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Heikkinen et al.

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[45] **Date of Patent:** ***Jun. 6, 2000**

- [54] **MOBILE STATION WITH TOUCH INPUT HAVING AUTOMATIC SYMBOL MAGNIFICATION FUNCTION**
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4,790,028	12/1988	Ramage	382/47
5,016,002	5/1991	Levanto	340/756
5,119,079	6/1992	Hube et al.	340/712
5,201,034	4/1993	Matsuura et al.	395/155
5,266,949	11/1993	Rossi	341/22
5,335,276	8/1994	Thompson et al.	455/558
5,341,466	8/1994	Perlin et al.	395/139
5,408,060	4/1995	Muurinen	200/314
5,422,656	6/1995	Allard et al.	345/173
5,465,401	11/1995	Thompson	455/566
5,568,536	10/1996	Tiller et al.	379/58
5,615,384	3/1997	Allard et al.	395/800
5,815,142	9/1998	Allard et al.	345/173

[*] Notice: This patent issued on a continued prosecution application filed under 37 CFR 1.53(d), and is subject to the twenty year patent term provisions of 35 U.S.C. 154(a)(2).

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[21] Appl. No.: **08/847,796**

[22] Filed: **Apr. 28, 1997**

[51] **Int. Cl.**⁷ **H04B 1/38**

[52] **U.S. Cl.** **455/575; 455/566; 379/354**

[58] **Field of Search** 455/575, 425, 455/566, 567; 345/63, 147, 173, 121, 130, 156; 379/93.19, 93.23, 354; 382/298, 451

[56] **References Cited**

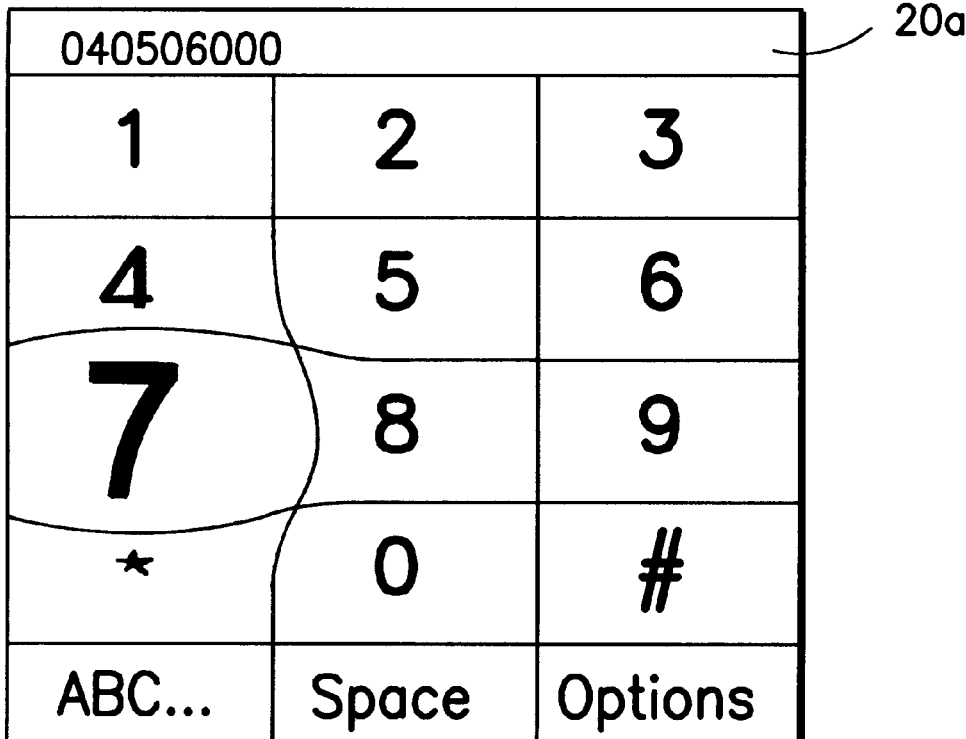
U.S. PATENT DOCUMENTS

4,755,811 7/1988 Slavin et al. 340/731

[57] **ABSTRACT**

A wireless user station (10), such as a cellular telephone, is provided with a touch sensitive input device, such as a touch-sensitive display (20) or a touchpad (23). A display device displays a plurality of symbols. A first location of a tactile input is detected and displayed symbols in the vicinity of the first location of the tactile input are magnified to occupy a larger display area. Subsequently, a second location of the tactile input is detected, thereby identifying a new position of the user's fingertip. After the second location on the touch sensitive screen remains constant, or after the user lifts the fingertip, the second location of the tactile input is reported and associated with the selected symbol.

