10 includes housing 22, end cap 24, lock 26 and switch cover 28. Housing 22, end cap 24 and switch cover 28 are preferably composed of synthetic resin material.

Housing 22 includes top wall 30, bottom wall 32, left side wall 34, right side wall 36 and end wall 38. Walls 30-36 define access opening 40 in the end of housing 22 opposite end wall 38.

Top wall 30 is configured to present cord slot 42 extending along the length thereof and open at access opening 40. Synthetic resin slot liner 44 is riveted to top wall 30 and positioned along either side of slot 42. Liner 44 protects power cords 20 of plugs 18 from being abraded by the edges of slot 42 and also stiffens the walls adjacent slot 42.

Left side wall 34 includes locking lever slot 46 defined therein adjacent access opening 40 as best viewed in Figs. 1-3. Right side wall 36 includes coupling tab 48 extending from the exterior face thereof also adjacent access opening 40. Lever slot 46 and tab 48 are used in

coupling end cap 24 with housing 22 as explained further herein.

Walls 30-38 define compartment 50 configured for receiving and containing power strip 12. Access opening 40 enables placement of power strip 12 with attached plugs 18 into compartment 50 and removal therefrom. As best viewed in Fig. 1, the power cords 20 of plugs 18 extend through cord slot 42. However, slot 42 is narrow enough to prevent removal of plugs 18 (and strip 12) therethrough.

Switch cover 28 is configured to enclose one end of power strip 12. In particular, cover 28 encloses on/off switch 14 of strip 12 in order to prevent access to switch 14 through cord slot 42. Cover 28 includes cord opening 52 allowing power cord 16 of strip 12 to extend therethrough and through access opening 40.

End cap 24 includes front wall 54, left cap wall 56, right cap wall 58 and upper cap wall 60 and is configured to fit over and close access opening 40 in the closed position illustrated in Figs. 2-5. Fig. 1 illustrates the open position. In the closed position, cap walls 56-60 are positioned adjacent the outboard faces of housing walls 30 and 34, 36 as shown in Fig. 5.

Front wall 54 presents cord opening 62 adjacent the lower edge thereof so that power cord 16 of strip 12 can extend therethrough. Cord opening 62 is small enough to prevent removal of strip 12 therethrough.

Left cap wall 56 includes locking lever slot 64 configured to be in registration with locking lever slot

46 when end cap 24 is in the closed position as best viewed in Figs. 2-4. Right cap wall 58 includes coupling slot 66 therein positioned to register with and receive coupling tab 48 when end cap 24 is in the closed position.

Lock 26 includes locking mechanism 68 positioned through a corresponding hole in front wall 54 with the key receiving face of mechanism 68 positioned on the outboard face of front wall 54. Lock 26 also includes locking arm 70 coupled with locking mechanism 68 and rotatable therewith when a key 72 is received in mechanism 68. Locking lever 70 is positioned on the inboard face of front wall 54. With end cap 24 in the closed position, locking lever slots 46 and 64 are in registration and key operation of mechanism 68 selectively rotates lever 70 into and out of locking lever slots 46 and 64.

In use, plugs 18 are inserted into the receptacles of power strip 12. Strip 12 is then inserted through access opening 40 into compartment 50. In so doing, power cords 20 of plugs 18 are slipped into cord slot 42. With strip 12 in position, switch cover 28 is then placed over the outboard end of strip 12 in covering relationship with on/off switch 14. Power cord 16 is positioned to extend through cord opening 52 in switch cover 28.

With key 72 received in locking mechanism 68, locking arm 70 is rotated to the unlocked position illustrated by the dashed lines in Fig. 5. End cap 24 can then be placed in the closed position relative to housing 22 by placing end cap 24 over access opening 40 with power

cord 16 extending through cord opening 62. Coupling slot 66 in right cap wall 58 is positioned initially with coupling tab 48 received in slot 66. Left cap wall 56 is then slipped over left side wall 34 so that locking lever slots 46 and 64 are in registration. Key 72 is operated to rotate locking arm 70 to the locked position in which arm 78 is received in locking lever slots 46, 64 as illustrated in Figs. 2-5.

Key 72 is then removed. This locks end cap 24 in the closed position. In this position, there is no access to power strip 12 and plugs 18 cannot be removed. Moreover, switch cover 28 prevents operation of on/off switch 14. Thus, if switch 14 is in the off position, the electrical devices powered by plugs 18 are also off thereby preventing their operation. Moreover, plugs 18 cannot be removed and plugged into another receptacle. In this way, apparatus 10 prevents unauthorized use of the electrical devices.

