

[54] SYSTEM FOR CONTROLLING SEPTUM DAMAGE

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[21] Appl. No.: 496,716

[22] Filed: May 20, 1983

[51] Int. Cl.<sup>3</sup> ..... G01N 35/00

[52] U.S. Cl. .... 73/864.91; 73/864.86; 141/130; 141/165; 141/329; 422/64; 422/102; 422/104

[58] Field of Search ..... 422/64, 63, 65, 102, 422/103, 104; 73/864.87, 864.86, 864.91, 864.85, 864.82; 141/165, 130, 312, 329, 330, 19

[56] References Cited

U.S. PATENT DOCUMENTS

3,549,330	12/1970	Jungner et al. ....	422/64
3,550,453	12/1970	Lightner et al. ....	73/864.87 X
3,676,679	7/1972	Waters .....	250/380
3,680,967	8/1972	Engelhardt .....	73/864.91 X
3,897,216	7/1975	Jones .....	422/65 X
3,918,920	11/1975	Barber .....	422/104
3,964,867	6/1976	Berry .....	422/64 X
4,150,673	4/1979	Watt .....	141/329 X
4,170,625	10/1979	Welch .....	422/64
4,224,278	9/1980	Hogen Esch .....	422/63 X
4,359,447	11/1982	Welch .....	422/64 X

FOREIGN PATENT DOCUMENTS

950703	7/1974	Canada .....	422/65
51288	5/1982	European Pat. Off. ....	422/102
1250479	12/1960	France .....	141/329
503637	12/1954	Italy .....	422/64
WO83/00102	1/1983	PCT Int'l Appl. ....	422/102
1192009	5/1970	United Kingdom .....	422/64

OTHER PUBLICATIONS

"Removable Septum Port for a Mass Spectrometer All-Glass Inlet System", p. 216, *Analytical Chemistry*, vol. 49, No. 1, Jan. 1973, Walter G. Dunn et al.

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[57] ABSTRACT

The present invention is directed to a system for locating a vial in a predetermined location with respect to a needle which is used to penetrate a septum in the vial. The system includes a vial carrier having a well for receiving a vial. A penetrable septum is disposed in an opening in the vial. At least one needle penetrates the septum at periodic intervals. Locating means are provided within the vial carrier for establishing a predetermined location of the vial in relation to the needle. The locating means includes a plurality of contact points and urging means for establishing contact between the contact points and the locating surface. The urging means presses substantially on one side of the vial, which side is substantially opposite the locating means.

30 Claims, 4 Drawing Figures