19 Claims, 8 Drawing Sheets



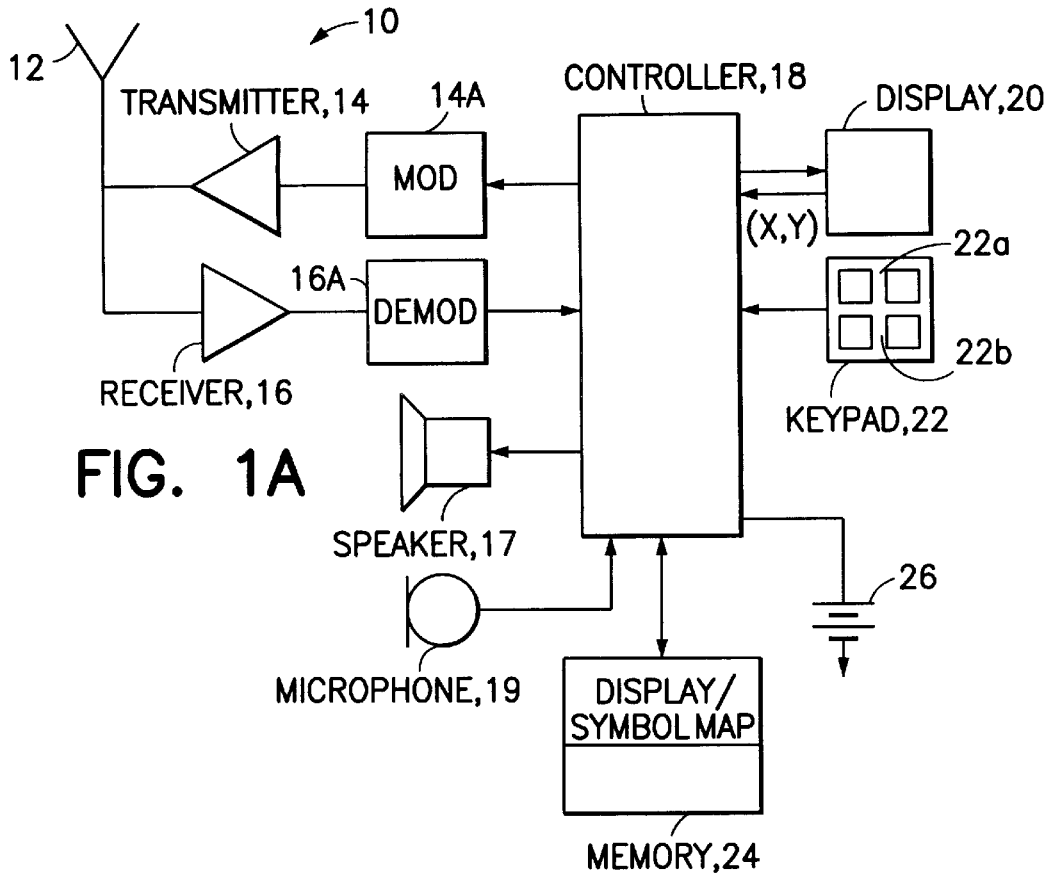


FIG. 1A