For authorized use of the electrical devices, key 72 is used to unlock end cap 24 which is then removed along with switch cover 28. Switch 14 can then be operated without removing switch 12 from compartment 50.

Those skilled in the art will appreciate that the present invention encompasses many variations in the preferred embodiment described herein. Having thus described this embodiment, the following is claimed as new and desired to be secured by Letters Patent:

CLAIMS:

1. A power strip lock box apparatus for use with a power strip having a power cord extending therefrom and having an electrical receptacle for receiving an electrical plug having the power cord extending therefrom, said apparatus comprising:

a housing having walls defining a compartment configured for containing a power strip and electrical plug therein and for preventing access thereto,

said housing including structure defining an access opening into said compartment for placement therein and removal therefrom of a power strip and plug and for allowing access to the power strip and plug while positioned in said compartment;

a cap configured for substantially covering said access opening and shiftable between a closed position relative to said access opening and an open position relative thereto; and

locking means for releasably locking said cap in said closed position,

there being at least one cord aperture defined in said apparatus configured for allowing the power cords of a power strip and plug positioned in said compartment to extend from said apparatus while preventing removal of and access to the power strip and plug.

2. The apparatus as set forth in claim 1, said housing having a closed first end and an open second end as said access opening.

3. The apparatus as set forth in claim 2, said cap being configured as an end cap for substantially covering said open second end and thereby covering said access opening in said closed position.

4. The apparatus as set forth in claim 3, said locking means including a key lock releasably intercoupling said end cap and housing walls in said closed position.

5. The apparatus as set forth in claim 1, said cord aperture being configured as a slot defined in one of said walls, said slot presenting a width greater than the power cords and less than the width of the power strip and plug.

6. The apparatus as set forth in claim 5, said apparatus further including a second cord aperture defined in said cap for allowing extension of the power strip power cord therethrough.

7. The apparatus as set forth in claim 6, the power strip having an on/off switch, said apparatus further including a switch cover configured for covering the on/off switch and preventing access thereto through said cord aperture.

