



US006211649B1

(12) **United States Patent**  
**Matsuda**

(10) **Patent No.:** **US 6,211,649 B1**  
(45) **Date of Patent:** **Apr. 3, 2001**

(54) **USB CABLE AND METHOD FOR CHARGING BATTERY OF EXTERNAL APPARATUS BY USING USB CABLE**

5,723,970 \* 3/1998 Bell .

**FOREIGN PATENT DOCUMENTS**

(75) Inventor: **Noriyuki Matsuda**, Tokyo (JP)

10-326128 12/1998 (JP) .

(73) Assignee: **Sourcenext Corporation**, Tokyo (JP)

\* cited by examiner

(\* ) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

*Primary Examiner*—Edward H. Tso

(74) *Attorney, Agent, or Firm*—Wenderoth, Lind & Ponack, L.L.P.

(21) Appl. No.: **09/531,149**

(22) Filed: **Mar. 17, 2000**

(57) **ABSTRACT**

(30) **Foreign Application Priority Data**

Mar. 25, 1999 (JP) ..... 11-081574

(51) **Int. Cl.**<sup>7</sup> ..... **H01M 10/44; H01M 10/46**

(52) **U.S. Cl.** ..... **320/115; 320/163**

(58) **Field of Search** ..... 320/105, 111, 320/112, 113, 114, 115, 128, 134, 161, 162, 163, 164

A USB cable according to the present invention has a USB connector connected with a USB port of a PC (Personal Computer), a phone connector connected with a connector of an external connector such as a mobile phone, a control unit, which is situated between the USB connector and the phone connector, for charging a battery of the mobile phone by using power supplied from the USB port of the PC and for transmitting and receiving data with the PC and the mobile phone, and a cable for connecting the USB connector and the phone connector with the control unit respectively.

(56) **References Cited**

**U.S. PATENT DOCUMENTS**

5,510,691 \* 4/1996 Palatov .

