

United States Patent [19]

Janney et al.

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[54] DATA LOGGING APPARATUS

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[51] Int. Cl.⁵ G04F 10/00

[52] U.S. Cl. 377/20; 364/569; 368/118

[58] Field of Search 377/20; 364/569; 368/118

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[57] ABSTRACT

In data logging applications an apparatus for real-time stamping data includes a reference time base, a short stopwatch circuit operative for generating a short-time stamp, and a long stopwatch circuit operative for generating at intervals a long-time stamp. Data to be logged with the short-time stamp is combined therewith and stored. A controller circuit controls the storage of the data and of the long-time and the short-time stamps. The controller circuit stores the long-time stamp at predetermined intervals.

5 Claims, 4 Drawing Sheets

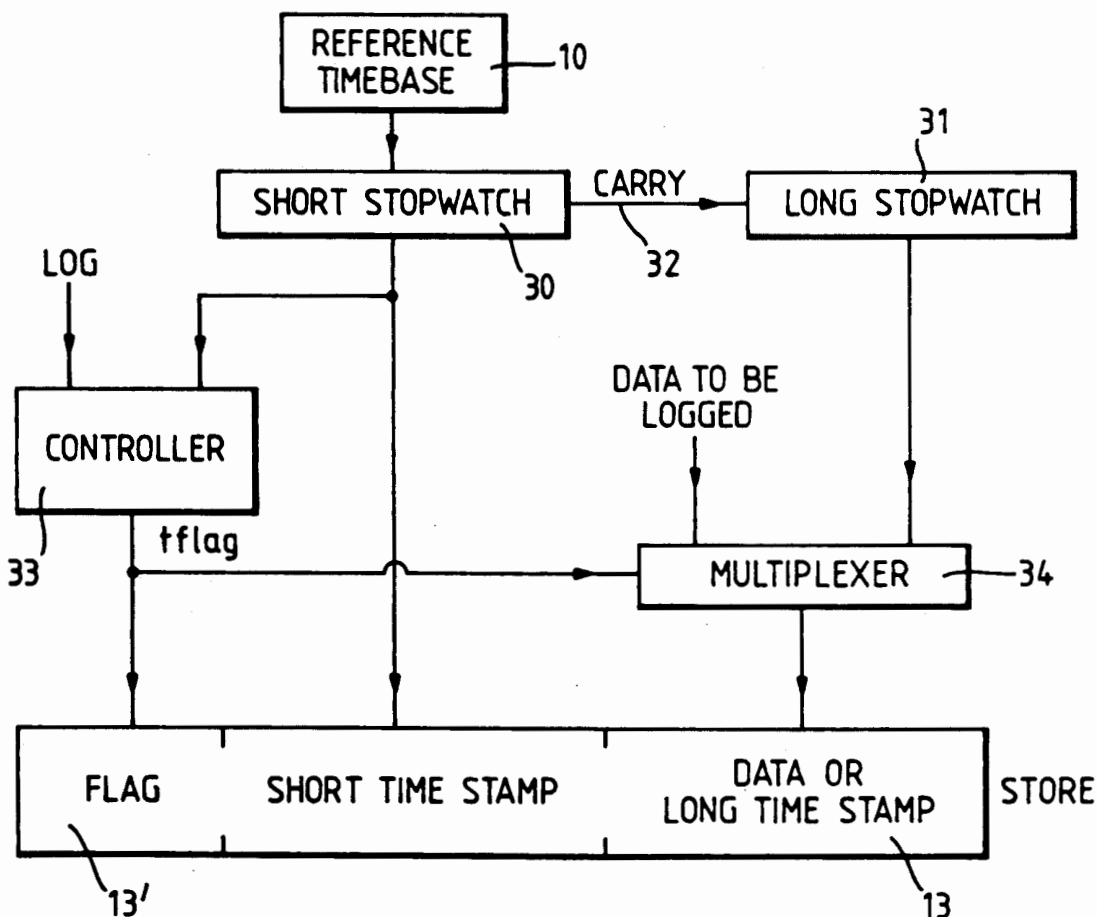


Fig. 1. PRIOR ART

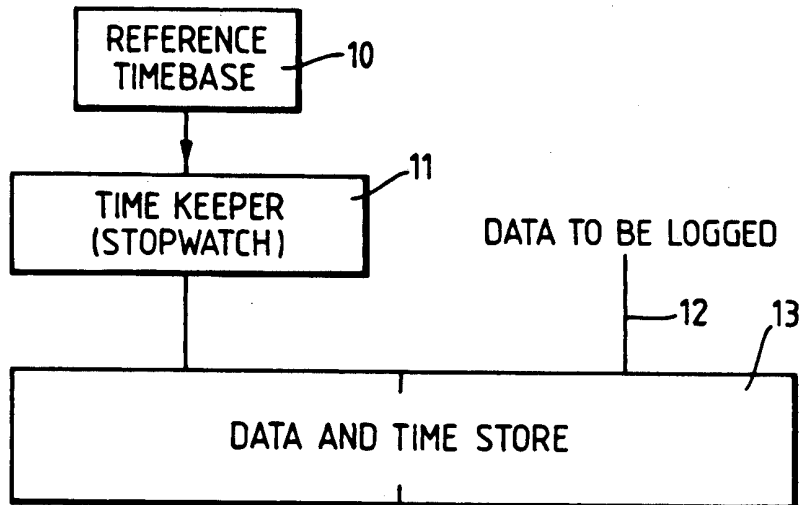


Fig. 2.

9-BIT TIME	DATA	FULL-TIME
123	000A	0123
500	000B	0500
488	000C	1000
476	000D	1500
464	000E	2000

Fig. 3.

MODULO - 9-BIT TIME	DATA	FULL-TIME
123	000A	0123
500	000B	0500
488	000C	1000
478	000D	1500
476	[0003]	2012
464	000E	4048
464	[0008]	4560

} INTERVAL = 2548

INDICATE LONG TIME STAMPS

Fig. 4.

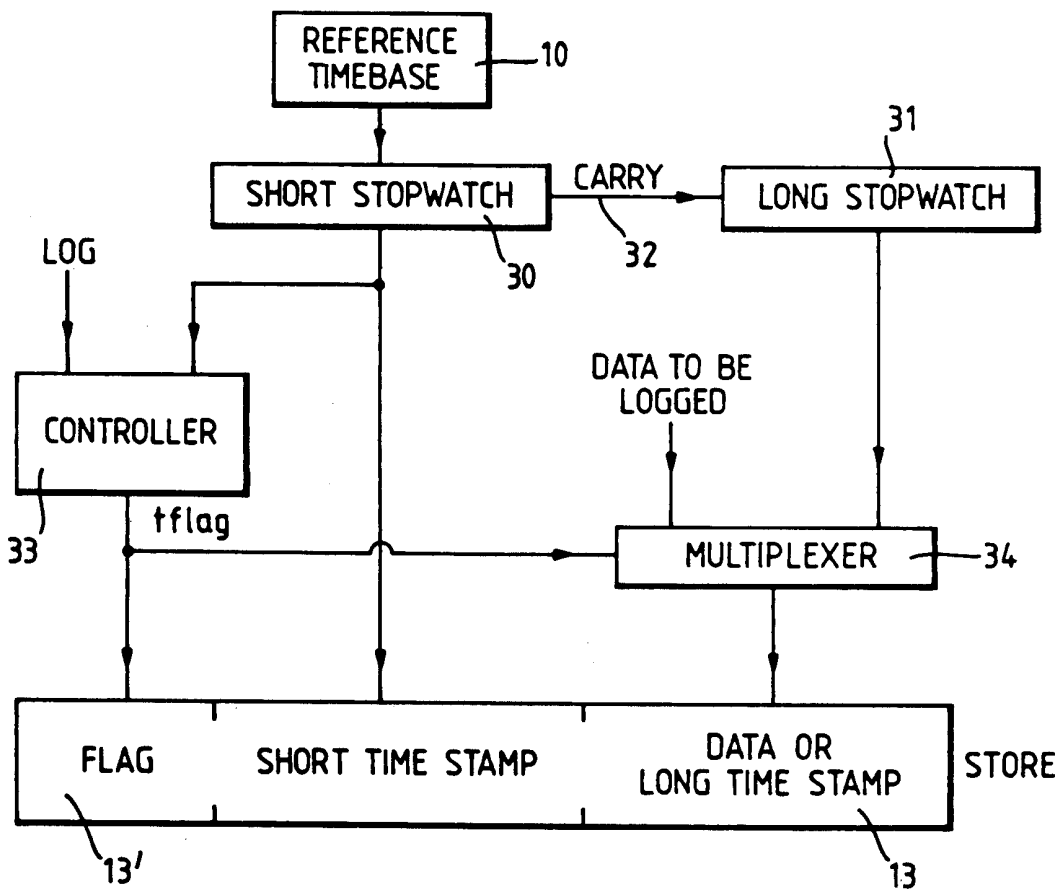


Fig. 5.