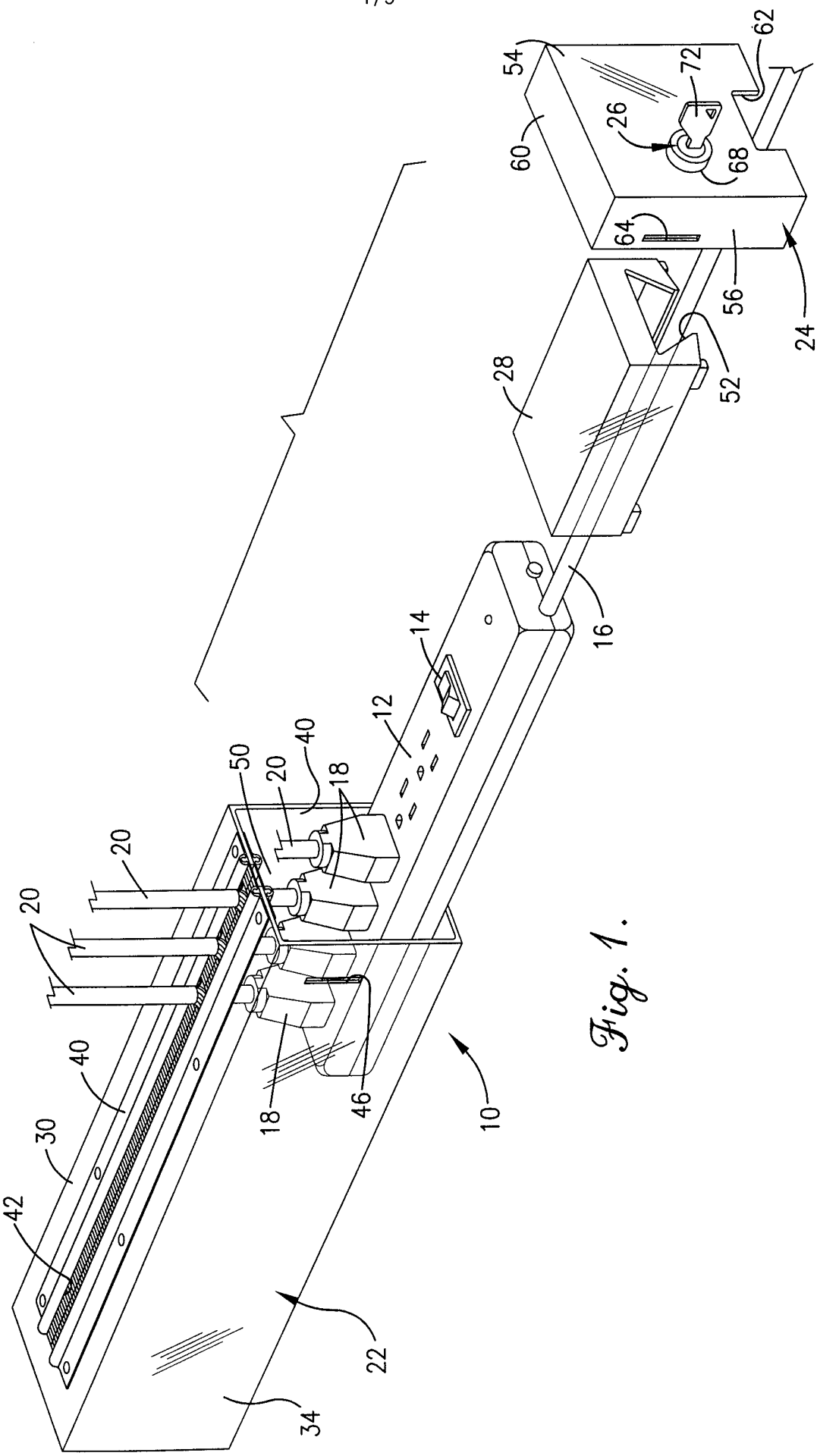

54
62
72
26
60
68
64
56
24
52
28
16
14
12
50
20
40
18
20
20
40
30
42
18
46
10
22
34

Fig. 1.

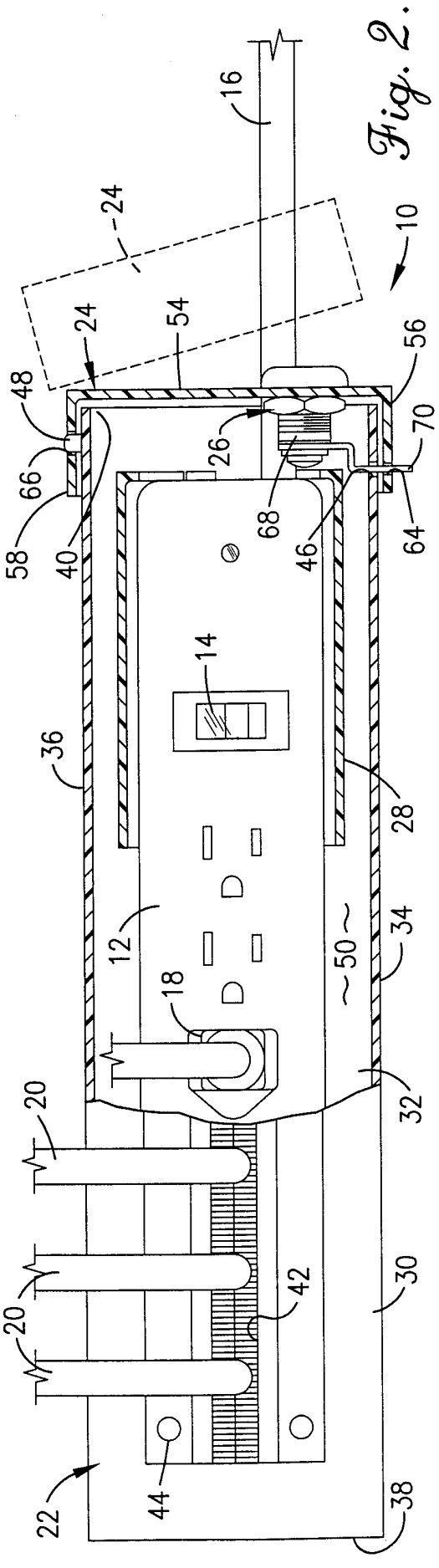

16
24
10
54
56
48
66
58
40
26
68
46
64
70
14
36
28
12
18
50
34
32
20
42
30
22
44
38

Fig. 2.