**13 Claims, 5 Drawing Sheets**

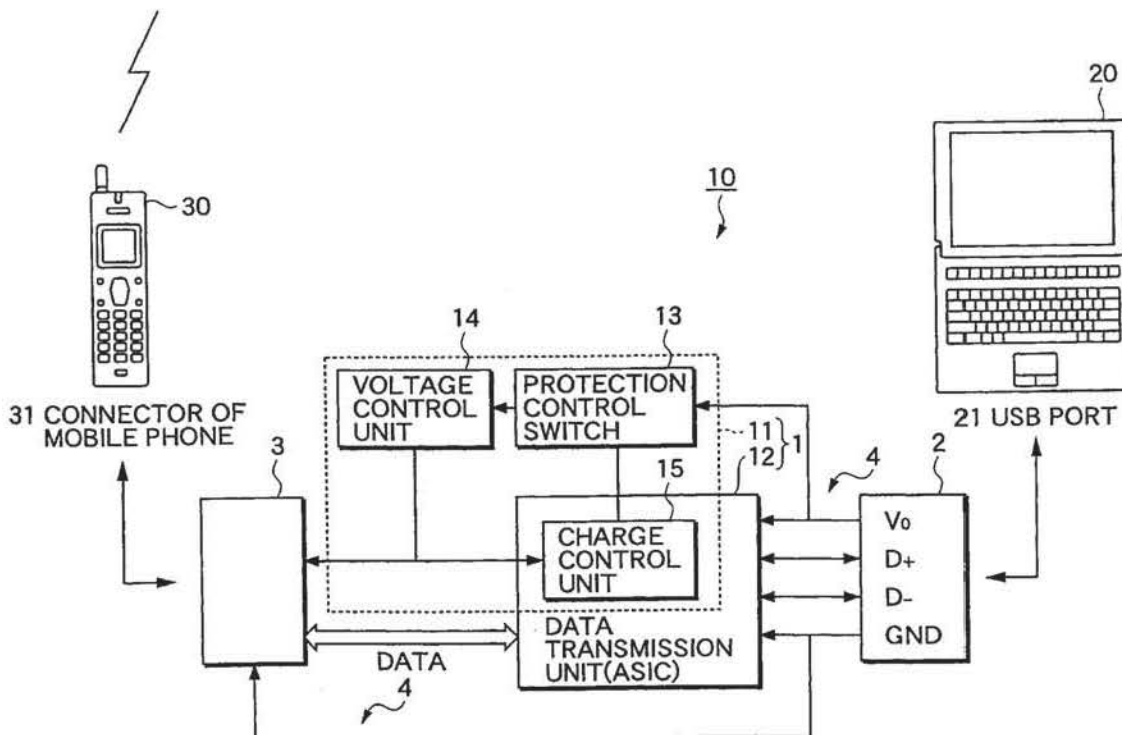


FIG. 1

