(11) **EP 1 524 391 A3**

(12)

EUROPEAN PATENT APPLICATION

- (88) Date of publication A3: **17.08.2005 Bulletin 2005/33**
- (43) Date of publication A2: 20.04.2005 Bulletin 2005/16
- (21) Application number: 04029634.5
- (22) Date of filing: 04.01.2002

(51) Int Cl.⁷: **E05B 75/00**, E05B 13/10, E05B 27/08

- (84) Designated Contracting States:

 AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU

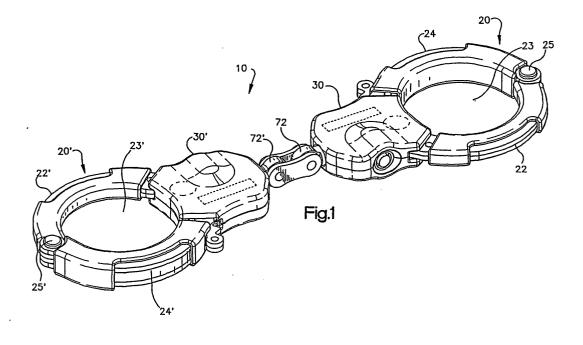
 MC NL PT SE TR
- (30) Priority: 04.01.2001 US 259966 P
- (62) Document number(s) of the earlier application(s) in accordance with Art. 76 EPC: 02718787.1 / 1 352 141
- (71) Applicant: MASTER LOCK COMPANY Milwaukee, WI 53210 (US)

- (72) Inventors:
 - Makos, Thimothy Brookfield, WI 53005 (US)
 - Elliott, Joseph Mequon, WI 53092 (US)
 - Grandy, Kenneth N. Sr South Milwaukee, WI53172 (US)
 - Yip, Victor
 4H Chi Fu Pa Yeun, Hong Kong (CN)
- (74) Representative: Neill, Alastair William et al APPLEYARD LEES,
 15 Clare Road Halifax HX1 2HY (GB)

(54) Cuff lock and push button locking mechanism

(57) The invention provides a pair of cuff locks (20,20') joined by a universal joint and linkage system (72,72') which provides for 360 relative rotation between the cuffs as well as allow the cuffs to be folded together into a compact position. The invention further provides for a push button cylinder lock which includes a rotatable

plug and a fixed plug each having a plurality of aligned bores for receiving one or more tumbler pins. The push button cylinder lock further includes a non-rotatable push button shaft which is sildably mounted within the housing. One or more retaining pins engage locking indents of the push button shaft.





EUROPEAN SEARCH REPORT

Application Number

EP 04 02 9634

| | Citation of document with in | dication, where appropriate, | Relevant | CLASSIFICATION OF THE | | |
|--|---|---|--|--------------------------|--|--|
| Category | of relevant pass | | to claim_ | APPLICATION (Int.CI.7) | | |
| Х | US 3 392 554 A (PAT 16 July 1968 (1968- * the whole documen | 1-7 | E05B75/00 E05B13/10 E05B27/08 | | | |
| X | US 4 138 867 A (TOM 13 February 1979 (1 * column 2, lines 3 * column 2, line 58 figures * | 1,2,4,5 | , | | | |
| Х | US 3 618 345 A (SMI 9 November 1971 (19 * the whole documen | 1,2,4,7 | | | | |
| X | GB 587 694 A (ALFRE 2 May 1947 (1947-05 * the whole documen | 1,3,4,7 | | | | |
| X | US 1 342 334 A (PAU 1 June 1920 (1920-0 * the whole documen | 1,2,4,2 | TECHNICAL FIELDS SEARCHED (Int.Cl.7) | | | |
| X | GB 2 065 217 A (PETROMATIC SECURI-KEY LTD) 24 June 1981 (1981-06-24) | | 10,11, 14,15, 17, 19-21, 28,29, 32,33, 37-39, 45,46 | E05B | | |
| Y | * the whole documen | 12,13, 16,18, 22-26, 30,31, 34,36, 40-44 | | | | |
| | The present search report has b | · | | | | |
| | Place of search | Date of completion of the search | | Examiner | | |
| | Munich | 30 May 2005 | He | nkes, R | | |
| CATEGORY OF CITED DOCUMENTS X: particularly relevant if taken alone Y: particularly relevant if combined with another document of the same category A: technological background | | L : document cited f | cument, but put te in the applicatio or other reason | olished on, or n s | | |
| O : non-written disclosure P : intermediate document | | | & : member of the same patent family, corresponding document | | | |



