

(19) **United States**

(12) **Patent Application Publication**
Shier et al.

(10) **Pub. No.: US 2004/0186630 A1**

(43) **Pub. Date: Sep. 23, 2004**

(54) **AIR CYLINDER CONTROLLER**

Publication Classification

(75) **Inventors:** William W. Shier, Watertown, WI (US); Lee H. Theusch, Alto, WI (US); James D. Snavley, Fishers, IN (US)

(51) **Int. Cl.⁷** G05D 16/00
 (52) **U.S. Cl.** 700/301; 137/14

Correspondence Address:
Thomas E. Kocovsky, Jr.
FAY, SHARPE, FAGAN, MINNICH & McKEE, LLP
Seventh Floor
1100 Superior Avenue
Cleveland, OH 44114-2518 (US)

(57) **ABSTRACT**

An air flow regulator includes a damper (14) and an air cylinder (20) operatively connected with the damper (14) to adjust a damper setting. A pressure sensor (52) indicates a pneumatic pressure in the air cylinder (20). An air pressure regulator (42) is operatively connected with the air cylinder (20) to pressurize and exhaust the air cylinder (20) responsive to an electrical input (70). The air pressure regulator (42) includes a calibration table (64) associating steady state air cylinder pressure values with regulator shut-off pressure values. Responsive to the electrical input (70) updating a steady-state air cylinder pressure value, the air pressure regulator (42) pressurizes or exhausts the air cylinder (20) until the pressure sensor (52) indicates a pressure corresponding to a regulator shut-off pressure value associated in the calibration table (64) with the updated steady-state air cylinder pressure value, whereupon the air pressure regulator (42) ceases the pressurizing or exhausting.

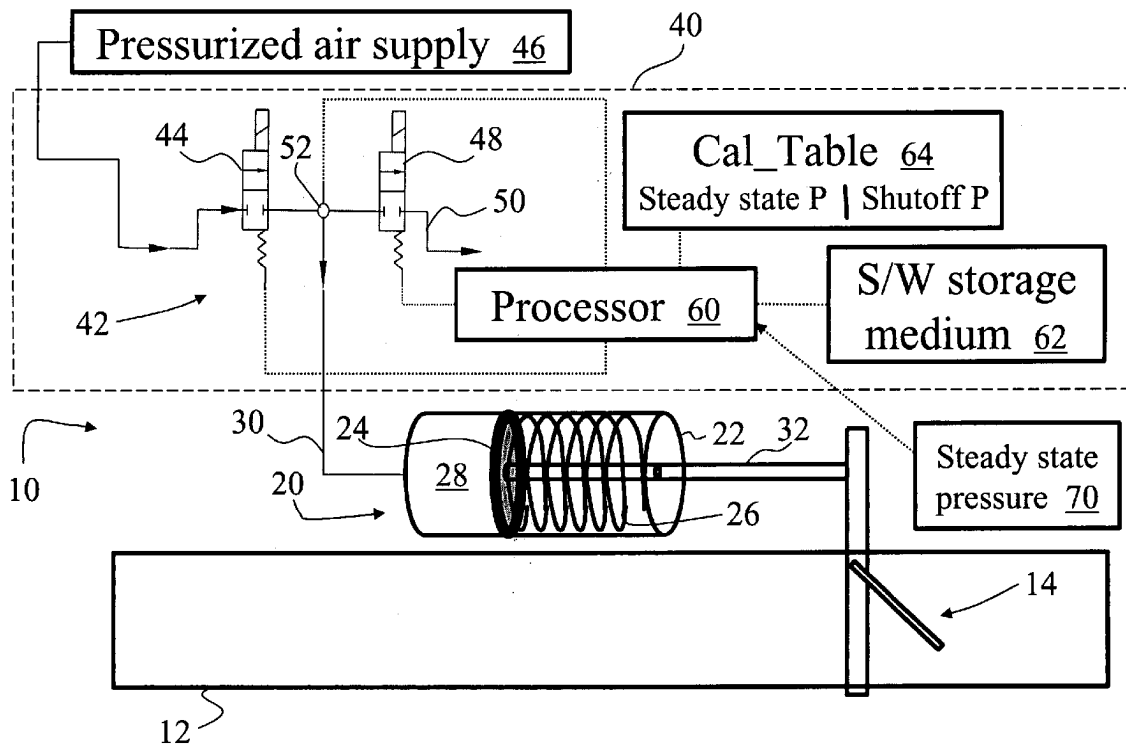
(73) **Assignee:** MARSH BELLOFRAM CORPORATION