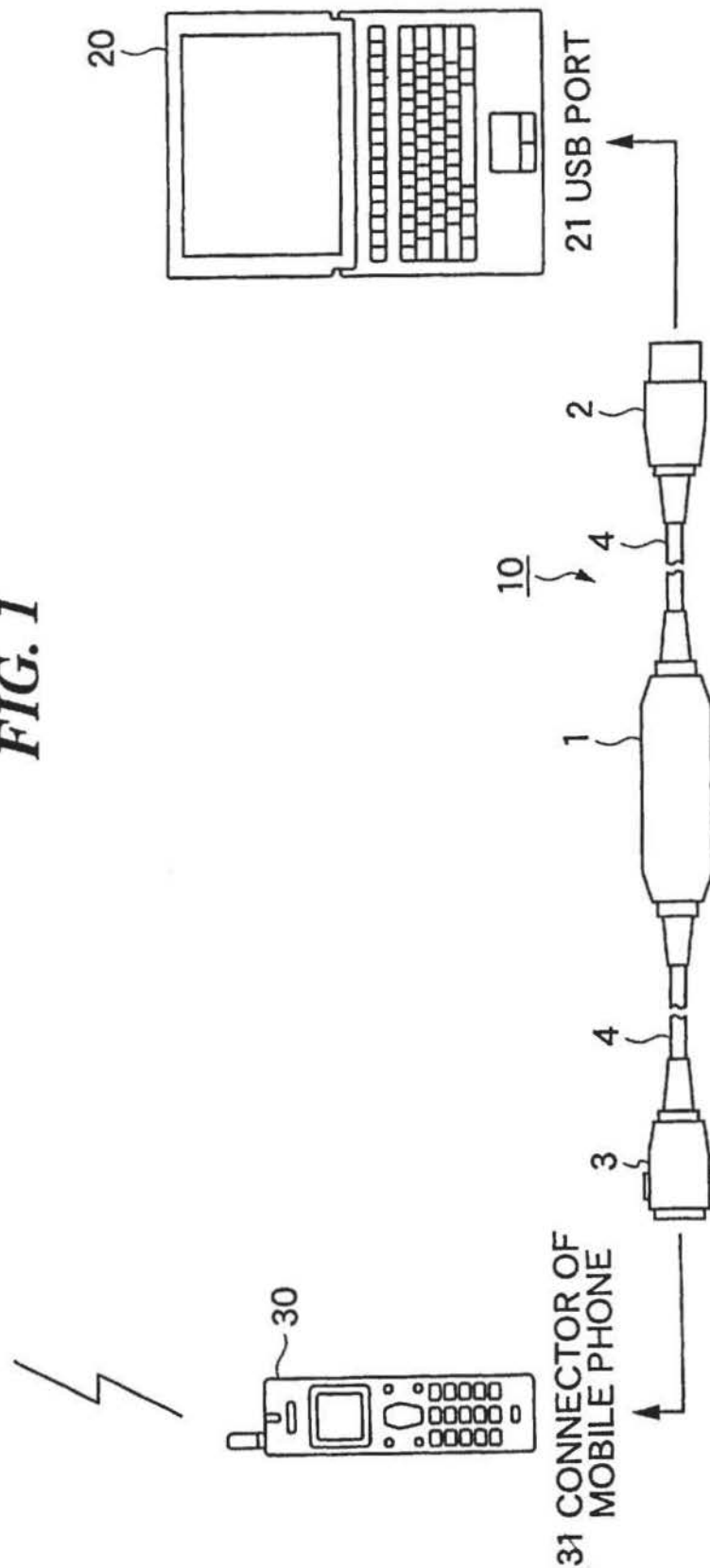


FIG. 2

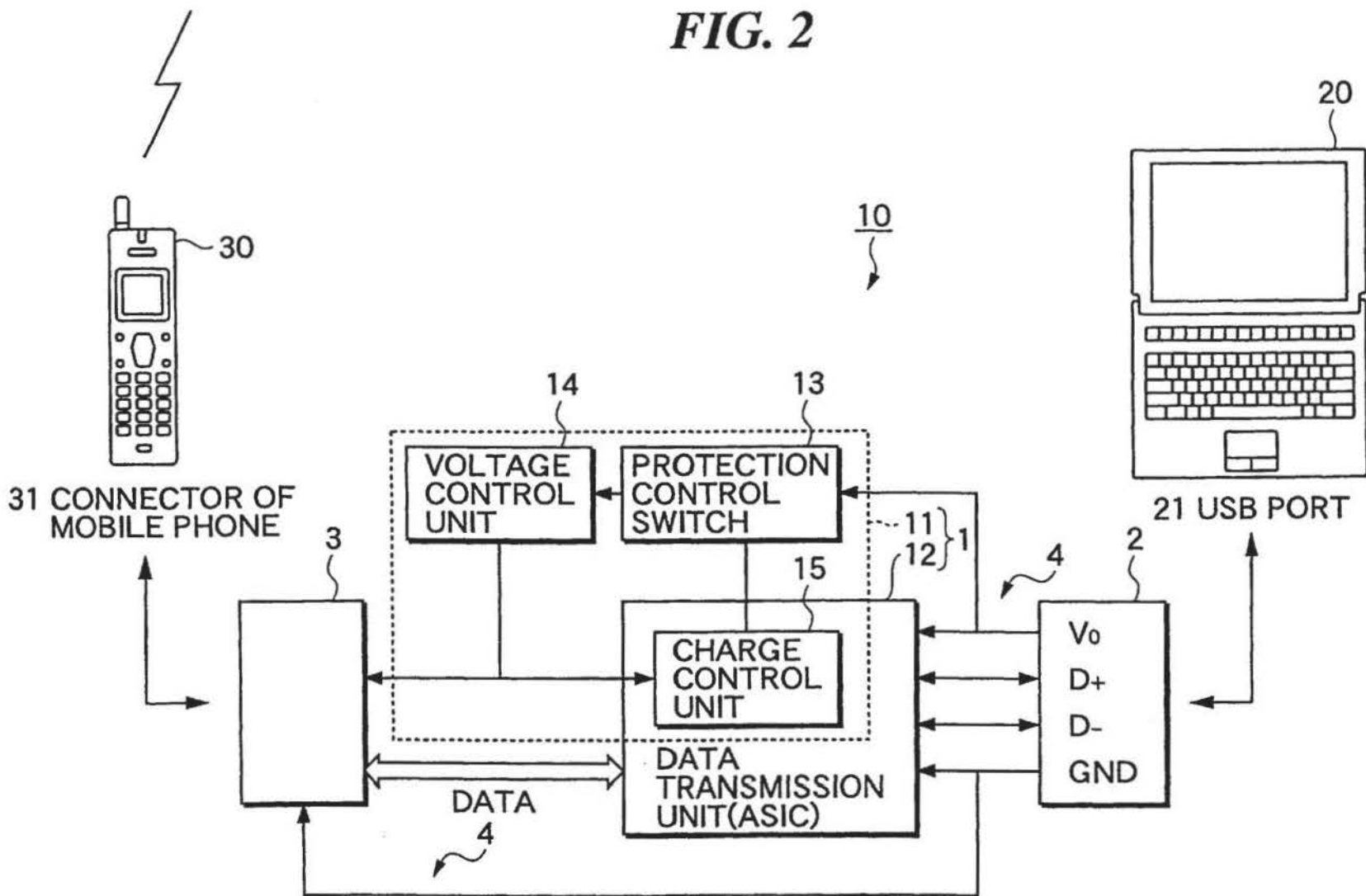