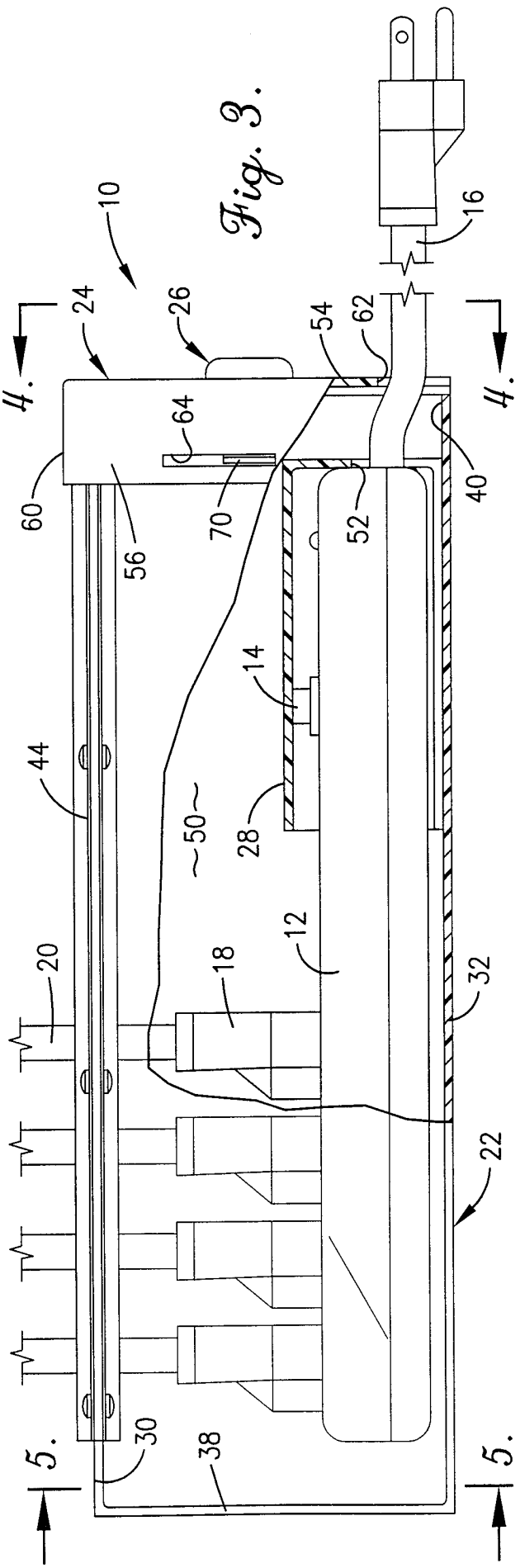

16
10
24
26
54
62
4.
4.
64
60
56
70
52
40
14
44
28
50
12
18
20
32
22
30
38
5.
5.

Fig. 3.

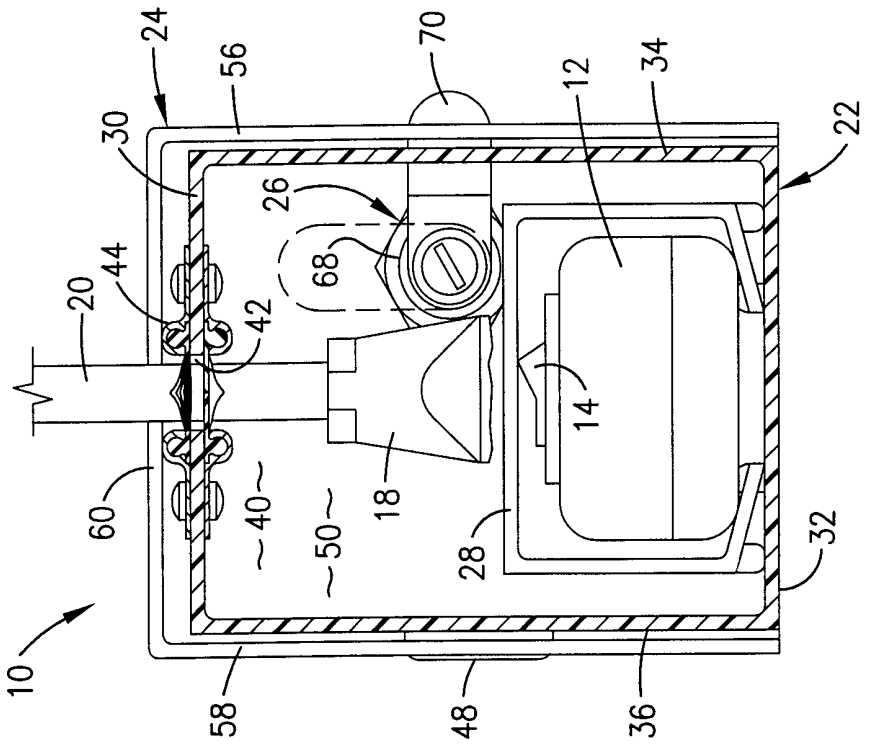

24
56
70
12
34
22
30
26
68
44
20
42
14
18
60
40
50
28
32
10
58
48
36

Fig. 5.

