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United States Patent [19]

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Kimura

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[54] PORTABLE SECURE SEMICONDUCTOR MEMORY DEVICE

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[73] Assignee: **Mitsubishi Denki Kabushiki Kaisha, Tokyo, Japan**

[21] Appl. No.: **498,848**

[22] Filed: **Mar. 26, 1990**

[30] Foreign Application Priority Data

| | | |
|--------------------|-------------|---------|
| Mar. 31, 1989 [JP] | Japan | 1-77979 |
| Mar. 31, 1989 [JP] | Japan | 1-77980 |

[51] Int. Cl.⁵ **G11B 23/28**

[52] U.S. Cl. **380/3; 380/23; 380/25; 380/19; 235/380**

[58] Field of Search **380/3, 23, 25, 49; 235/380, 441, 382, 379, 492, 487**

[56] References Cited

U.S. PATENT DOCUMENTS

| | | | |
|-----------|---------|--------------------|---------|
| 4,007,355 | 2/1977 | Moreno | 235/61 |
| 4,092,524 | 5/1978 | Moreno | 235/419 |
| 4,102,493 | 6/1978 | Moreno | 235/419 |
| 4,697,072 | 9/1987 | Kawana | 235/380 |
| 4,734,569 | 3/1988 | Kawana et al. | 235/487 |
| 4,746,788 | 5/1988 | Kawana | 235/380 |
| 4,780,602 | 10/1988 | Kawana et al. | 235/380 |
| 4,794,236 | 12/1988 | Kawana et al. | 235/441 |
| 4,797,542 | 1/1989 | Hara | 235/380 |
| 4,845,351 | 7/1989 | Hara et al. | 235/492 |
| 5,010,237 | 4/1991 | Kawana | 235/379 |
| 5,120,939 | 6/1992 | Claus et al. | 235/382 |

FOREIGN PATENT DOCUMENTS

| | | |
|---------|---------|----------------------|
| 0114522 | 8/1984 | European Pat. Off. . |
| 0216298 | 4/1987 | European Pat. Off. . |
| 0286094 | 10/1988 | European Pat. Off. . |
| 2503423 | 10/1982 | France . |
| 53-6491 | 3/1978 | Japan . |
| 2154344 | 9/1985 | United Kingdom . |

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[57] ABSTRACT

A portable semiconductor memory device for interfacing with and exchanging information with an external terminal, said portable device having a security function for controlling access to a main memory. The main memory is adapted to exchange data with the external terminal by means of an interface bus which includes data lines, address lines and control lines. Access controls means in the portable unit is utilized to control access to the main memory. The unit also has a security memory comprising two sections. One section stores enciphered data which is read out to the external terminal, deciphered and returned to the unit as the first element used in a comparison. The second section of the security memory stores internal identification information. The two elements of identification information are provided to a comparator means which enables access to the main memory via the interface bus after a match is detected.