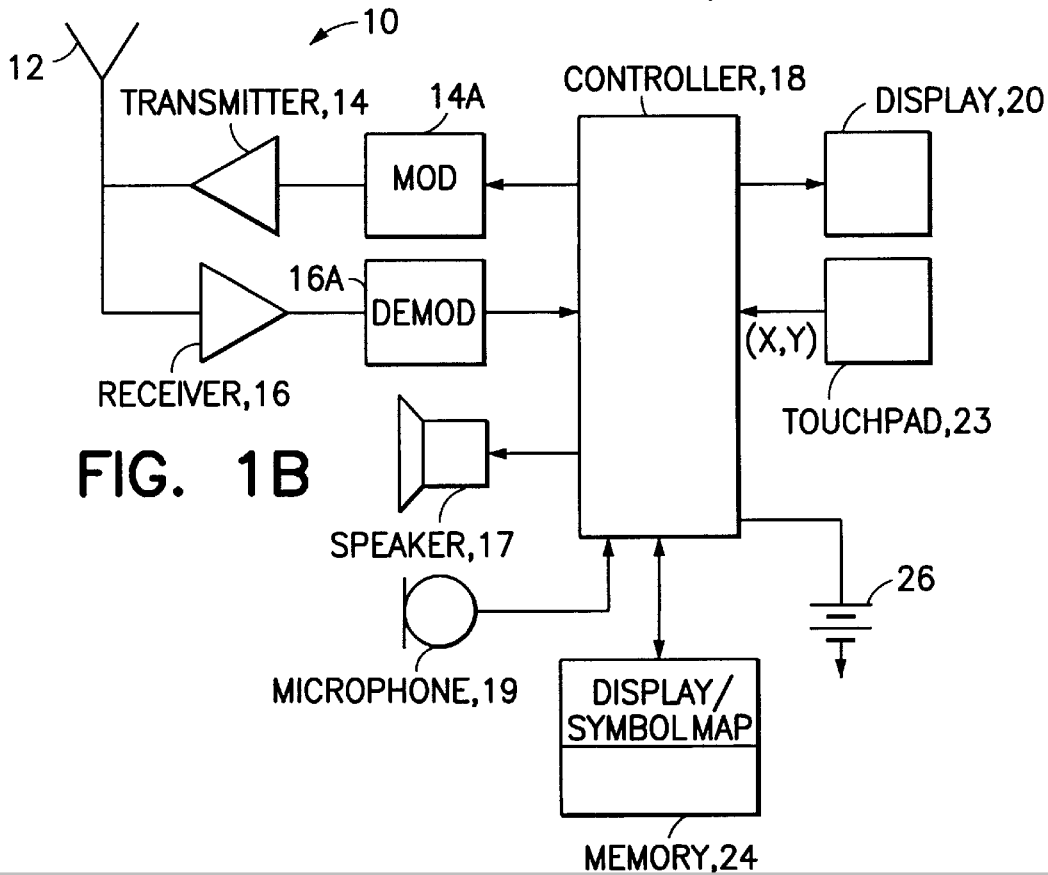


FIG. 1B

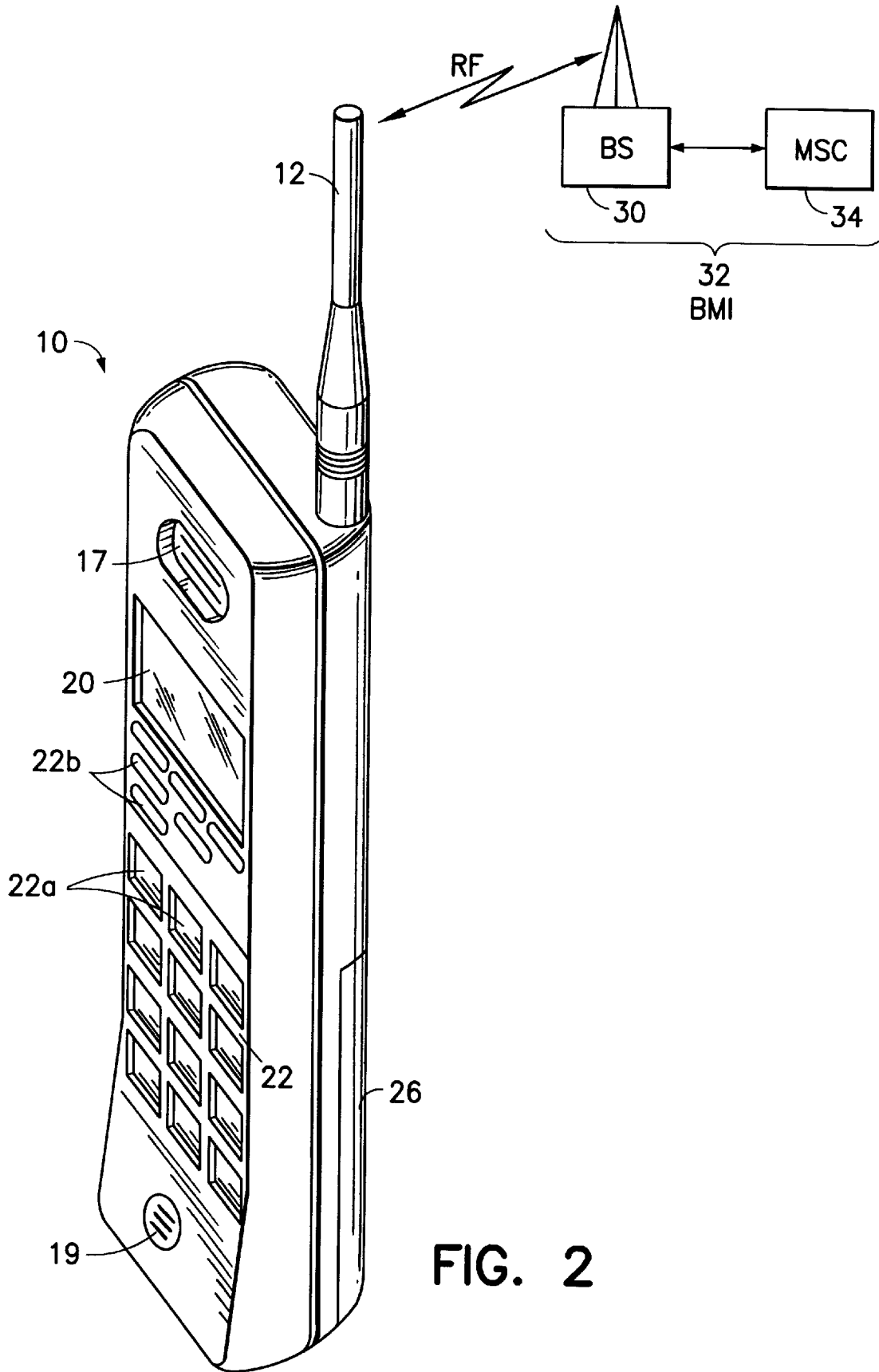


