



US 20070215377A1

(19) **United States**

(12) **Patent Application Publication**  
**AOKI**

(10) **Pub. No.: US 2007/0215377 A1**

(43) **Pub. Date: Sep. 20, 2007**

(54) **CIRCUIT BOARD, ELECTRO-OPTICAL DEVICE, AND ELECTRIC APPARATUS**

(75) Inventor: **Takashi AOKI**, Suwa (JP)

Correspondence Address:  
**HARNES, DICKEY & PIERCE, P.L.C.**  
**P.O. BOX 828**  
**BLOOMFIELD HILLS, MI 48303**

(73) Assignee: **SEIKO EPSON CORPORATION**, Tokyo (JP)

(21) Appl. No.: **11/685,978**

(22) Filed: **Mar. 14, 2007**

(30) **Foreign Application Priority Data**

Mar. 15, 2006 (JP) ..... 2006-071727

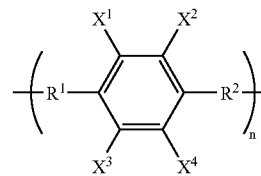
**Publication Classification**

(51) **Int. Cl.**  
**H05K 1/03** (2006.01)

(52) **U.S. Cl.** ..... **174/250; 174/255**

(57) **ABSTRACT**

A circuit board includes a source electrode, a drain electrode, and a gate electrode provided on a surface of a substrate, a first insulating layer insulating the source electrode and the drain electrode from the gate electrode, an organic semiconductor layer provided so as to contact the first insulating layer, and a second insulating layer provided so as to contact the organic semiconductor layer, wherein the second insulating layer includes a compound represented by Formula 1,



where R<sup>1</sup> and R<sup>2</sup> each independently represent substituted or unsubstituted alkylene group which can have; X<sup>1</sup>, X<sup>2</sup>, X<sup>3</sup>, and X<sup>4</sup> each represent hydrogen or an electrophilic group, but not all hydrogen and n represents a number in the range of 100 to 100,000.