33 Claims, 6 Drawing Sheets

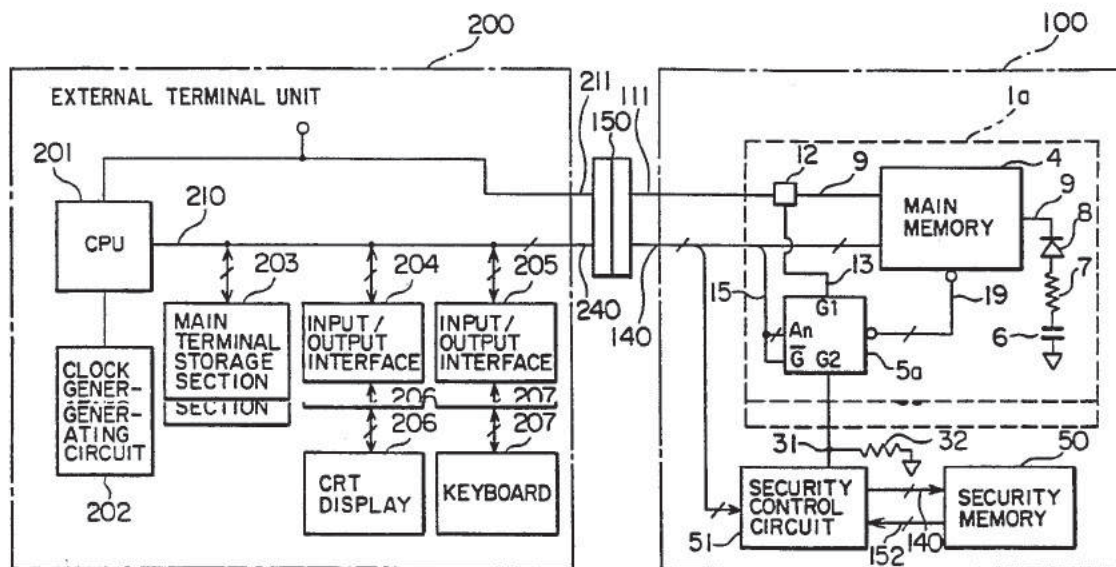


FIG. 1