FIG. 2

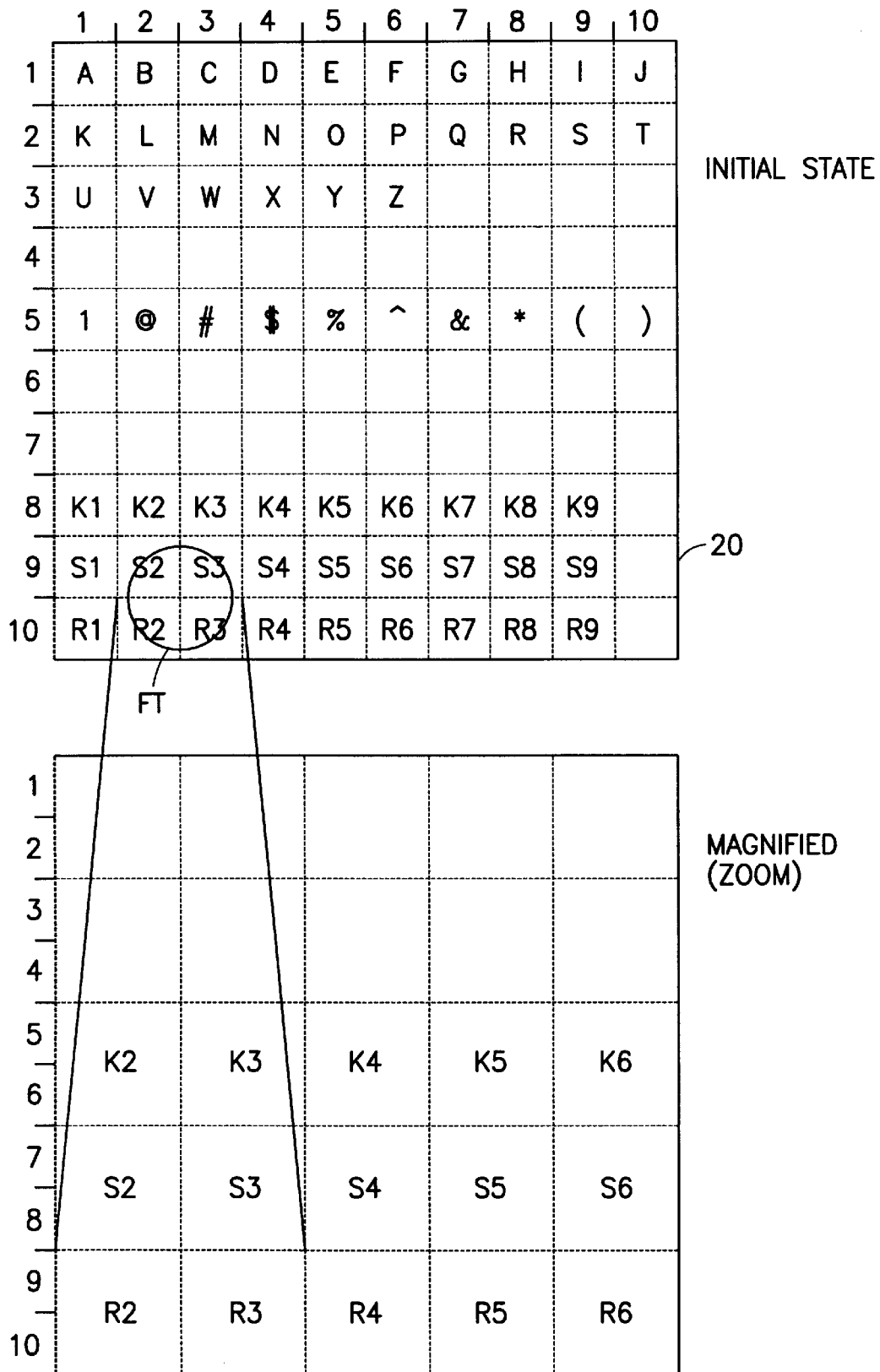


FIG. 3

