

[54] **TOUCH POSITION SENSITIVE SURFACE**  
[75] **Inventor:** Leonard R. Kasday, Plainsboro, N.J.  
[73] **Assignee:** AT&T Bell Laboratories, Murray Hill, N.J.  
[21] **Appl. No.:** 333,744  
[22] **Filed:** Dec. 23, 1981

**Related U.S. Application Data**

[63] Continuation of Ser. No. 140,715, Apr. 16, 1980, abandoned.  
[51] **Int. Cl.<sup>3</sup>** ..... **G08C 9/00**  
[52] **U.S. Cl.** ..... **340/365 P; 178/18; 250/549; 340/712**  
[58] **Field of Search** ..... 340/365 P, 712, 815.24, 340/815.31; 178/18; 250/549

**References Cited**

**U.S. PATENT DOCUMENTS**

2,227,083 12/1940 Handrick ..... 178/18  
3,271,515 9/1966 Harper .  
3,526,775 9/1970 Friedrich et al. .... 340/365 P  
3,621,268 11/1971 Friedrich et al. .  
3,673,327 6/1972 Johnson et al. .... 340/712 X  
3,707,715 12/1972 Perotto ..... 340/365 P  
3,764,813 10/1973 Clement et al. .

3,775,560 11/1973 Ebeling et al. .  
3,846,826 11/1974 Mueller .  
4,177,354 12/1979 Mathews .  
4,180,702 12/1979 Sick et al. .  
4,198,623 4/1980 Misek et al. .

**OTHER PUBLICATIONS**

D. Brini, L. Pell, O. Rimondi, P. Veronesi, "On Large Scintillation Counters", *Supplemento al vol. II, Serie X, Del Nuovo Cimento*, N. 4, 1955, 20 Semestre, pp. 1062-1069.

*Primary Examiner*—David L. Trafton  
*Attorney, Agent, or Firm*—David H. Tannenbaum

[57] **ABSTRACT**

A touch sensitive device is arranged with substantially parallel surfaces which are at least partially transparent to light. A flexible membrane is supported above the top surface of the screen and when the overlay is flexed into contact with the screen, light which had passed through the screen, is trapped between the screen surfaces by total internal reflection. The edges of the screen are fitted with light detectors for gathering the trapped light. Using this arrangement positional determination of one or more screen touches is possible.

**30 Claims, 9 Drawing Figures**

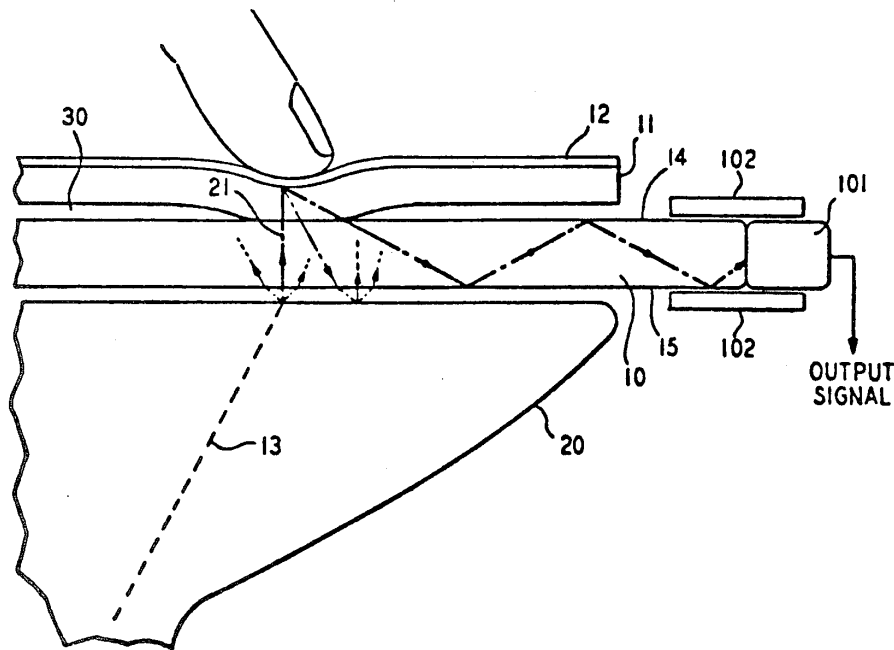
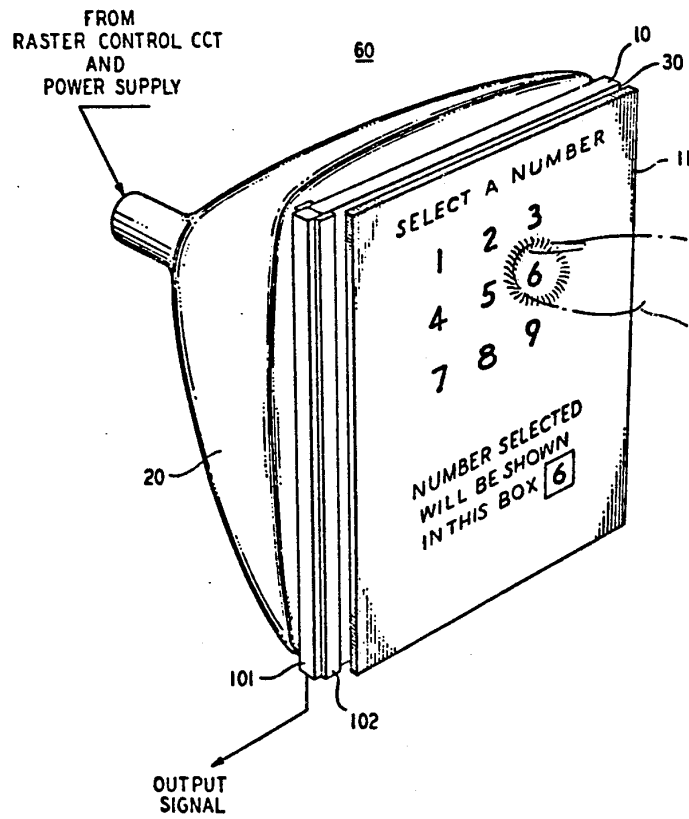