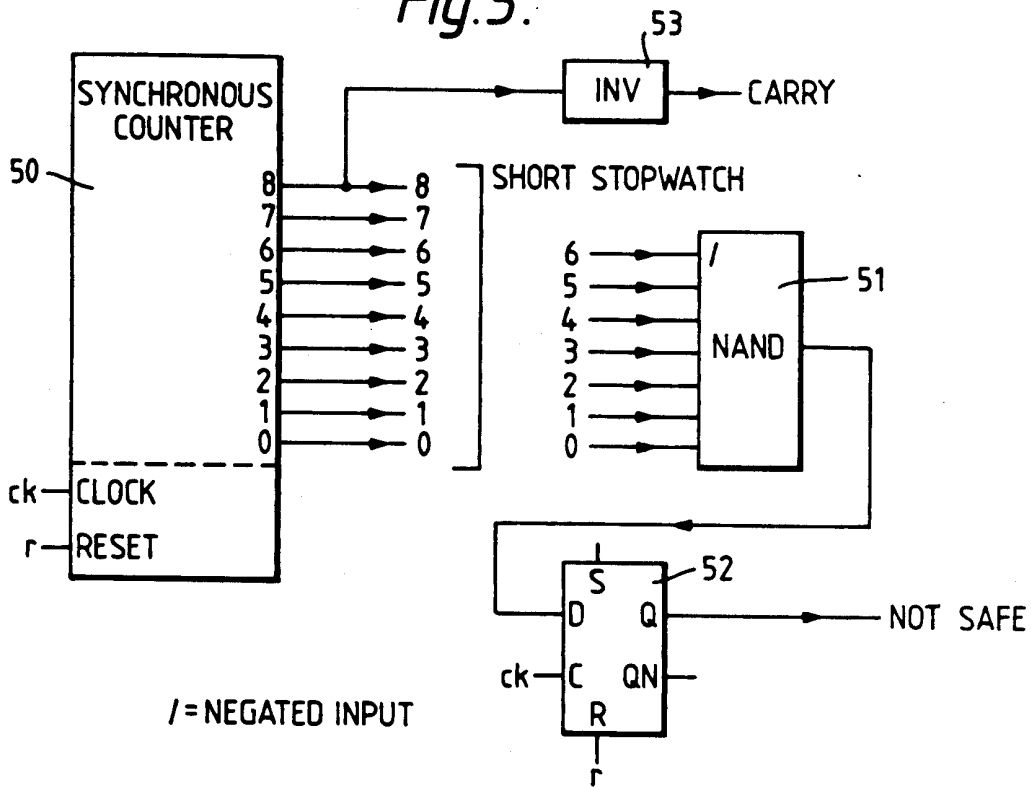


Fig. 6.