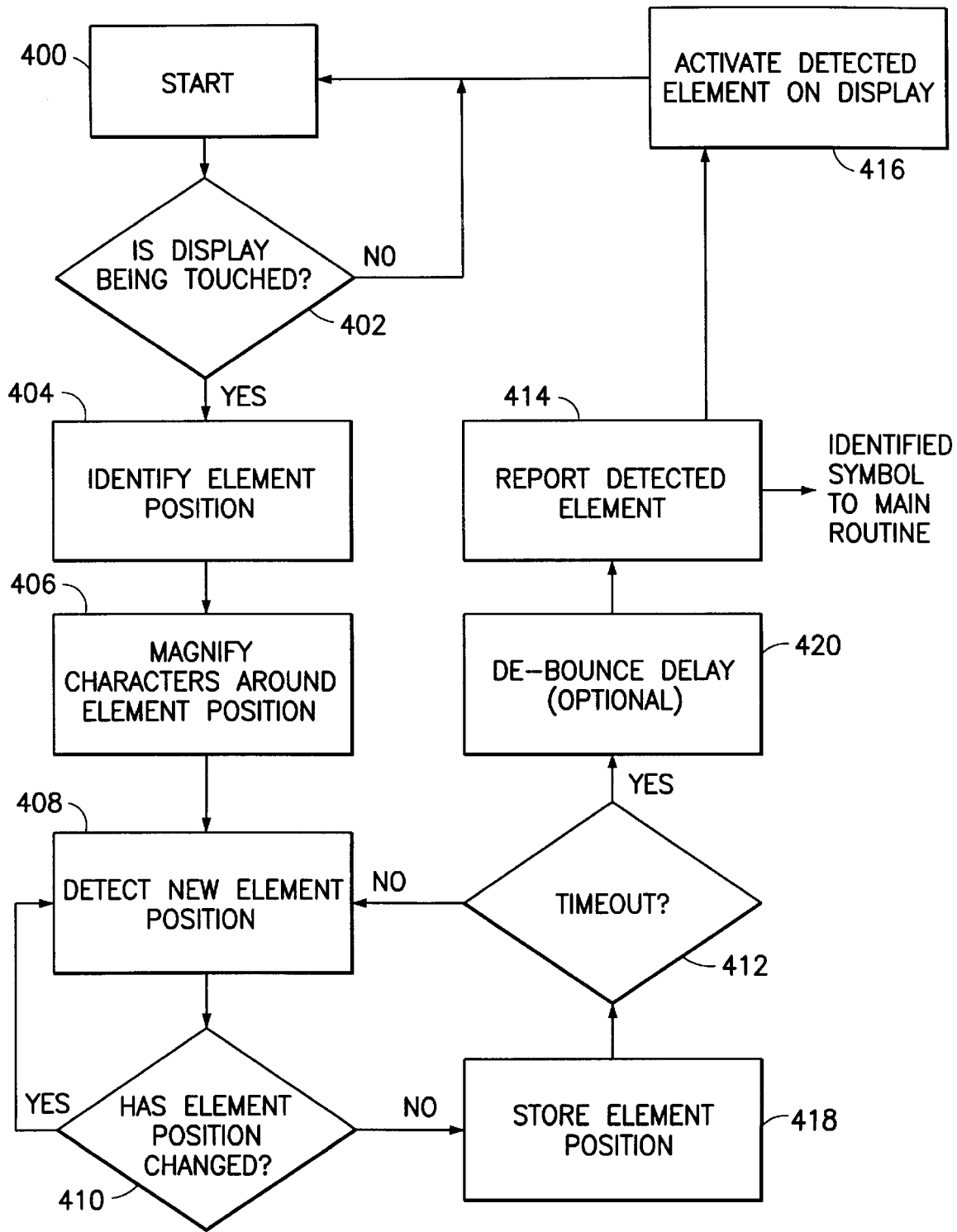


FIG. 4A

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