

EXHIBIT 1015

[54] METHOD FOR POWERING REMOTE VISUAL DISPLAYS AND ALLOWING FOR DATA EXCHANGE OVER THE SAME WIRE PAIR

[76] Inventor: Robert K. McCullough, 8236 E. 71st St., Suite 356, Tulsa, Okla. 74133

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[51] Int. Cl.⁵ H04M 11/04

[52] U.S. Cl. 340/310 A; 340/310 R; 340/538; 375/22; 375/23

[58] Field of Search 340/310 A, 310 R, 538, 340/825.06, 825.17, 825.29, 825.54, 505, 503; 455/73; 375/22, 23

[56] References Cited

U.S. PATENT DOCUMENTS

4,139,737	2/1979	Shimada	340/310 A
4,228,422	10/1980	Perry	340/310 R
4,408,185	10/1983	Rasmussen	340/825.54
4,535,401	8/1985	Penn	340/825.54

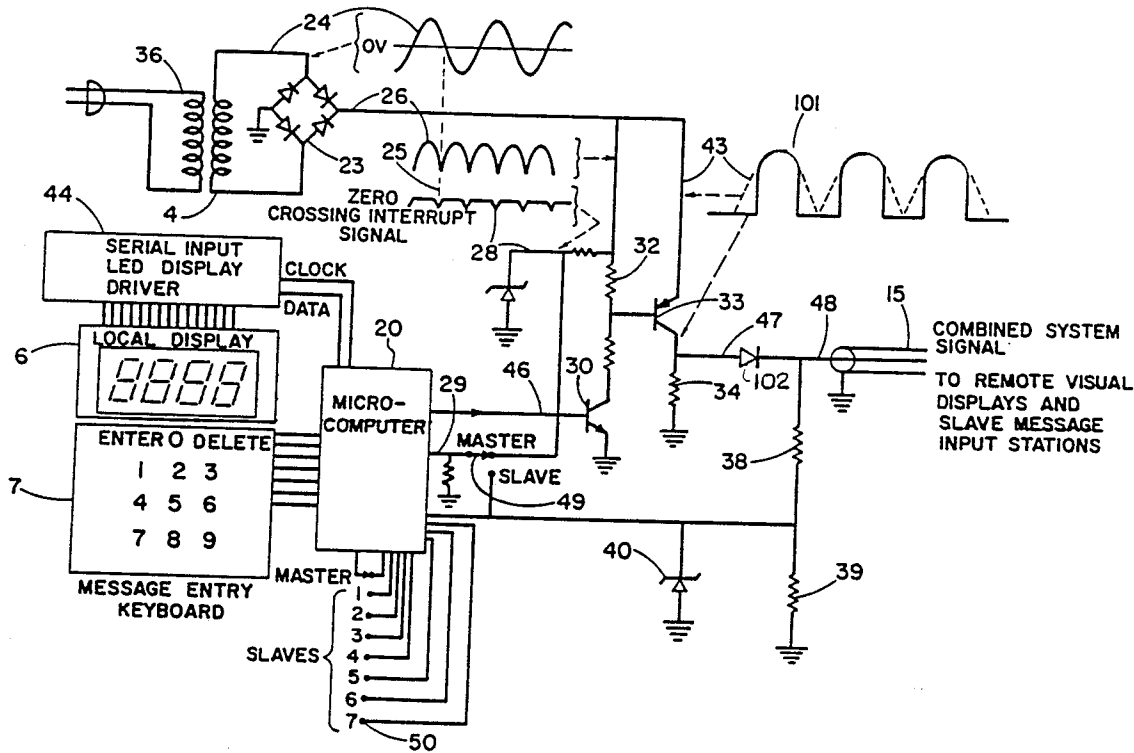
Primary Examiner—Joseph A. Orsino
 Assistant Examiner—Kinfe-Michael Negash

