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(54) **HEATER BUNDLES WITH LOCAL POWER SWITCHING**

(57) A heater system (10) includes a heater bundle. The heater bundle includes at least one heater assembly, where the heater assembly includes a plurality of heater units (52), and more than one of the heater units (52) defines at least one independently controlled heating zone. The heater bundle includes a plurality of power conductors (56) electrically connected to the independently controlled heating zone. The heater system (10) includes means for determining temperature and at least one power switch (120), the power switch (120) disposed proximate the heater bundle. The heater system (10) includes at least one controller (15) configured to modulate power to the independently controlled heating zones (62) through the power conductors (56) based on the determined temperature to provide a desired power output along a length of the heater assembly. The controller is configured to provide power to the power switch (120).

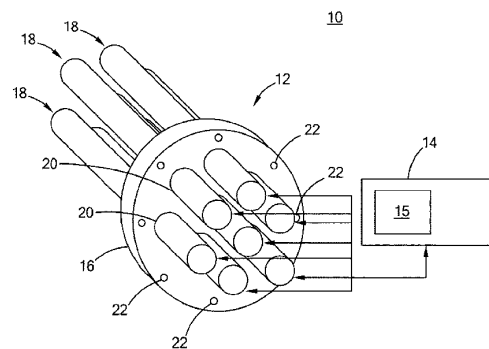


FIG. 1

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## PARTIAL EUROPEAN SEARCH REPORT

Application Number

under Rule 62a and/or 63 of the European Patent Convention.  
This report shall be considered, for the purposes of  
subsequent proceedings, as the European search report

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## DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	US 2017/254564 A1 (EVERLY MARK [US] ET AL) 7 September 2017 (2017-09-07)	1, 2, 4-12	INV. H05B3/48
Y	* paragraph [0019] - paragraph [0024]; figures 1-4 * * paragraph [0041] *	3	H05B1/02 F24H1/10 F24H9/20
X	US 2017/254565 A1 (EVERLY MARK D [US] ET AL) 7 September 2017 (2017-09-07)	1, 2, 4-12	
Y	* paragraph [0024] - paragraph [0026]; figures 1-4 * * paragraph [0043] *	3	
X	WO 2018/009768 A1 (WATLOW ELECTRIC MFG [US]) 11 January 2018 (2018-01-11)	1, 2, 4-12	
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			TECHNICAL FIELDS SEARCHED (IPC)
			H05B F24H

## INCOMPLETE SEARCH

The Search Division considers that the present application, or one or more of its claims, does/do not comply with the EPC so that only a partial search (R.62a, 63) has been carried out.

Claims searched completely :

Claims searched incompletely :

Claims not searched :

Reason for the limitation of the search:

see sheet C

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Place of search	Date of completion of the search	Examiner
Munich	2 November 2022	Gea Haupt, Martin
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 O : non-written disclosure P : intermediate document 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 & : member of the same patent family, corresponding document		

EPO FORM 1503 03.82 (P04E07)



## PARTIAL EUROPEAN SEARCH REPORT

Application Number

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Y	US 2021/018221 A1 (NOLTE HUBERT [DE] ET AL) 21 January 2021 (2021-01-21) * paragraph [0047] - paragraph [0048]; figure 1 * -----	3	
A	US 10 448 458 B2 (WATLOW ELECTRIC MFG [US]) 15 October 2019 (2019-10-15) * column 8, line 40 - line 55; figure 1 * -----	1-12	
			TECHNICAL FIELDS SEARCHED (IPC)



**INCOMPLETE SEARCH  
SHEET C**

Application Number

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**Claim(s) completely searchable:**  
1-12

**Claim(s) not searched:**  
13-23

**Reason for the limitation of the search:**

The search has been restricted to the subject-matter indicated by the applicant in his letter of 05.09.2022 filed in reply to the invitation pursuant to Rule 62a(1) EPC, i.e. claims 1 to 12 have been searched.

# 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 The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

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