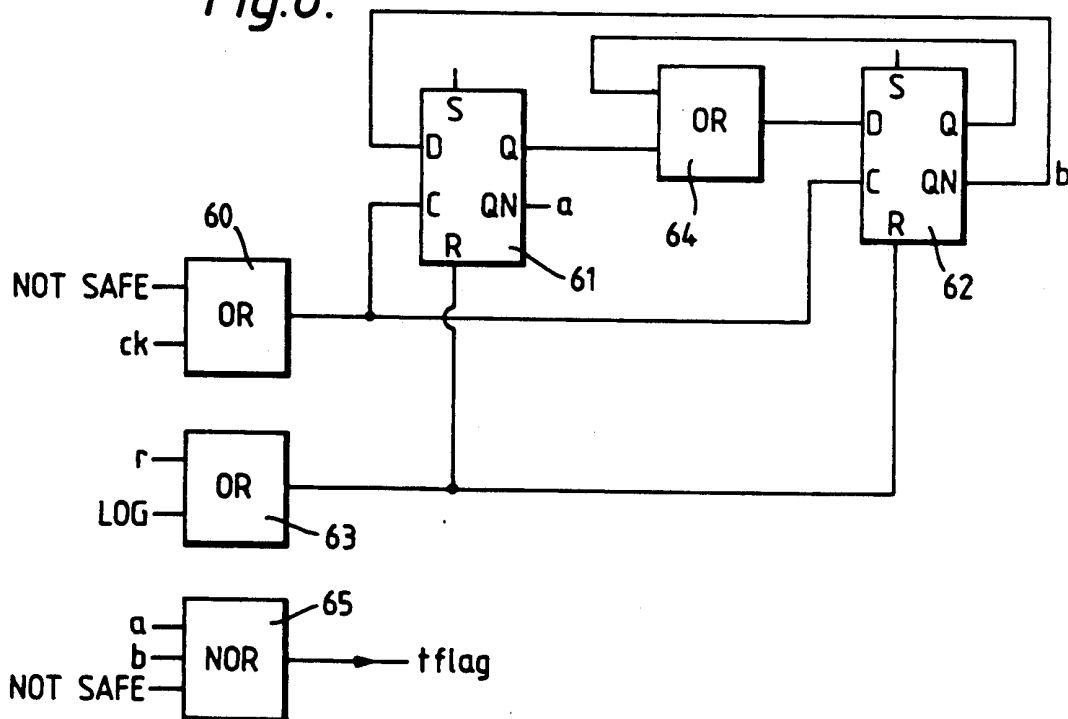


Fig. 7.

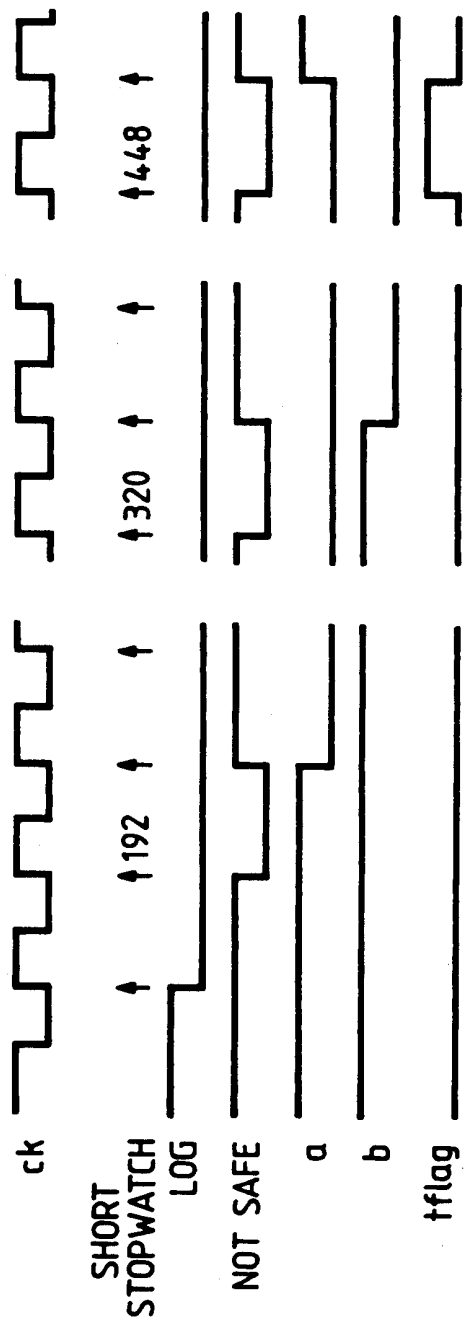
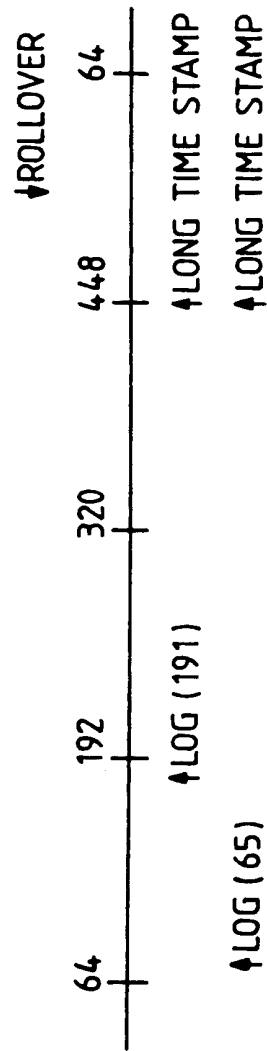


Fig. 8.



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