FIG. 1



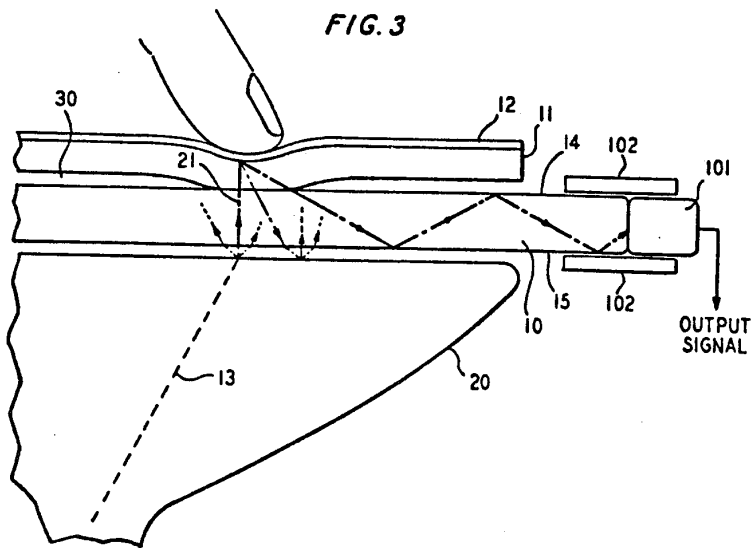
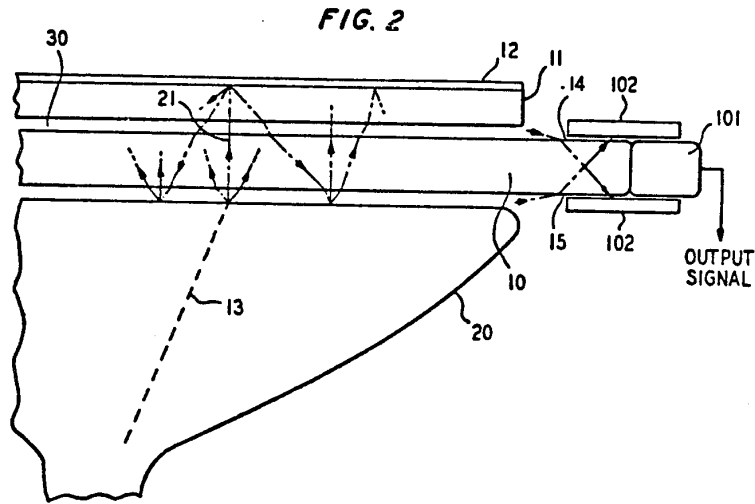


