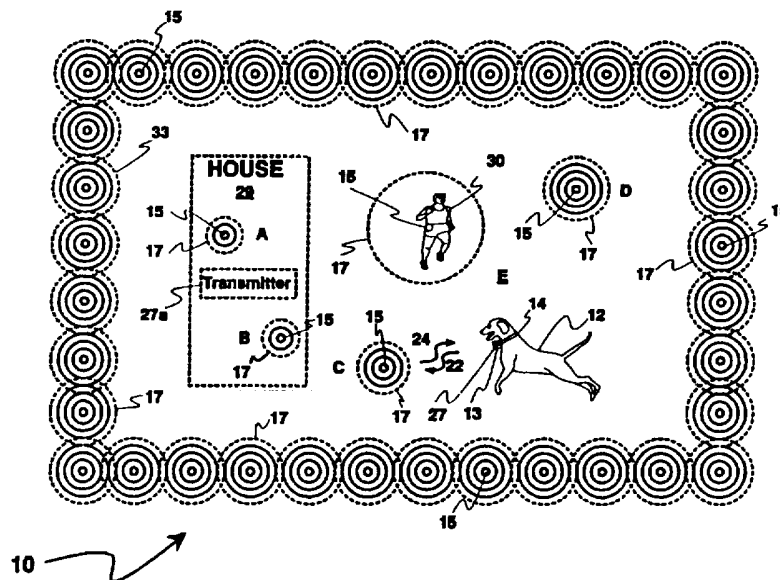




INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification ⁵ : A01K 15/02, 11/00		A3	(11) International Publication Number: WO 94/02004
			(43) International Publication Date: 3 February 1994 (03.02.94)
(21) International Application Number: PCT/US93/05762		(81) Designated States: AT, AU, BB, BG, BR, CA, CH, CZ, DE, DK, ES, FI, GB, HU, JP, KP, KR, LK, LU, MG, MN, MW, NL, NO, NZ, PL, PT, RO, RU, SD, SE, SK, UA, European patent (AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG).	
(22) International Filing Date: 16 June 1993 (16.06.93)			
(30) Priority data: 07/919,147 23 July 1992 (23.07.92) US			
(71) Applicant: POLE/ZERO CORPORATION [US/US]; 5530 Union Centre Drive, West Chester, OH 45069 (US).		Published <i>With international search report. Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.</i>	
(72) Inventor: JANNING, Eugene, A. ; 4280 Willow Hills Lane, Cincinnati, OH 45243 (US).			
(74) Agents: SHOWALTER, Donald, S. et al.; Ruden, Barnett, McClosky, Smith, Schuster & Russell, 200 East Broward Boulevard, P.O. Box 1900, Fort Lauderdale, FL 33302 (US).		(88) Date of publication of the international search report: 14 April 1994 (14.04.94)	

(54) Title: TRANSPONDER CONTROL OF ANIMAL WHEREABOUTS



(57) Abstract

The whereabouts of a pet or other animal (12) are controlled using one or more transponders (15) to establish a boundary (17). The transponders (15) receive an incident signal (22) from a transmitter and generate a distinguishable return signal (24) which, when the animal moves into proximity of the boundary (17), is received by a unit affixed to the animal (12) to initiate application of an aversive stimulus which deters the animal (12) from traversing the boundary. The transponders (15) can be active or passive and can be located to establish either fixed or mobile boundaries (17).

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.

AT	Austria	FR	France	MR	Mauritania
AU	Australia	GA	Gabon	MW	Malawi
BB	Barbados	GB	United Kingdom	NE	Niger
BE	Belgium	GN	Guinea	NL	Netherlands
BF	Burkina Faso	GR	Greece	NO	Norway
BG	Bulgaria	HU	Hungary	NZ	New Zealand
BJ	Benin	IE	Ireland	PL	Poland
BR	Brazil	IT	Italy	PT	Portugal
BY	Belarus	JP	Japan	RO	Romania
CA	Canada	KP	Democratic People's Republic of Korea	RU	Russian Federation
CF	Central African Republic	KR	Republic of Korea	SD	Sudan
CG	Congo	KZ	Kazakhstan	SE	Sweden
CH	Switzerland	LI	Liechtenstein	SI	Slovenia
CI	Côte d'Ivoire	LK	Sri Lanka	SK	Slovak Republic
CM	Cameroon	LU	Luxembourg	SN	Senegal
CN	China	LV	Latvia	TD	Chad
CS	Czechoslovakia	MC	Monaco	TC	Togo
CZ	Czech Republic	MG	Madagascar	UA	Ukraine
DE	Germany	ML	Mali	US	United States of America
DK	Denmark	MN	Mongolia	UZ	Uzbekistan
ES	Spain			VN	Viet Nam
FI	Finland				

INTERNATIONAL SEARCH REPORT

Int. onal Application No
PCT/US 93/05762

A. CLASSIFICATION OF SUBJECT MATTER
IPC 5 A01K15/02 A01K11/00

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 A01K

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	GB,A,2 220 814 (TORRINGTON PRODUCTS VENTURES INC) 17 January 1990 see abstract; figures 1-3,5,8	1
A	& US,A,4 898 120 (BROSE) cited in the application ---	
A	US,A,3 753 421 (PECK) 21 August 1973 cited in the application see abstract; figures 1-3 ---	1
A	US,A,4 202 293 (GONDA) 13 May 1980 see column 5, line 31 - column 6, line 57; figures 1-5 ---	16
A	US,A,4 967 695 (GIUNTA) 6 November 1990 cited in the application ---	
	-/--	

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in 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 document 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

28 February 1994

Date of mailing of the international search report

14. 03. 94

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+ 31-70) 340-2040, Tx. 31 651 epo nl,
Fax (+ 31-70) 340-3016

Authorized officer

von Arx, V

INTERNATIONAL SEARCH REPORT

International Application No
PCT/US 93/05762

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US,A,5 067 441 (WEINSTEIN) 26 November 1991 cited in the application ---	
A	US,A,4 947 795 (FARKAS) 14 August 1990 -----	

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US93/05762

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. Claims: 1-15
2. Claims: 16

1. ☒ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☒ No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US 93/05762

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
GB-A-2220814	17-01-90	US-A- 4898120	06-02-90
US-A-4898120	06-02-90	GB-A, B 2220814	17-01-90
US-A-3753421	21-08-73	NONE	
US-A-4202293	13-05-80	NONE	
US-A-4967695	06-11-90	AU-B- 632438	24-12-92
		AU-A- 5921090	17-01-91
		CA-A- 2058770	24-12-90
		EP-A- 0479854	15-04-92
		WO-A- 9100005	10-01-91
US-A-5067441	26-11-91	AU-B- 632450	24-12-92
		AU-A- 8375691	11-06-92
		DE-A- 4130775	11-06-92
		FR-A, B 2670084	12-06-92
		GB-A- 2250882	17-06-92
		JP-A- 4258233	14-09-92
		SE-A- 9102493	11-06-92
		US-A- 5170172	08-12-92
US-A-4947795	14-08-90	US-A- 5054428	08-10-91