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[54] OPTICALLY-READABLE CARDS

[75] Inventor: **Zvi Weinberger**, Jerusalem, Israel

[73] Assignee: **Teletoken Ltd., Holon, Israel**

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[58] **Field of Search** 283/91, 904; 235/480,
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[56] References Cited

U.S. PATENT DOCUMENTS

3,873,813 3/1975 Lahr et al. 235/488 X

4,103,150 7/1978 Von Ballmoos 235/487 X

4,143,810 3/1979 Greenaway 235/487

Primary Examiner—Paul A. Bell

Attorney, Agent, or Firm—Benjamin J. Barish

[57] ABSTRACT

An optically-readable value card for use in a vending system for vending goods or services includes a plurality of heat-sensitive optically-readable value elements each of which, upon heating to a first temperature above ambient, changes its color in a reversible manner, but upon heating to a second temperature above ambient and higher than the first temperature, changes to a second color in an irreversible manner. Each of the value elements is in the form of a light window having a layer of a thermochromic material which changes its color in a reversible manner when heated to the first temperature, and a layer of a thermographic material which changes its color in an irreversible manner when heated to the second temperature.

11 Claims, 3 Drawing Figures

