

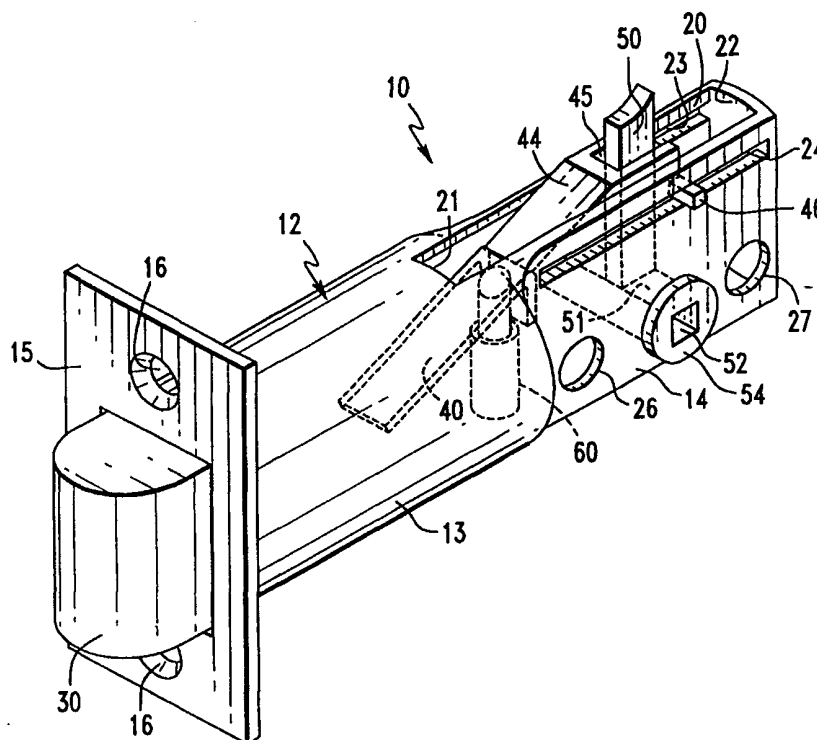
INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

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(21) International Application Number: PCT/US99/11995 (22) International Filing Date: 1 June 1999 (01.06.99) (30) Priority Data: 09/097,279 12 June 1998 (12.06.98) US (71)(72) Applicant and Inventor: GALVIN, Donna [US/US]; 21 Colwyn Lane, Bala Cynwyd, PA 19004 (US). (74) Agent: TOWNER, Alan, G.; Eckert Seamans Cherin & Mellott, LLC, 44th floor, 600 Grant Street, Pittsburgh, PA 15219 (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 <i>With international search report.</i> (88) Date of publication of the international search report: 3 February 2000 (03.02.00)

(54) Title: AUTOMATIC DOOR LATCH

(57) Abstract

An automatic door latch (10) includes a dead bolt (30) which is automatically moved from a partially retracted or trigger position to a fully extended locking position when a door (8) in which the lock (10) is mounted is closed. When a key is used to unlock the dead bolt (30) from outside the door (8), or a finger turn or key is used to unlock the dead bolt (30) from inside the door (8), the dead bolt (30) is automatically reset to the trigger position. The dead bolt lock (30) includes a multi-position switch (60) mounted in the lock housing (12) which engages a contact member (40) mounted on the dead bolt (30). Retraction of the dead bolt (30) into the housing (12) causes the multi-position switch (60) to engage the contact member (40) and to secure the dead bolt (30) in the trigger position. Subsequent retraction of the dead bolt (30) into the housing (12) causes the multi-position switch (60) to disengage from the contact member (40), thereby allowing the dead bolt (30) to extend from the housing (12) to the locked position. In a preferred embodiment, a latch restraint assembly (110) is provided which holds the dead bolt (30) in the fully retracted position until the restraint assembly (110) is manually released.



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INTERNATIONAL SEARCH REPORT

 International application No.
PCT/US99/11995

A. CLASSIFICATION OF SUBJECT MATTER

IPC(6) : E05C 1/08

US CL : 292/163

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. : 292/163, 173, 143, 139, 244, 175, 359, dig 26, dig 4

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 practicable, 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.
X --- Y	US 4,124,238 A (BISCHOFF, JR.) 7 November 1978 (07.11.78), see entire document.	1, 2, 6-8, 10-15, 17, 18, 24, 25, 28-32 --- 3, 4, 16, 42
Y	US 4,664,433 A (SOLOVIEFF) 12 May 1987 (12.05.87), see figure 14, element 100.	9
Y	FR 506,454 (CHAUVAT) 21 November 1919 (21.11.19), see figure 1.	5, 26, 33
Y	US 4,208,837 A (BLACK, SR. et al) 24 June 1980 (24.06.80), see figure 4, element 87.	39
Y	US 2,525,340 (CLARK) 10 October 1950 (10.10.50), see entire document.	27, 34-38, 40, 41



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
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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

11 OCTOBER 1999

Date of mailing of the international search report

29 NOV 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

JOHN B. WALSH

Telephone No. (703) 305-0444

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US99/11995

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

This international 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:

Please See Extra Sheet.

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

International application No.
PCT/US99/11995

BOX II. OBSERVATIONS WHERE UNITY OF INVENTION WAS LACKING

This ISA found multiple inventions as follows:

This application contains the following inventions or groups of inventions which are not so linked as to form a single inventive concept under PCT Rule 13.1. In order for all inventions to be searched, the appropriate additional search fees must be paid.

Group I, claim(s) 1-26 and 28-33, drawn to an automatic door latch.

Group II, claim(s) 27 and 34-42, drawn to a restraint assembly.

The inventions listed as Groups I and II do not relate to a single inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: Since the special technical feature of the Group I invention is not present in the Group II invention being claimed and the special technical feature of the Group II invention is not present in the Group I invention being claimed, unity of invention is lacking.