FIG. 4

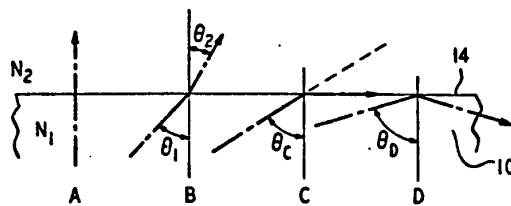


FIG. 5

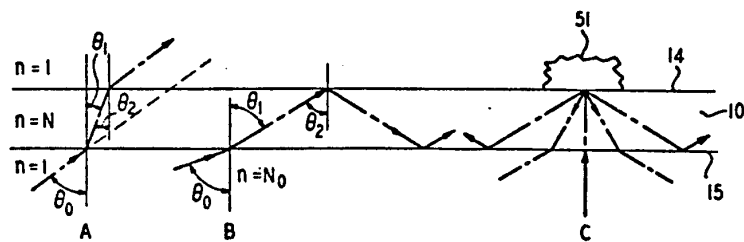


FIG. 6

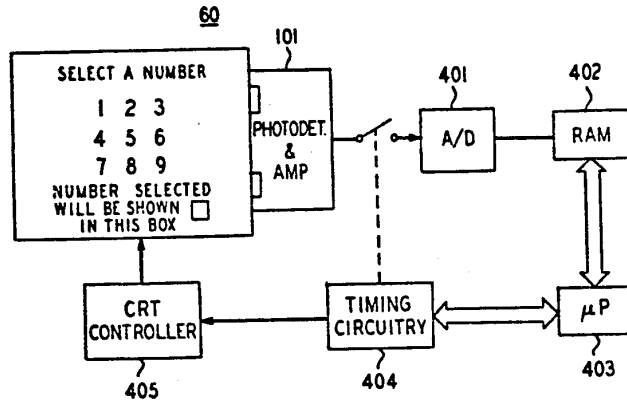
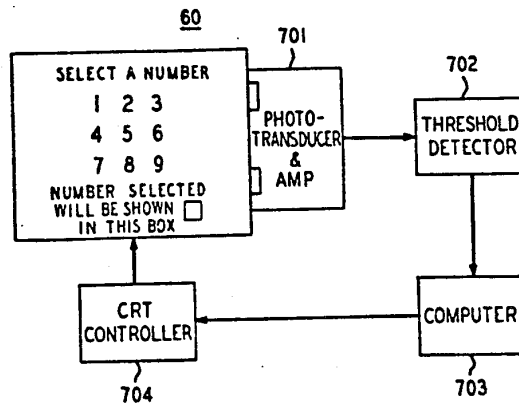


FIG. 7



# Explore Litigation Insights

Docket Alarm provides insights to develop a more informed litigation strategy and the peace of mind of knowing you're on top of things.

## Real-Time Litigation Alerts



Keep your litigation team up-to-date with **real-time alerts** and advanced team management tools built for the enterprise, all while greatly reducing PACER spend.

Our comprehensive service means we can handle Federal, State, and Administrative courts across the country.

## Advanced Docket Research



With over 230 million records, Docket Alarm's cloud-native docket research platform finds what other services can't. Coverage includes Federal, State, plus PTAB, TTAB, ITC and NLRB decisions, all in one place.

Identify arguments that have been successful in the past with full text, pinpoint searching. Link to case law cited within any court document via Fastcase.

## Analytics At Your Fingertips



Learn what happened the last time a particular judge, opposing counsel or company faced cases similar to yours.

Advanced out-of-the-box PTAB and TTAB analytics are always at your fingertips.

## API

Docket Alarm offers a powerful API (application programming interface) to developers that want to integrate case filings into their apps.

## LAW FIRMS

Build custom dashboards for your attorneys and clients with live data direct from the court.

Automate many repetitive legal tasks like conflict checks, document management, and marketing.

## FINANCIAL INSTITUTIONS

Litigation and bankruptcy checks for companies and debtors.

## E-DISCOVERY AND LEGAL VENDORS

Sync your system to PACER to automate legal marketing.