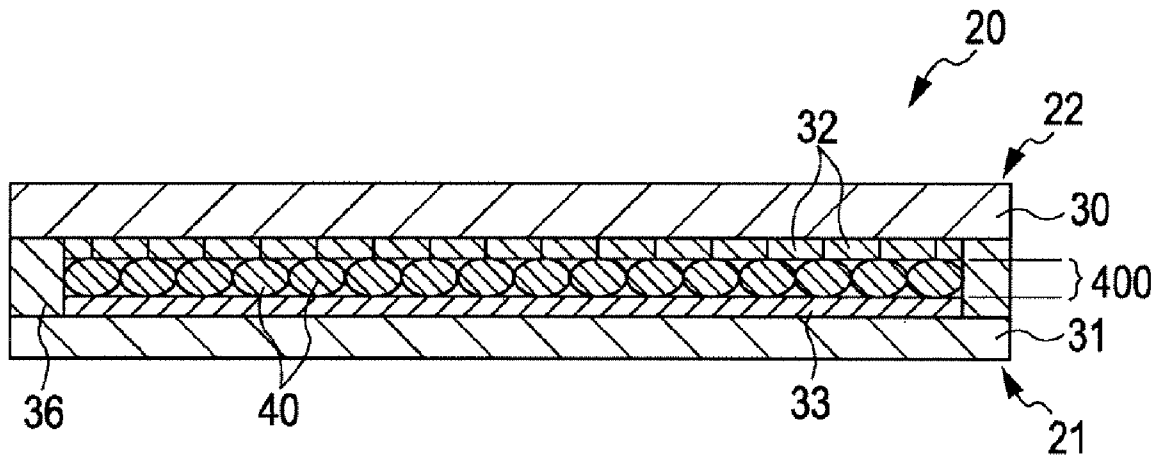


FIG. 1

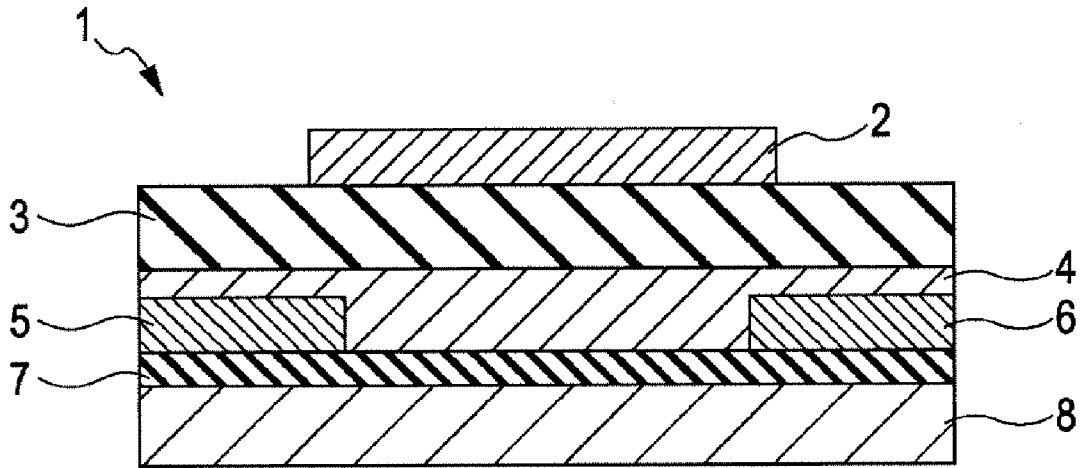


FIG. 2

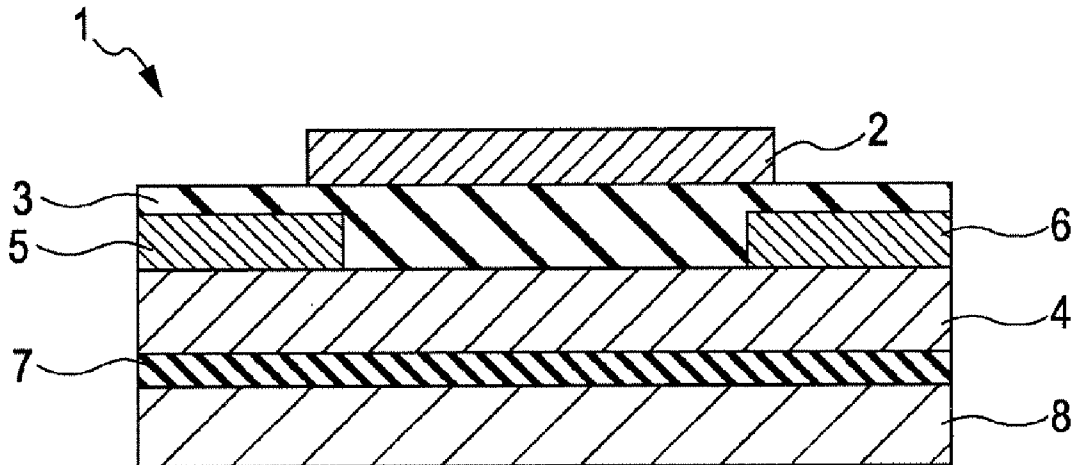


