



[54] **SECURE ENTRY SYSTEM WITH RADIO COMMUNICATIONS**

[75] Inventors: **John M. Kniffin**, Portland; **Ron McCauley**, Salem; **Ralph H. Wells, III**, Monmouth; **John W. Sherman**, Corvallis; **Wayne F. Larson**, Salem, all of Oreg.

4,800,255	1/1989	Imran	235/382
4,831,374	5/1989	Masel	340/825.31
4,851,652	7/1989	Imran	235/382
4,864,115	9/1989	Imran	235/492
4,910,510	3/1990	Davis et al.	340/825.44
4,931,789	6/1990	Pinnow	
4,958,632	9/1990	Duggan	128/419 PG
4,962,449	10/1990	Schlesinger	364/200

(List continued on next page.)

[73] Assignee: **SLC Technologies, Inc.**, Salem, Oreg.

FOREIGN PATENT DOCUMENTS

[21] Appl. No.: **07/819,345**

[22] Filed: **Jan. 9, 1992**

[51] Int. Cl.⁷ **H04Q 1/00**

[52] U.S. Cl. **340/825.31; 340/825.44; 340/825.69; 379/103**

[58] Field of Search 340/825.31, 825.32, 340/825.33, 825.34, 825.3, 825.54, 825.69, 825.72, 825.44, 311.1; 455/38, 1, 344; 379/103, 102, 105; 235/382

307 485	3/1989	European Pat. Off.	
320 373	6/1989	European Pat. Off.	
393784	10/1990	European Pat. Off.	
2542792	3/1983	France	
2604808	10/1986	France	
3-262885	11/1991	Japan	
2144249	2/1985	United Kingdom	
90/13096	3/1990	WIPO	
WO 91/18169	5/1991	WIPO	
WO 91/20026	6/1991	WIPO	

OTHER PUBLICATIONS

Motorola Technical Developments, vol. 10, p. 36, Mar. 1990, Marino, Gail, "Pager and Garage Door Opener Combination," (Copy in 340/311.1).

Websters New World Dictionary, p. 1108, definition of radio frequency.

Primary Examiner—Brian Zimmerman
Attorney, Agent, or Firm—Klarquist Sparkman Campbell Leigh & Whinston, LLP

[56] **References Cited**

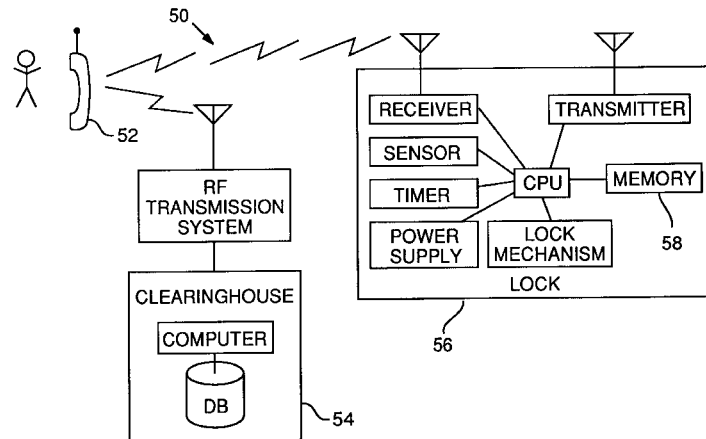
U.S. PATENT DOCUMENTS

3,337,992	8/1967	Tolson	340/533
3,812,403	5/1974	Gartner	317/134
4,157,534	6/1979	Schachter	340/147 MD
4,209,782	6/1980	Donath et al.	340/147 MD
4,218,690	8/1980	Ulch et al.	340/149 R
4,236,068	11/1980	Walton	235/380
4,275,385	6/1981	White	340/525
4,415,893	11/1983	Roland et al.	340/825.31
4,491,843	1/1985	Boubouleix	343/702
4,525,865	7/1985	Mears	455/186
4,531,237	7/1985	Bar-on et al.	455/343
4,543,955	10/1985	Schroepel	128/635
4,596,984	6/1986	Bongard et al.	
4,600,829	7/1986	Walton	235/439
4,609,780	9/1986	Clark	179/2 A
4,713,661	12/1987	Boone et al.	340/994
4,721,954	1/1988	Mauch	340/825.31
4,727,368	2/1988	Larson	340/825.31
4,727,369	2/1988	Rode	340/825.31
4,760,393	7/1988	Mauch	340/825.31
4,766,746	8/1988	Henderson	70/63
4,777,556	10/1988	Imran	361/155

[57] **ABSTRACT**

A secure entry system makes use of radio transmissions to communicate with locks, keys, and related components throughout the system. The radio transmissions can be made using a paging system, a cellular telephone system, or any other RF carrier. Some embodiments employ a cellular telephone in lieu of an electronic key. Others integrate a paging receiver within an electronic key to provide a unit with dual functionality. The system is illustrated with reference to exemplary applications in the industrial site security, real estate lockbox, and transportation fields.

