United States Patent [19] Sims et al.

[54] **DOUBLE-ENDED BOTTLE FOR** CHROMATOGRAPHY

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[**] 14 Years Term:

[21] Appl. No.: 49,689

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FIG. 4 is a bottom plan view of the embodiment of FIG. 1; FIG. 5 is a side elevational view of the embodiment of FIG. 1, with the opposite side being a mirror image; FIG. 6 is a perspective view of an alternative preferred embodiment of the double-ended bottle for chromatography of the present invention shown in a four-bottle array; FIG. 7 is a side elevational view of the embodiment of FIG. 6;

FIG. 8 is a top plan view of the embodiment of FIG. 6; FIG. 9 is a bottom plan view of the embodiment of FIG. 6; FIG. 10 is a side elevational view of the embodiment of FIG. 6, with the opposite side being a mirror image; FIG. 11 is a perspective view of an alternative embodiment of the double-ended bottle for chromatography of the present invention shown in a two-bottle array of smaller size to that shown in FIGS. 1–5; FIG. 12 is a front elevational view of the embodiment of FIG. 11; FIG. 13 is a top plan view of the embodiment of FIG. 11; FIG. 14 a bottom plan view of the embodiment of FIG. 11; FIG. 15 is a side elevational view of the embodiment of FIG. 11, with the opposite side being a mirror image; FIG. 16 is a perspective view of an alternative embodiment of the double-ended bottle for chromatography of the present invention shown in a four-bottle array of a smaller size to that shown in FIGS. 6–10; FIG. 17 is a side elevational view of the embodiment of FIG. 16; FIG. 18 is a top plan view of the embodiment of FIG. 16; FIG. 19 is a bottom plan view of the embodiment of FIG. 16; FIG. 20 is a side elevational view of the embodiment of FIG. 16, with the opposite side being a mirror image; FIG. 21 is a perspective view of an alternative preferred embodiment of the double-ended bottle for chromatography of the present invention shown in a four-bottle array of two different sizes similar to those illustrated in FIGS. 1-10 and 11-20;

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- **U.S. Cl.** **D10/81**; D9/341; D24/224 [52]
- [58] D9/517, 520, 523, 548, 559, 560, 561; D10/81; D24/216, 224, 227; 206/504, 509; 215/48, 252, 10, 228, 386, 395; 220/23.4, 23.6, 23.8; 222/143; 422/99–104

[56] **References** Cited

U.S. PATENT DOCUMENTS

D. 202,287 9/1965 Picco D9/347 10/1991 Kopf D10/81 D. 320,949 D. 369,279 604,191 5/1898 Monnet. 1,163,888 12/1915 Bye. 3,945,523 3/1976 Wertlake et al.

FOREIGN PATENT DOCUMENTS

92/08648 5/1992 WIPO.

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[57] CLAIM

The ornamental design for a double-ended bottle for chromatography, as shown and described.

DESCRIPTION

FIG. 1 is a perspective view of one preferred embodiment of the double-ended bottle for chromatography of the present invention shown in a two-bottle array;

FIG. 2 is a front elevational view of the preferred embodiment of FIG. 1;

FIG. 3 is a top plan view of the embodiment of FIG. 1;

FIG. 22 is a front elevational view of the embodiment of FIG. 21;

FIG. 23 is a top plan view of the embodiment of FIG. 21; FIG. 24 is a bottom plan view of the embodiment of FIG. 21; FIG. 25 is a side elevational view of the embodiment of FIG. 21, with the opposite side being a mirror image; and, FIG. 26 is a rear elevational view of the embodiment of FIG. 21.

1 Claim, 16 Drawing Sheets



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<u>Fig.-4</u>



<u>Fig.-5</u>



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<u>Fig.-6</u>

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U.S. Patent Dec. 17, 1996 Sheet 15 of 16 Des. 376,550 Image: Second symplet in the symplet



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