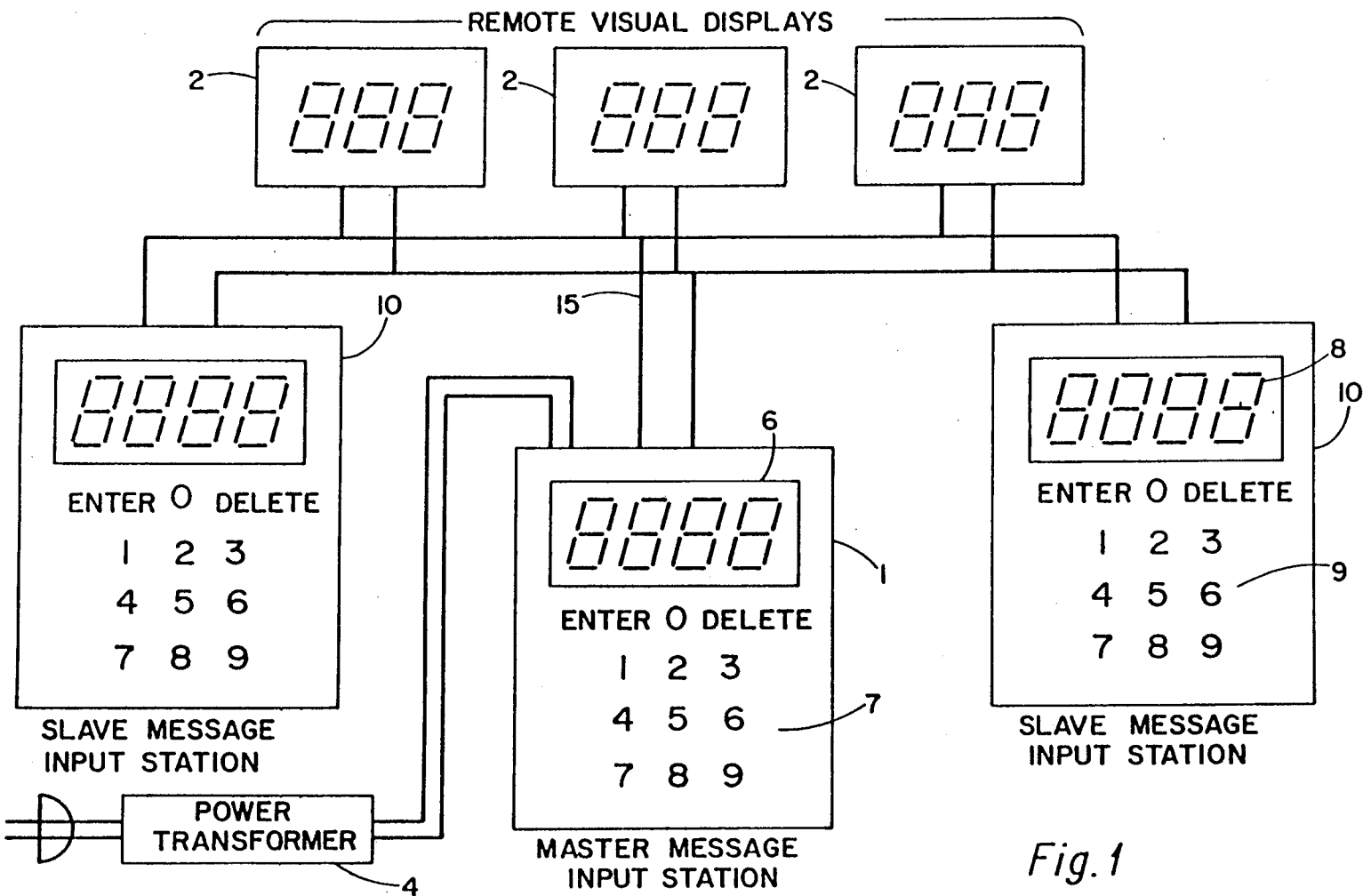
Attorney, Agent, or Firm—Robert R. Keegan

[57] ABSTRACT

A novel way of powering a remote visual display and allowing data interchanges over the same wire pair. Such a station may be used for displaying the time, paging a person or an advertising message. The wire pair that powers a remote visual display also carries the electrically encoded message signal. On the same wire pair there is provision for the master message input station to exchange data with slave message input stations without message collision. Information from an input station key pad is captured by the microprocessor which converts the message to a serial binary signal. This signal drives a power transistor which converts a full wave rectified a.c. power current to a pulse width modulated signal which drives the wire pair connected to a remote visual display. The remote visual display power supply rectifies these signal pulses for power to drive the control circuits and display mechanism (light sources or light reflectors) and decodes the pulse width for display message information. The master message input station uses the time between pulses to exchange data with the slave message input stations.