FIG. 3

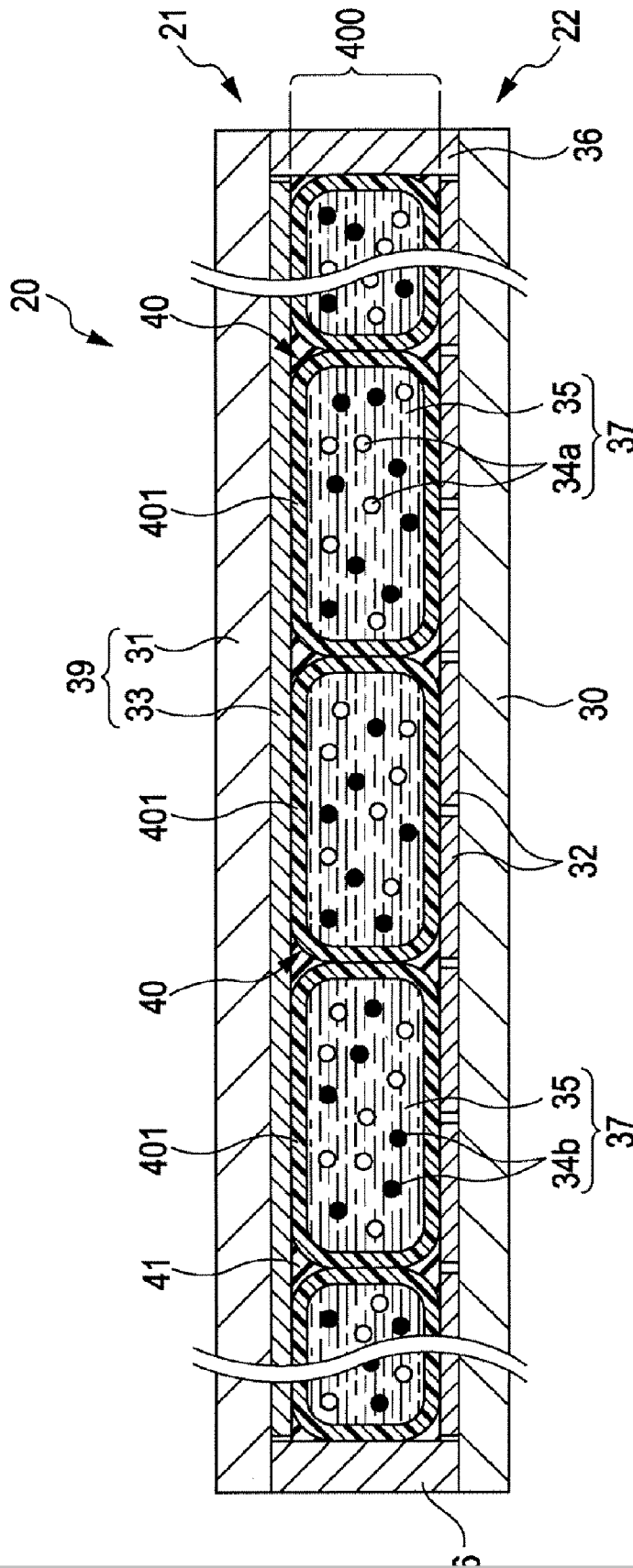
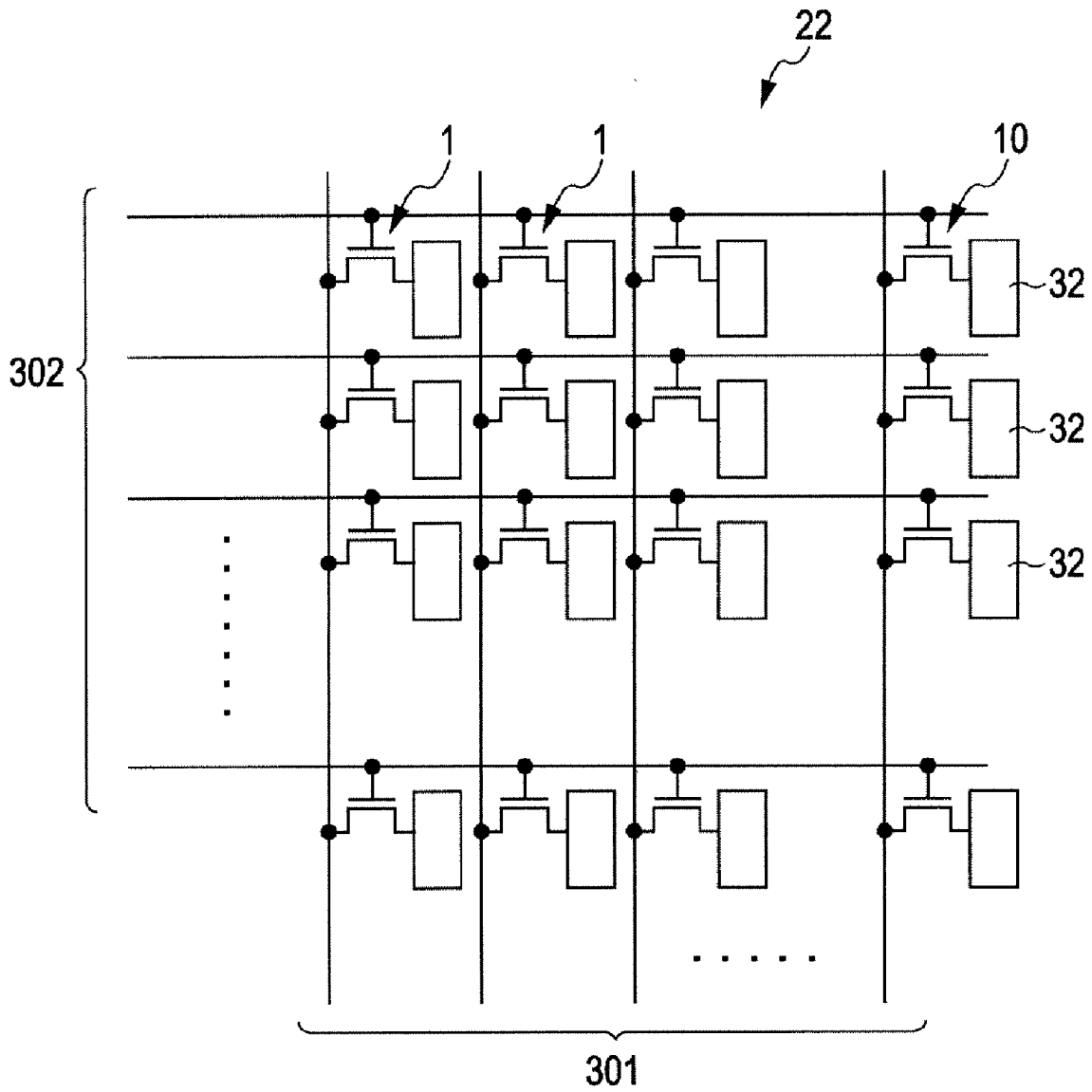
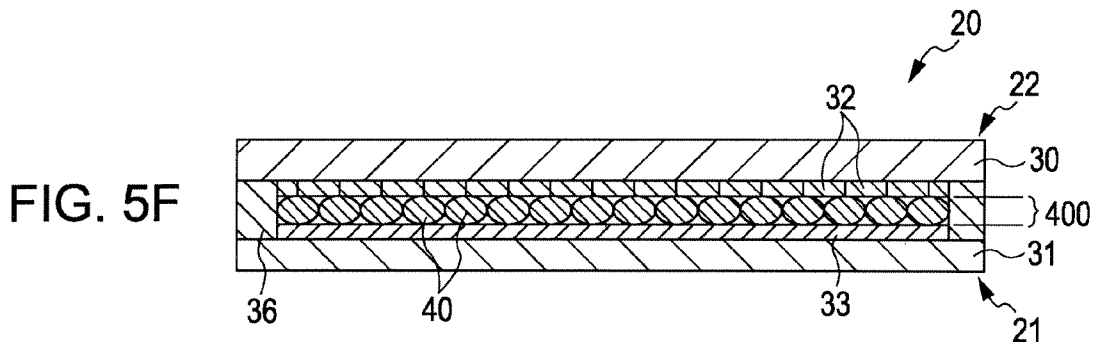