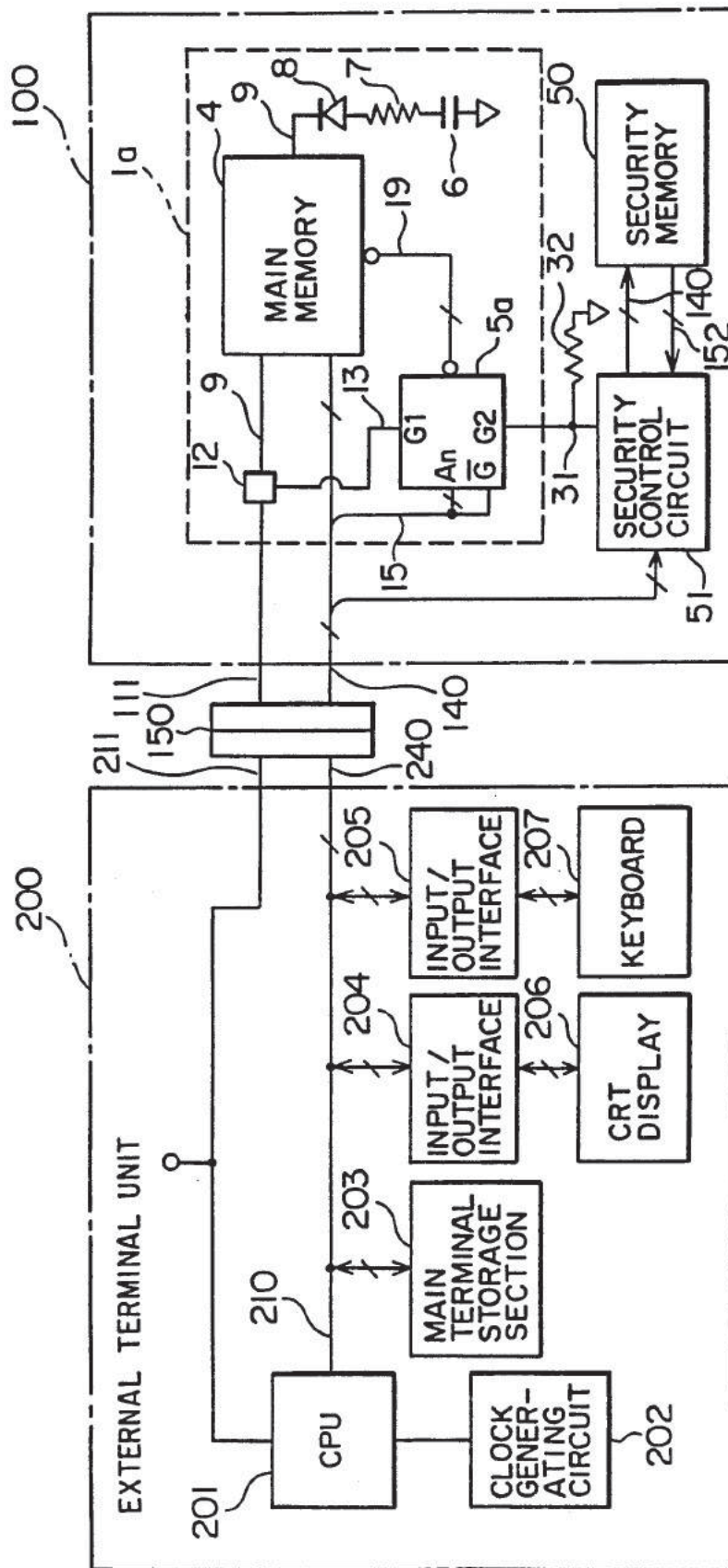


FIG. 2

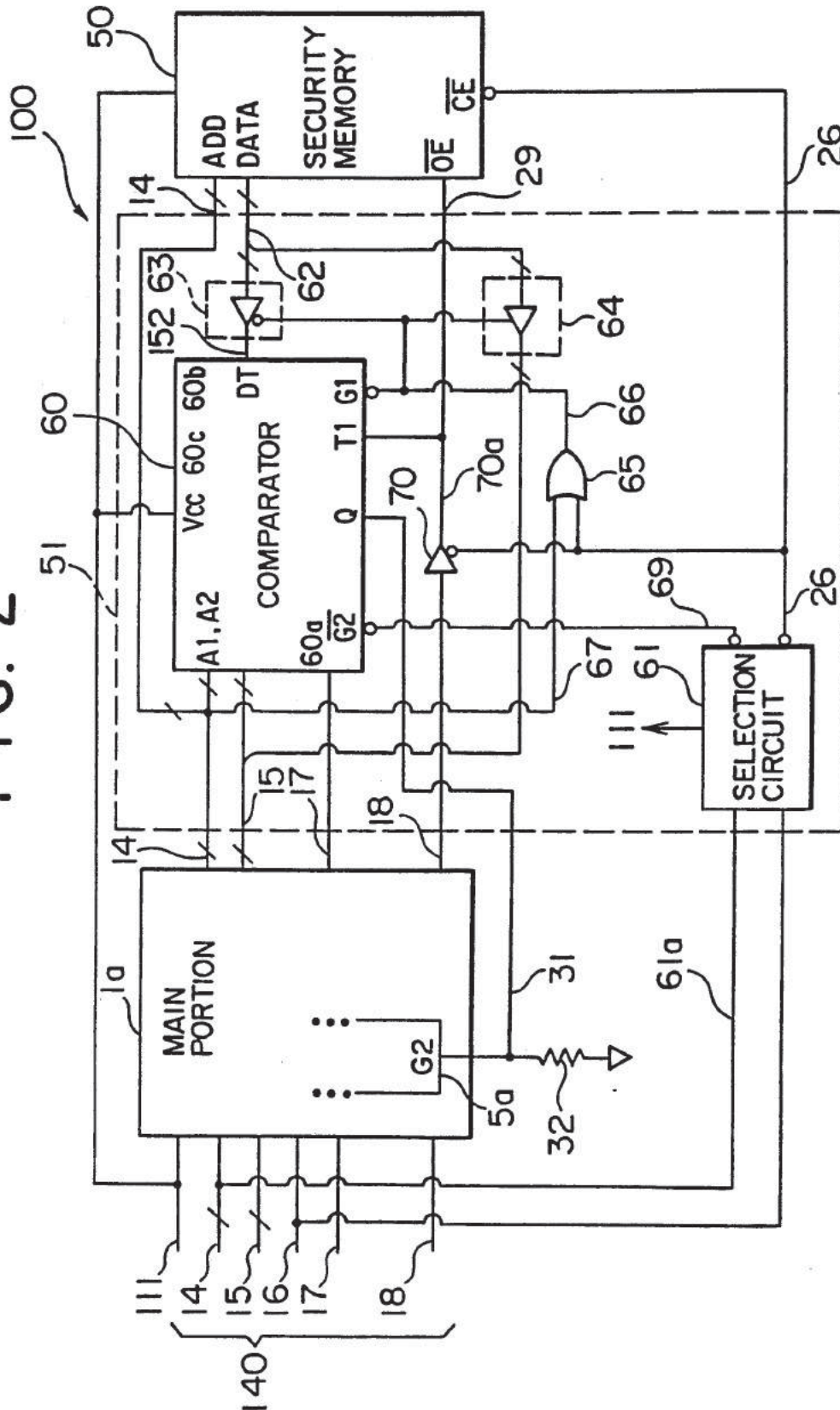


FIG. 3