15 Claims, 6 Drawing Sheets





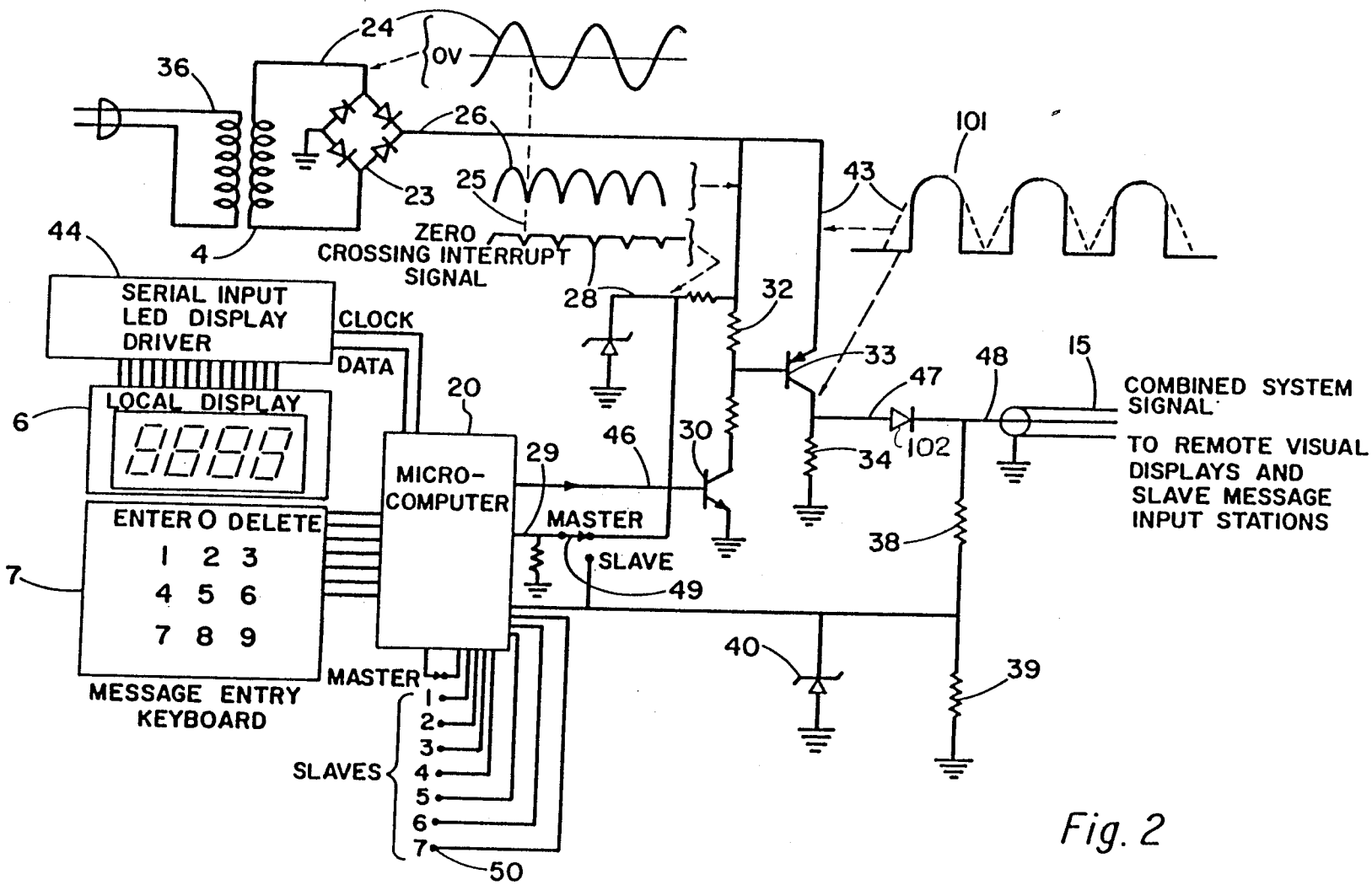


Fig. 2