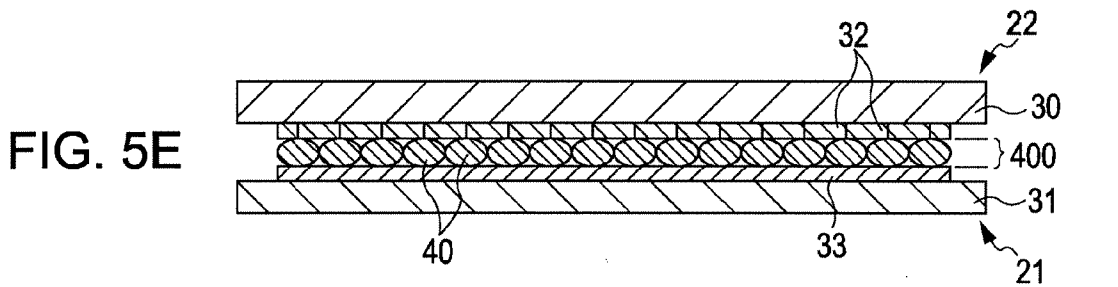
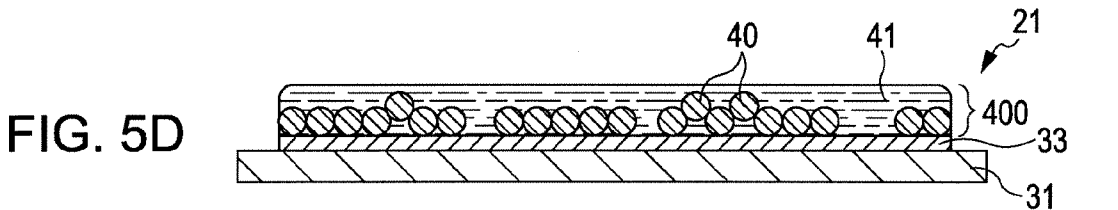
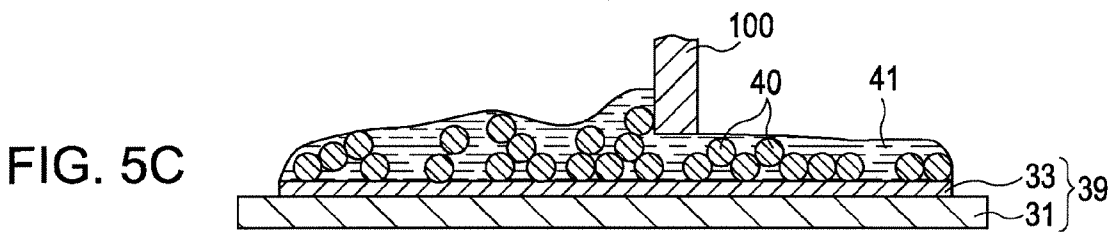
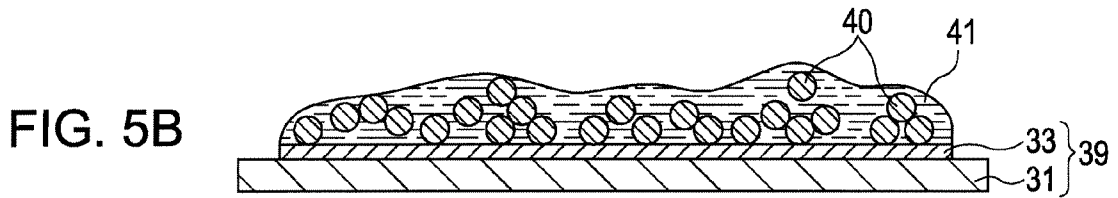
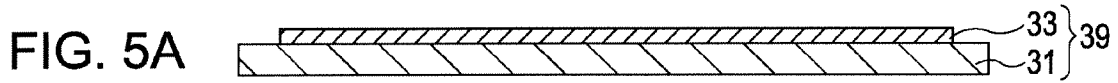


FIG. 4





# 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.