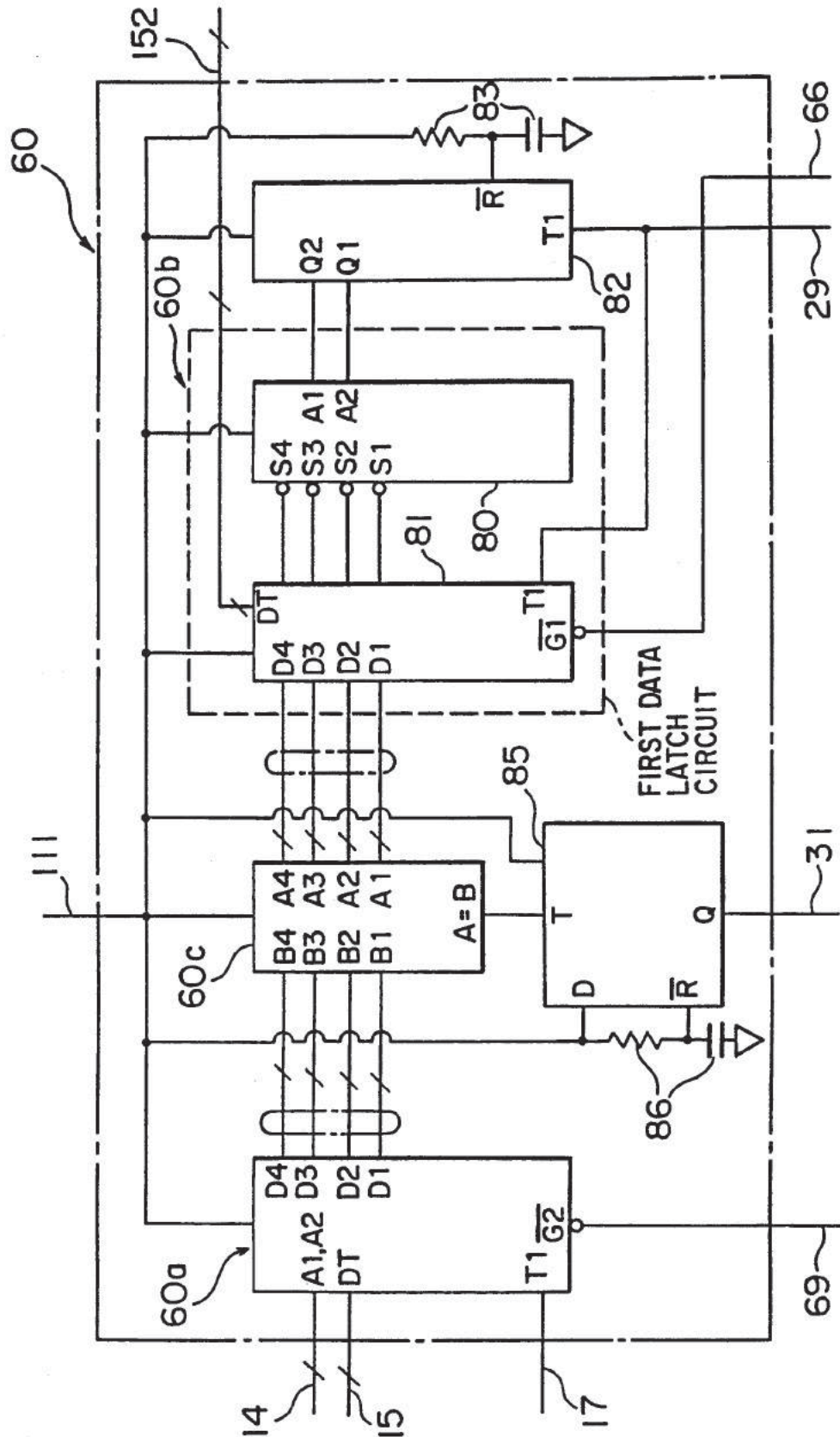


FIG. 4

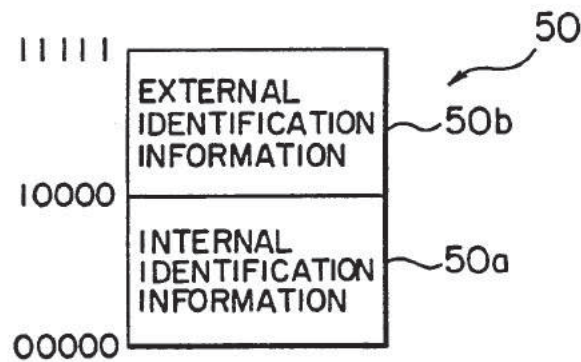
