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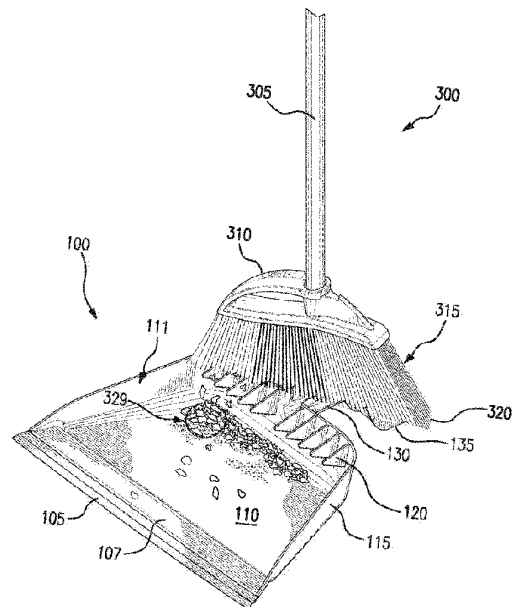
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(54) **BEVELED BROOM AND STEP-ON DUSTPAN CLEANING SYSTEM**

(57) A beveled broom and step-on dustpan cleaning system including a step-on dustpan having a step-on portion configured to allow a user to collect debris in a receptacle of the dustpan when a force is applied on the step-on portion. The dustpan includes a lip portion which is configured to seal against a floor surface upon a user stepping on the step-on portion to collect debris. A beveled broom having a broom head configured with a beveled or chamfered shape at a functional angle to provide an effective and efficient contact surface to a floor surface to collect debris during use.



**FIG. 14**



## EUROPEAN SEARCH REPORT

Application Number

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EPO FORM 1503 03.82 (P04C01)

| DOCUMENTS CONSIDERED TO BE RELEVANT  |   |   |   |
|--|---|---|---|
| Category   | Citation of document with indication, where appropriate, of relevant passages   | Relevant to claim   | CLASSIFICATION OF THE APPLICATION (IPC)                 |
| A  | US 2012/260453 A1 (WARD BILL [US] ET AL)<br>18 October 2012 (2012-10-18)<br>* paragraphs [0029] - [0031] *<br>-----                         | 1-6,<br>11-15   | INV.<br>A47L13/10<br>A46B5/00<br>A47L13/52              |
| A  | WO 2019/089079 A1 (WISP IND INC [US])<br>9 May 2019 (2019-05-09)<br>* paragraphs [0075] - [0080] *<br>-----                                 | 1-6,<br>11-15   |   |
| A  | US 1 908 730 A (CALDWELL JAMES R ET AL)<br>16 May 1933 (1933-05-16)<br>* page 1, lines 34-73 *<br>-----                                     | 1-6,<br>11-15   |   |
| A  | WO 2007/068026 A1 (COZENS PHILLIP ALAN [AU]; JONES DARREN EDWARD [AU]; RIZMAL KRIS [AU]) 21 June 2007 (2007-06-21)<br>* figure 5 *<br>----- | 7-15  |   |
| A  | FR 3 043 317 A1 (LBD MAISON [FR])<br>12 May 2017 (2017-05-12)<br>* figures 6,7 *<br>-----   | 7-15  |   |
| A  | DE 10 2013 000501 A1 (HARMS GEORG [DE])<br>24 July 2014 (2014-07-24)<br>* figures 2,4 *<br>-----  | 7-15  | TECHNICAL FIELDS SEARCHED (IPC)<br>A47L<br>A61D<br>A46B |
| 3 The present search report has been drawn up for all claims   |   |   |   |
| Place of search<br><b>Munich</b>   |   | Date of completion of the search<br><b>11 February 2022</b>   | Examiner<br><b>Eckenschwiller, A</b>                    |
| CATEGORY OF CITED DOCUMENTS<br>X : particularly relevant if taken alone<br>Y : particularly relevant if combined with another document of the same category<br>A : technological background<br>O : non-written disclosure<br>P : intermediate document |   | T : theory or principle underlying the invention<br>E : earlier patent document, but published on, or after the filing date<br>D : document cited in the application<br>L : document cited for other reasons<br>.....<br>& : member of the same patent family, corresponding document |   |



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**CLAIMS INCURRING FEES**

The present European patent application comprised at the time of filing claims for which payment was due.

☐ Only part of the claims have been paid within the prescribed time limit. The present European search report has been drawn up for those claims for which no payment was due 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 those claims for which no payment was due.

**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:

☐ The present supplementary 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 (Rule 164 (1) EPC).



**LACK OF UNITY OF INVENTION  
SHEET B**

Application Number

**EP 21 17 8921**

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: 1-6**

**Providing a dust pan for removing dust from a surface to be cleaned**

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**2. claims: 7-15**

**Providing a broom for collecting dust on a floor to be cleaned**

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

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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  
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| Patent document<br>cited in search report | Publication<br>date | Patent family<br>member(s) | Publication<br>date |
|---|---------------------|----------------------------|---------------------|
| <b>US 2012260453 A1</b>                   | <b>18-10-2012</b>   | <b>US 2012260453 A1</b>    | <b>18-10-2012</b>   |
|   |                     | <b>US 2013091651 A1</b>    | <b>18-04-2013</b>   |
|   |                     | <b>US 2014310909 A1</b>    | <b>23-10-2014</b>   |
|   |                     | <b>US 2016338564 A1</b>    | <b>24-11-2016</b>   |
| <hr/>                                     |                     |                            |                     |
| <b>WO 2019089079 A1</b>                   | <b>09-05-2019</b>   | <b>NONE</b>                |                     |
| <hr/>                                     |                     |                            |                     |
| <b>US 1908730 A</b>                       | <b>16-05-1933</b>   | <b>NONE</b>                |                     |
| <hr/>                                     |                     |                            |                     |
| <b>WO 2007068026 A1</b>                   | <b>21-06-2007</b>   | <b>NONE</b>                |                     |
| <hr/>                                     |                     |                            |                     |
| <b>FR 3043317 A1</b>                      | <b>12-05-2017</b>   | <b>EP 3373766 A1</b>       | <b>19-09-2018</b>   |
|   |                     | <b>ES 2752623 T3</b>       | <b>06-04-2020</b>   |
|   |                     | <b>FR 3043317 A1</b>       | <b>12-05-2017</b>   |
|   |                     | <b>PL 3373766 T3</b>       | <b>31-03-2020</b>   |
|   |                     | <b>WO 2017081383 A1</b>    | <b>18-05-2017</b>   |
| <hr/>                                     |                     |                            |                     |
| <b>DE 102013000501 A1</b>                 | <b>24-07-2014</b>   | <b>NONE</b>                |                     |
| <hr/>                                     |                     |                            |                     |