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(54) Title: ANTI-RESONANT HOLLOW-CORE FIBERS FEATURING SEGMENTED INTERIOR CAVITIES AND NESTED AN-
TI-RESONANT STRUCTURES

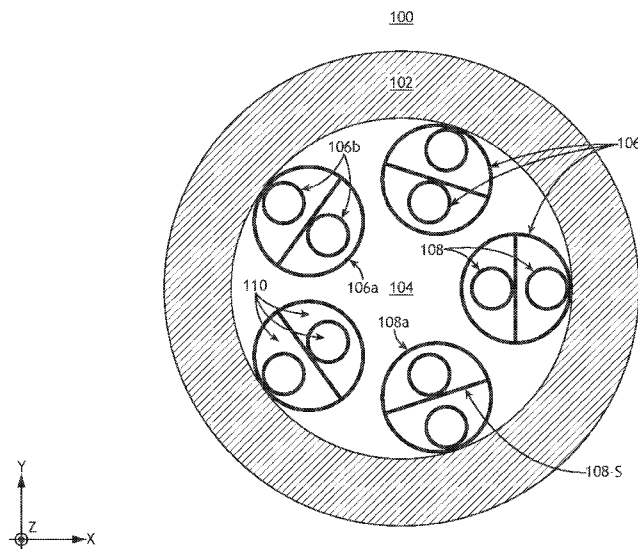


FIG. 1A

(57) Abstract: An optical fiber may include a cladding structure extending along a fiber length providing a hollow interior fiber region and anti-resonant (AR) elements distributed within the interior fiber region. Each of the AR elements may be formed as walled structures with walls extending along the fiber length, where at least some of the plurality of AR elements are nested to form one or more nested sets of AR elements. At least one of the nested sets of AR element may include a first AR element of the plurality of AR elements, where an interior region of the first AR element is segmented into two or more interior cavities by one or more segmentation walls extending along the fiber length. At least one of the two or more interior cavities of the first AR element may include two or more second AR elements of the plurality of AR elements.





RS, RU, RW, SA, SC, SD, SE, SG, SK, SL, ST, SV, SY, TH,
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A. CLASSIFICATION OF SUBJECT MATTER

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CPC - INV. G02B 6/02052, G02B 6/02328, G02B 6/032, C03B 2203/10, C03B 2203/16

ADD. G02B 6/02, G02B 6/021, G02B 6/02309, C03B 37/02781, C03B 2203/14

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)

See Search History document

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

See Search History document

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

See Search History document

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X --- Y --- A	US 2020/0156987 A1 (UNIVERSITY OF SOUTHAMPTON) 21 May 2020 (21.05.2020) entire document, especially Fig. 1, 2 and 14; para [0028], [0031], [0069], [0080], [0081], [0083]	1, 7, 9-11, 16, 18, 24, 32-34, 39, 41 ----- 2, 12-15, 17, 19-23, 25, 35-38, 40, 42-46 ----- 3-6, 8, 26-31
Y --- A	US 2020/0241200 A1 (BEIJING UNIVERSITY OF TECHNOLOGY) 30 July 2020 (30.07.2020) entire document, especially Fig. 1 and 3; para [0030], [0031], [0034], [0043]	2, 22, 23, 25, 45, 46 ----- 28-30
Y	US 2022/0244453 A1 (HERAEUS QUARZGLAS GMBH & CO. KG) 04 August 2022 (04.08.2022) entire document, especially Fig. 1; para [0086], [0119]	12, 13, 15, 35, 36, 38
Y	US 2020/0115270 A1 (NANYANG TECHNOLOGICAL UNIVERSITY) 16 April 2020 (16.04.2020) entire document, especially Fig. 3A; para [0093]	14, 20, 21, 37, 43, 44
Y	US 2021/0311248 A1 (UNIVERSITY OF SOUTHAMPTON) 07 October 2021 (07.10.2021) entire document, especially Fig. 2C; para [0042]	17, 19, 40, 42
A	CN 115124232 A (YANGTZE OPTICAL FIBRE & CABLE JOINT STOCK LTD CO) 30 September 2022 (30.09.2022) entire document	1-46

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