EUROPEAN SEARCH REPORT

Application Number EP 04 02 9634

| | DOCUMENTS CONSIDERE | D TO BE RELEVANT | · · · · · · · · · · · · · · · · · · · | | | |
|--|--|--|---|--|--|--|
| Category | Citation of document with indication of relevant passages | on, where appropriate, | Relevant to claim | CLASSIFICATION OF THE APPLICATION (Int.CI.7) | | |
| Y | EP 0 556 505 A (CHANG-J LTD; LU, DEN-YI) 25 August 1993 (1993-08 | | 12,13, 16,18, 22,30, 31,34, 36,40 | | | |
| | \ast the whole document \ast | | 30,40 | | | |
| Y | US 5 020 349 A (LEE ET 4 June 1991 (1991-06-04 * the whole document * | AL)) | 23,24, 41,42 | | | |
| Y | FR 2 712 335 A (LAPERCH 19 May 1995 (1995-05-19 * the whole document * | E)) | 25,26, 43,44 | | | |
| | | | | TECHNICAL FIELDS SEARCHED (Int.Cl.7) | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | The present search report has been d | rawn up for all claims | | | | |
| | Place of search Munich | Date of completion of the search 30 May 2005 | Henk | Examiner (es, R | | |
| CATEGORY OF CITED DOCUMENTS X: particularly relevant if taken alone Y: particularly relevant if combined with another document of the same category A: technological background | | E : earlier patent d after the filing o D : document cited L : document cited | T: theory or principle underlying the invention E: earlier patent document, but published on, or after the filing date D: document cited in the application L: document cited for other reasons | | | |
| O : non-written disclosure P : intermediate document | | & : member of the | & : member of the same patent family, corresponding document | | | |



Application Number

EP 04 02 9634

| CLAIMS INCURRING FEES |
|--|
| The present European patent application comprised at the time of filing more than ten claims. |
| Only part of the claims have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims and for those claims for which claims fees have been paid, namely claim(s): |
| No claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims. |
| LACK OF UNITY OF INVENTION |
| The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely: |
| see sheet B |
| All further search fees have been paid within the fixed time limit. The present European search report has been drawn up for all claims. |
| As all searchable claims could be searched without effort justifying an additional fee, the Search Division did not invite payment of any additional fee. |
| Only part of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the inventions in respect of which search fees have been paid, namely claims: |
| None of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims, namely claims: |



LACK OF UNITY OF INVENTION SHEET B

Application Number

EP 04 02 9634

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

1. claims: 1-7,27

a cuff lock with a particular joint between the pair of cuffs, further comprising any kind of locking cylinder

2. claims: 10-16,16-26, 28-46

Note: the number 16 for a claim appears twice:

- once a claim depending on independant claim 10

- once as independently formulated claim 16

a further independant claim 28 equal to claim 10 has been added for the EP-regional file, with another number of dpenedant claims equeally all copies of already exisiting dependant claims.

Independant claims 10, 16 and 28 all belong to the second group of inventions:

a push button cylinder lock of particular design

ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO.

EP 04 02 9634

This annex lists the patent family members relating to the patent documents cited in the above–mentioned European search report. The members are as contained in the European Patent Office EDP file on The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

30-05-2005

| | Patent document ed in search report | t | Publication date | | Patent family member(s) | | Publication date |
|----|--|-------|------------------|--|----------------------------|-------------------------------------|--|
| US | 3392554 | Α | 16-07-1968 | GB | 1117744 | Α | 26-06-1968 |
| US | 4138867 | Α | 13-02-1979 | NONE | | | |
| US | 3618345 | Α | 09-11-1971 | NONE | | | |
| GB | 587694 | Α | 02-05-1947 | NONE | | | |
| US | 1342334 | Α | 01-06-1920 | NONE | | | |
| GB | 2065217 | Α | 24-06-1981 | NONE | | | |
| ΕP | 0556505 | A | 25-08-1993 | US US AT CA CN DE DE EP ES | 69212457 | A T A1 A D1 T2 A2 | 28-07-1992 23-03-1993 15-08-1996 21-06-1993 06-04-1994 29-08-1996 19-12-1996 25-08-1993 16-11-1996 |
| US | 5020349 | Α | 04-06-1991 | NONE | | | |
| FR | 2712335 | A | 19-05-1995 | FR | 2712335 | Δ1 | 19-05-199 |

FORM P0459

 $\frac{Q}{m}$ For more details about this annex : see Official Journal of the European Patent Office, No. 12/82