FIG. 3

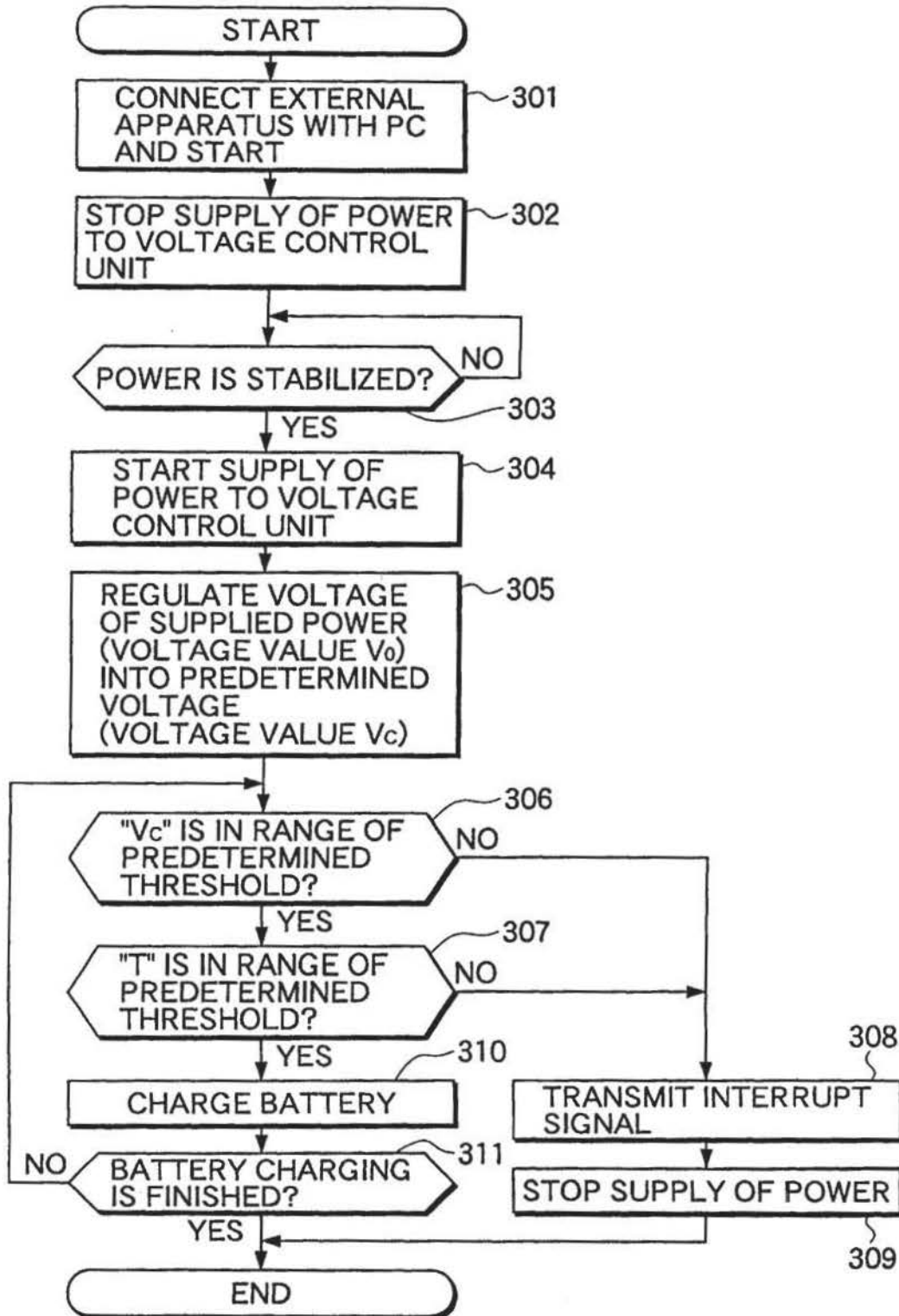
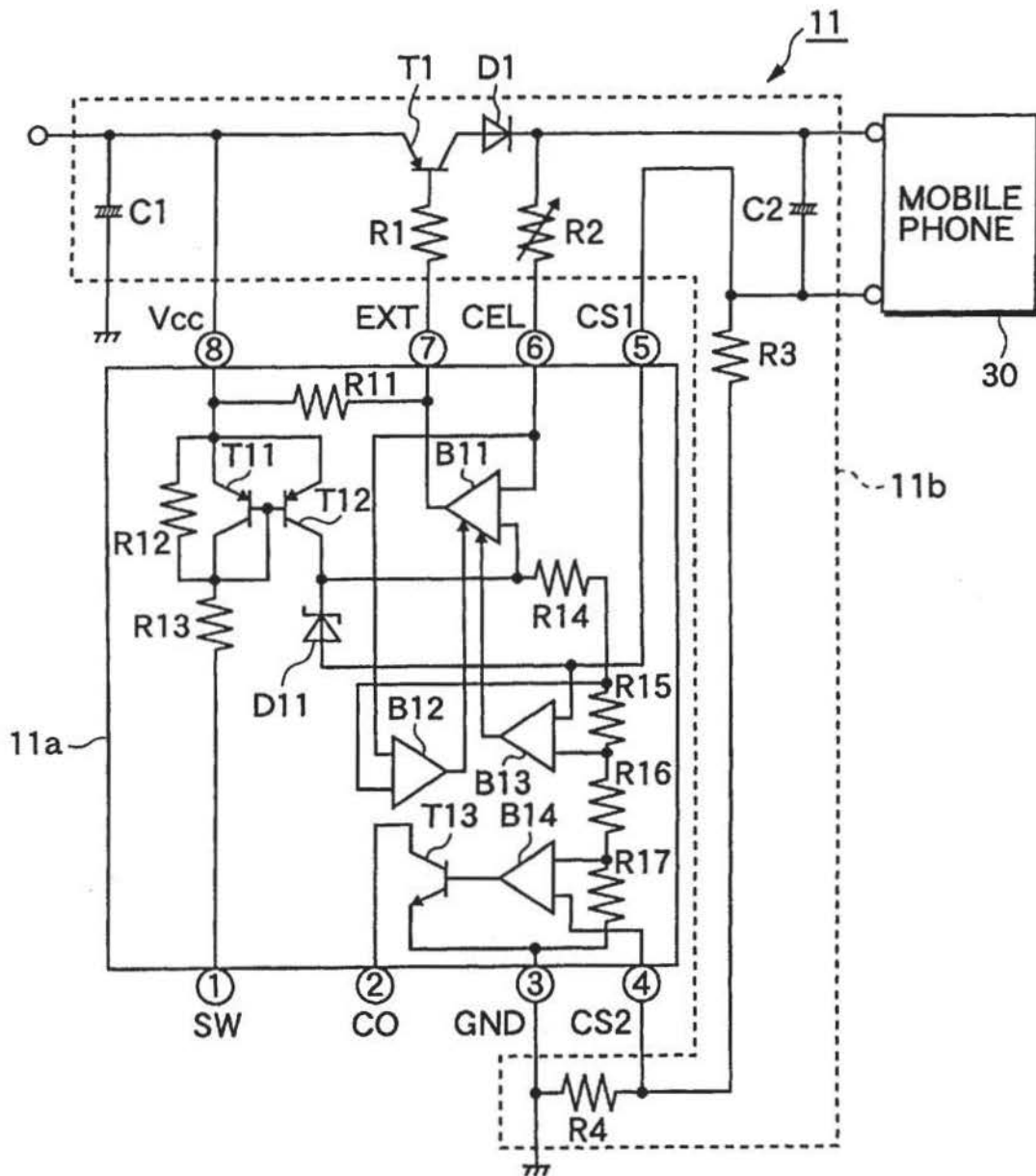


FIG. 4



# 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.