(21) **Appl. No.:** 10/765,753

(22) **Filed:** Jan. 27, 2004

Related U.S. Application Data

(60) Provisional application No. 60/444,074, filed on Jan. 31, 2003.



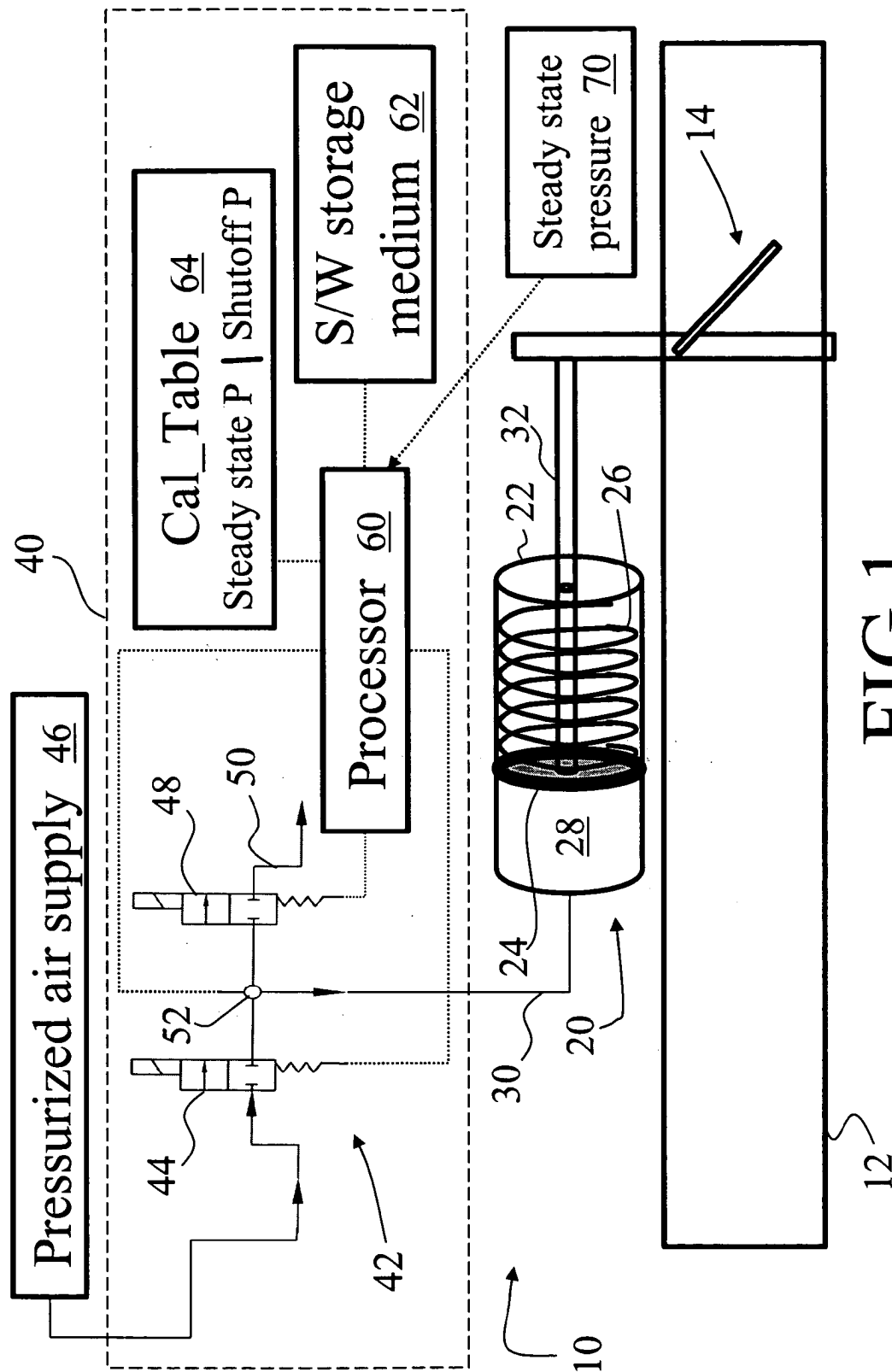