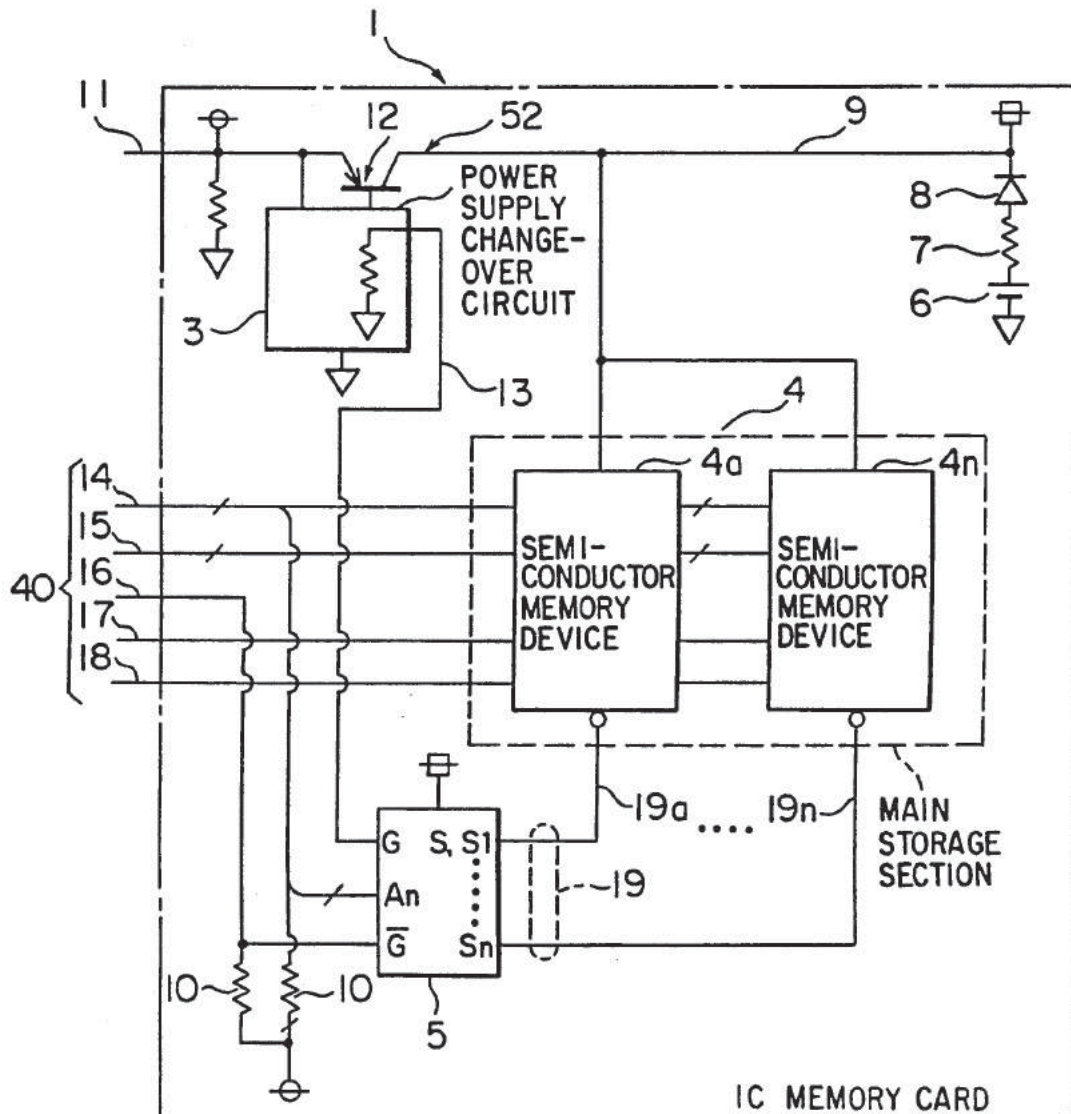


FIG. 7



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