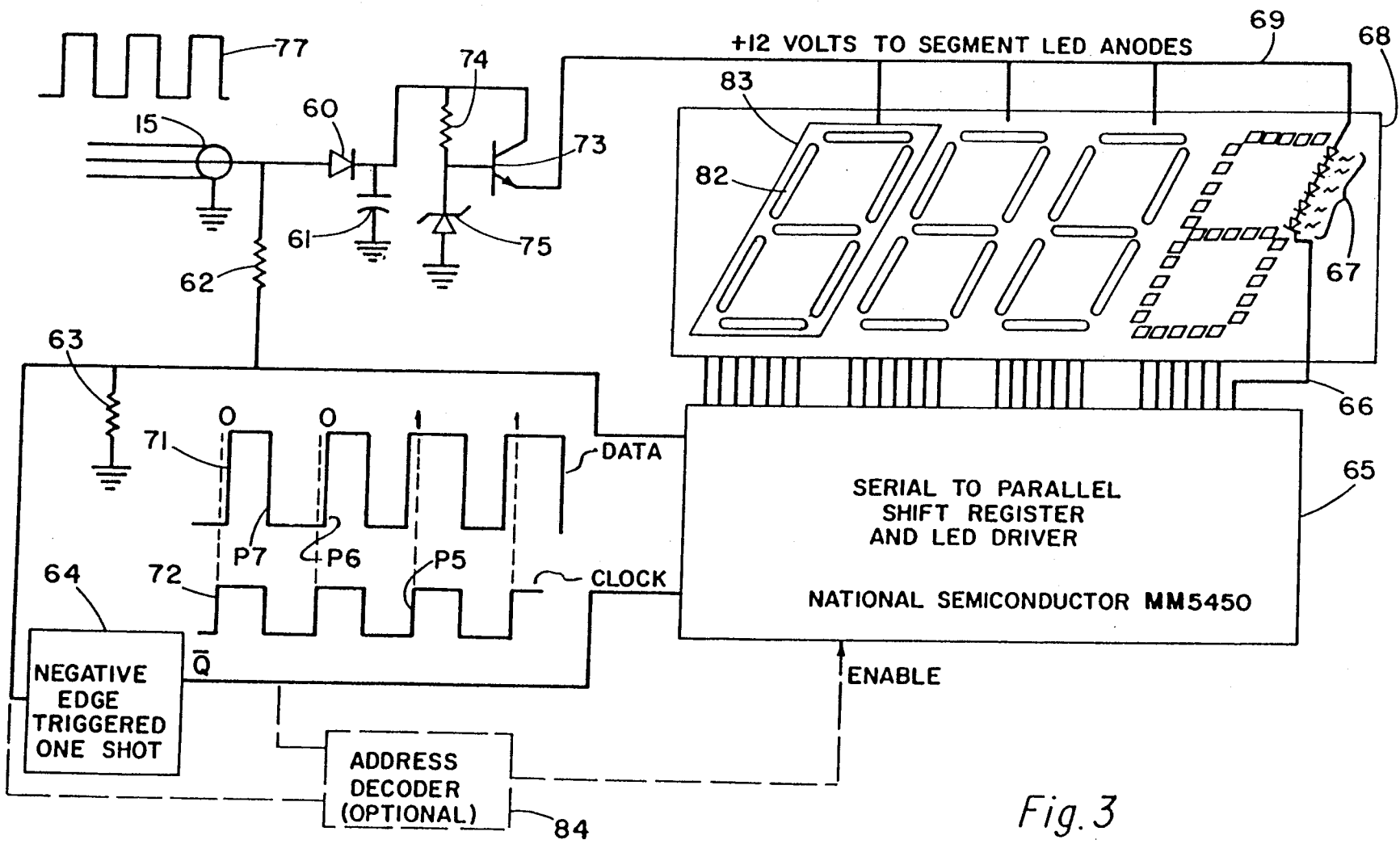


Fig. 3

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