FIG 1

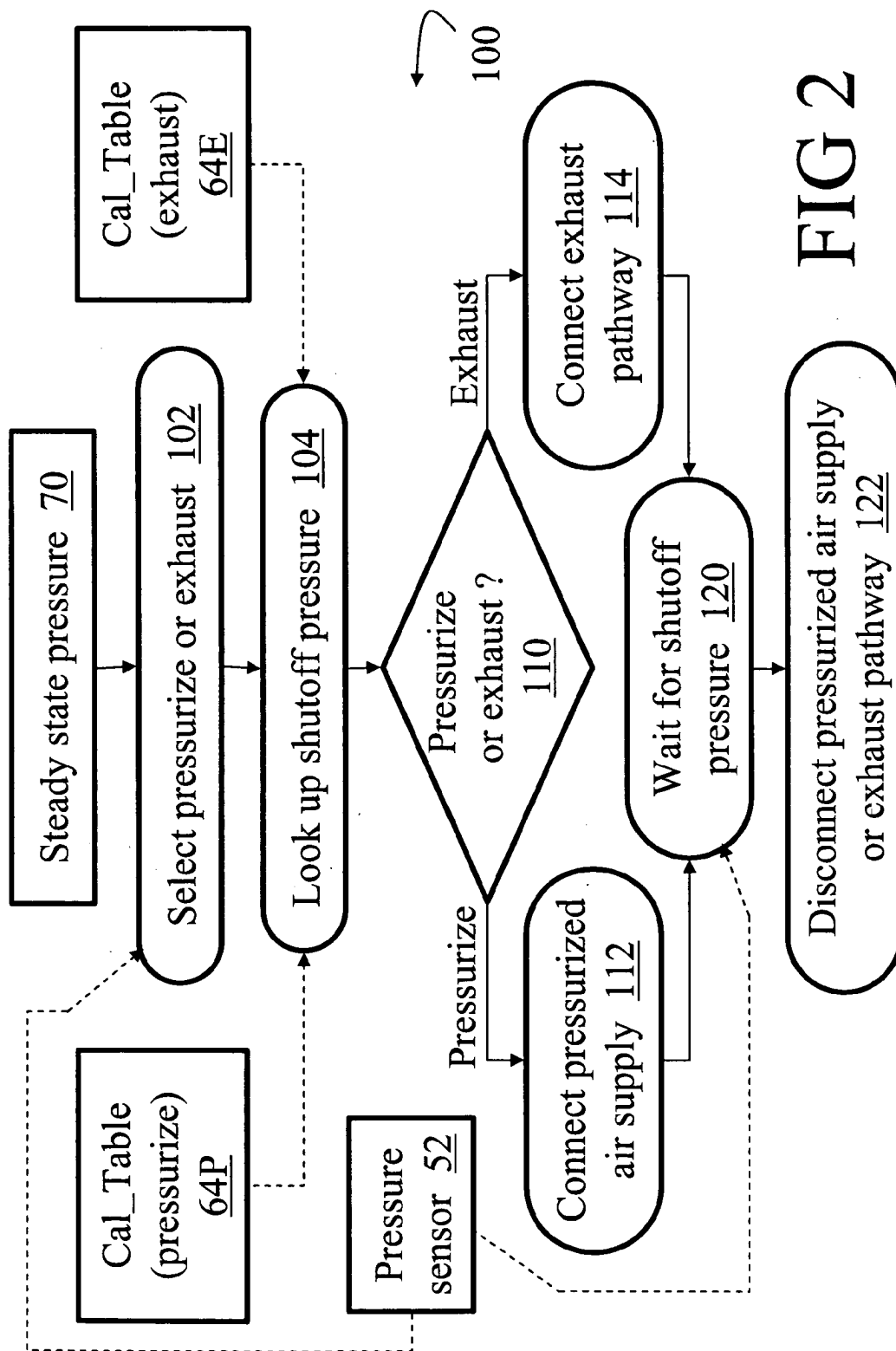


FIG 2

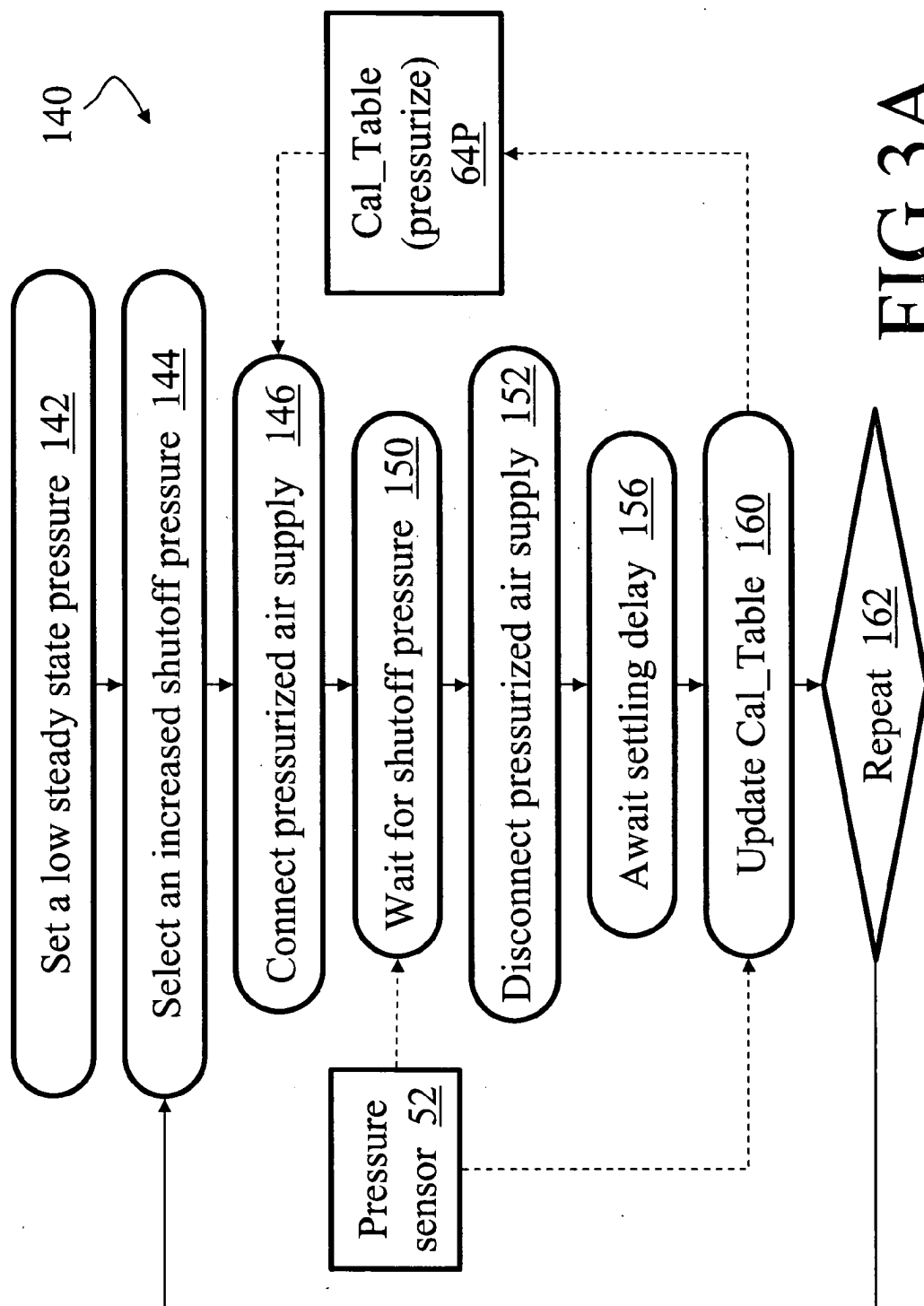


FIG 3A