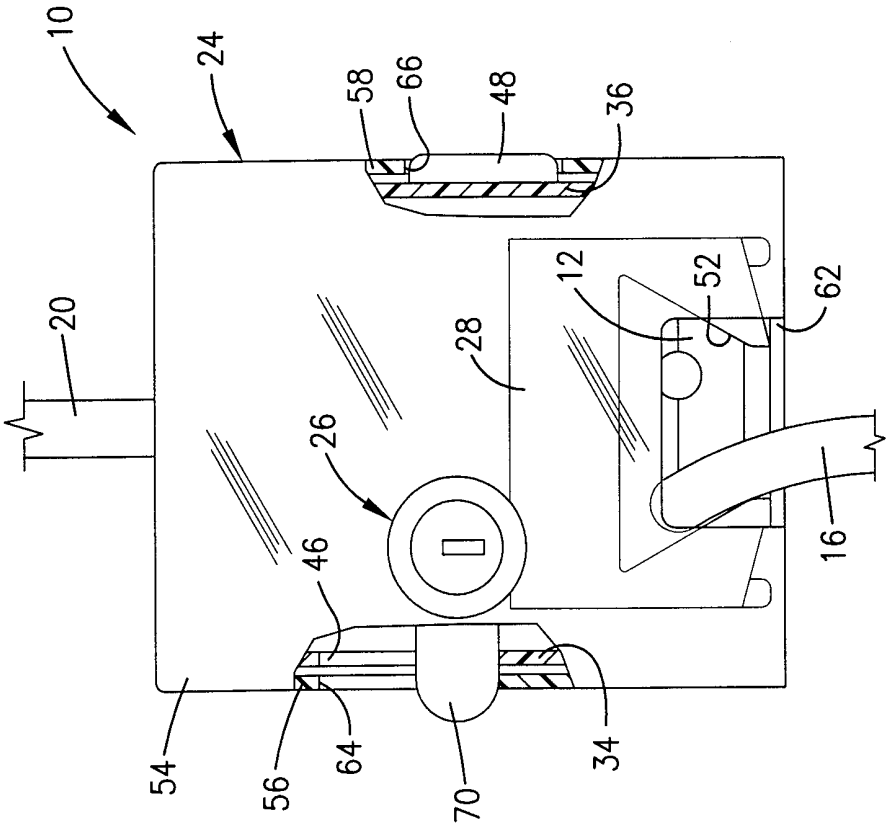

10
24
58
66
48
36
12
52
62
20
28
26
16
46
54
56
64
70
34

Fig. 4.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US99/10926

A. CLASSIFICATION OF SUBJECT MATTER

IPC(6) :H01R 13/639
US CL :439/367

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)

U.S. : 439/367

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

439/133,134,367

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

None

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US, 4,063,110 A (GLICK) 13 DECEMBER 1997, (13.12.97) SEE ENTIRE DOCUMENT.	1-6
Y	US 4,749,363 (LUSKA ET AL) 07 JUNE 1988, (07.06.88) SEE ENTIRE DOCUMENT	1-6

☐ Further documents are listed in the continuation of Box C. ☐ See patent family annex.

*	Special categories of cited documents:	"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
"A"	document defining the general state of the art which is not considered to be of particular relevance	"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
"E"	earlier document published on or after the international filing date	"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
"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)	"&"	document member of the same patent family
"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		

Date of the actual completion of the international search

26 JUNE 1999

Date of mailing of the international search report

14 JUL 1999

Name and mailing address of the ISA/US
Commissioner of Patents and Trademarks
Box PCT
Washington, D.C. 20231

Facsimile No. (703) 305-3230

Authorized officer

NEIL ABRAMS

Telephone No. (703) 308-1729

Form PCT/ISA/210 (second sheet)(July 1992)★