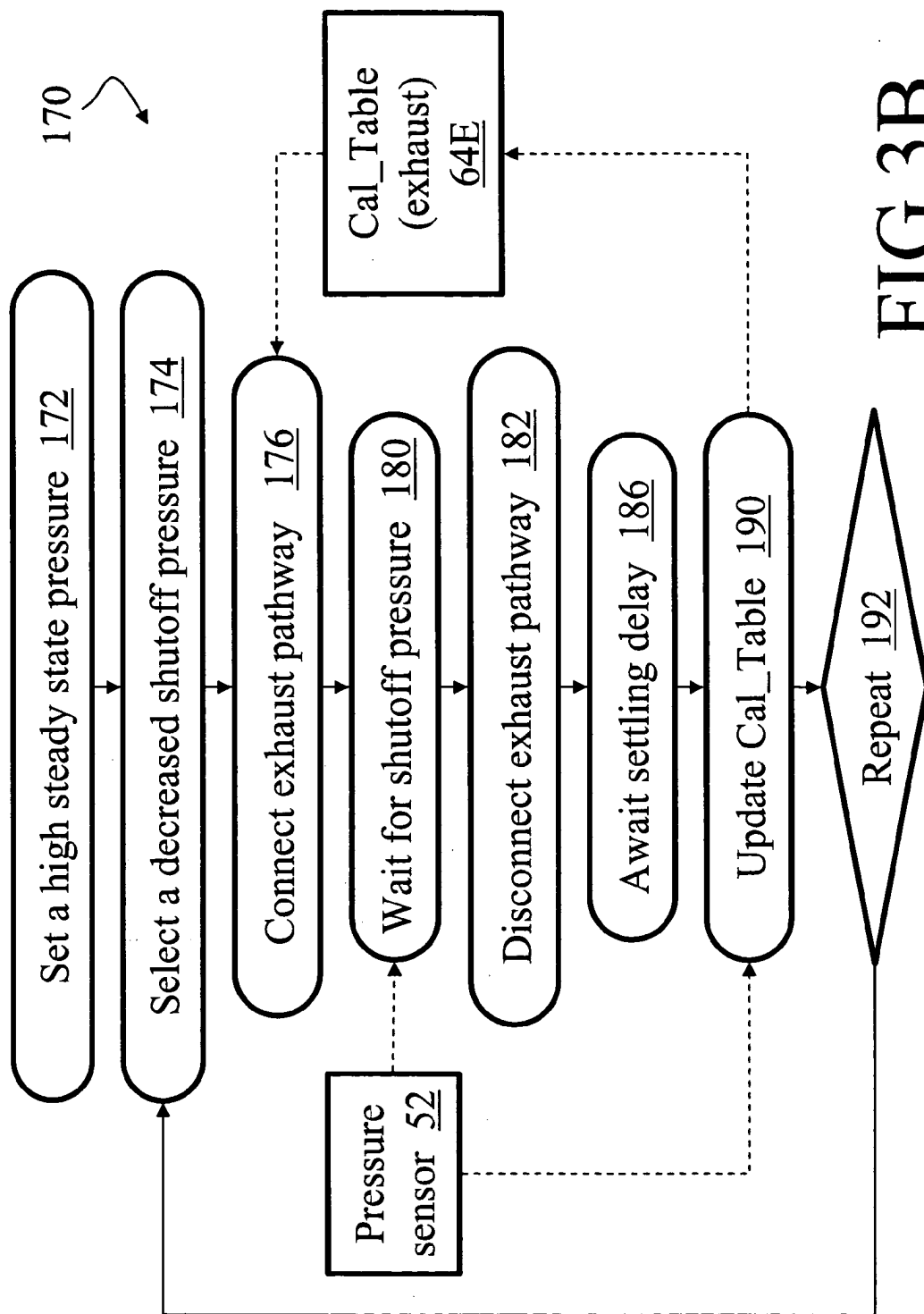


FIG 3B

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.