31 Claims, 4 Drawing Sheets



U.S. PATENT DOCUMENTS

4,962,522	10/1990	Marian	379/105	5,124,696	6/1992	Bosley .
5,014,049	5/1991	Bosley	340/825.31	5,252,965	10/1993	Gidwani et al. .
5,016,273	5/1991	Hoff	380/10	5,478,995	12/1995	Wallerstorfer et al. .
5,020,135	5/1991	Kasparian et al.	455/76	5,619,191	4/1997	Lambropoulos et al. .
5,113,427	5/1992	Ryoichi et al.	340/825.44	5,650,774	7/1997	Drori .
				5,717,387	2/1998	Suman et al. .

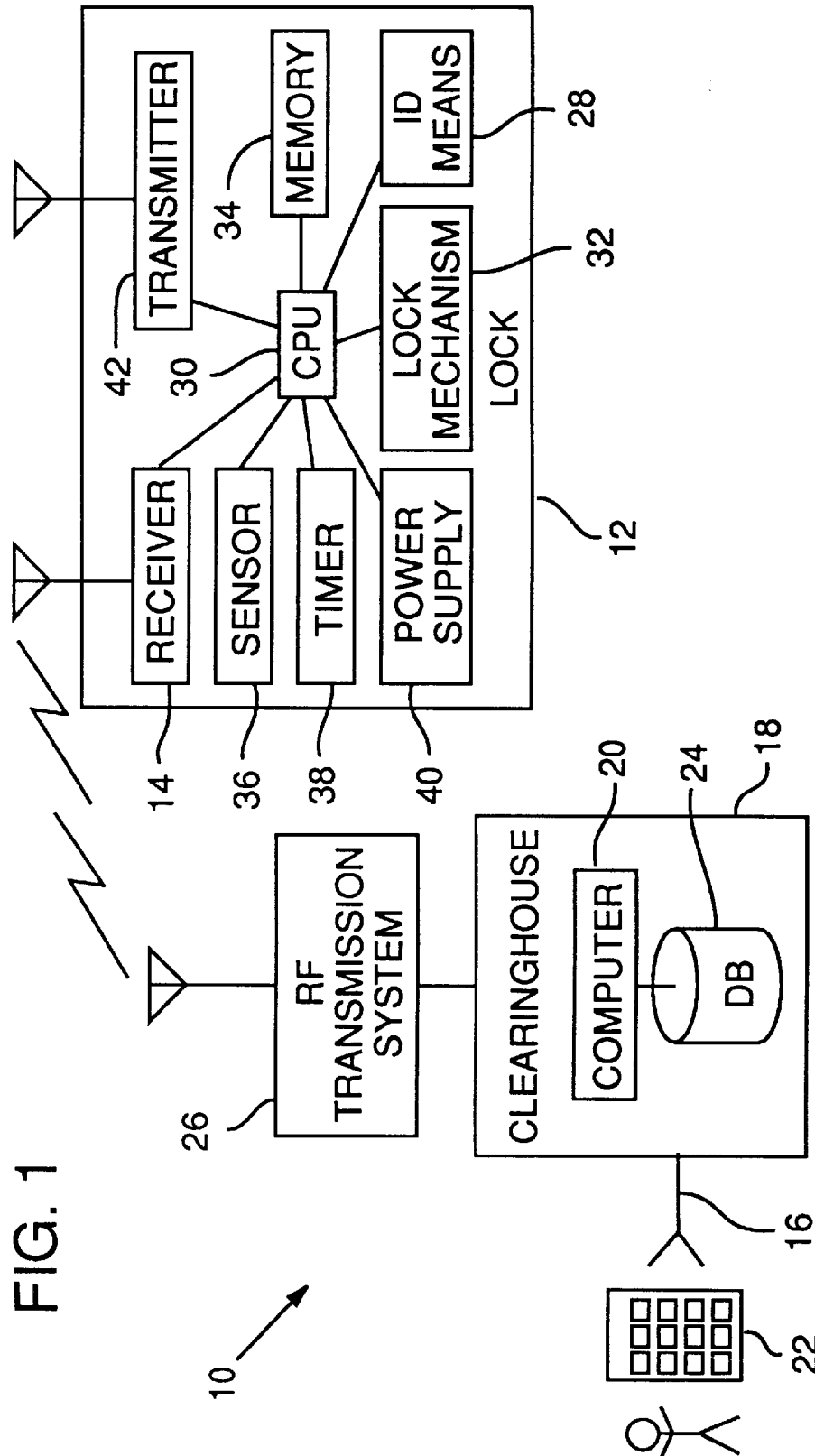


FIG. 1

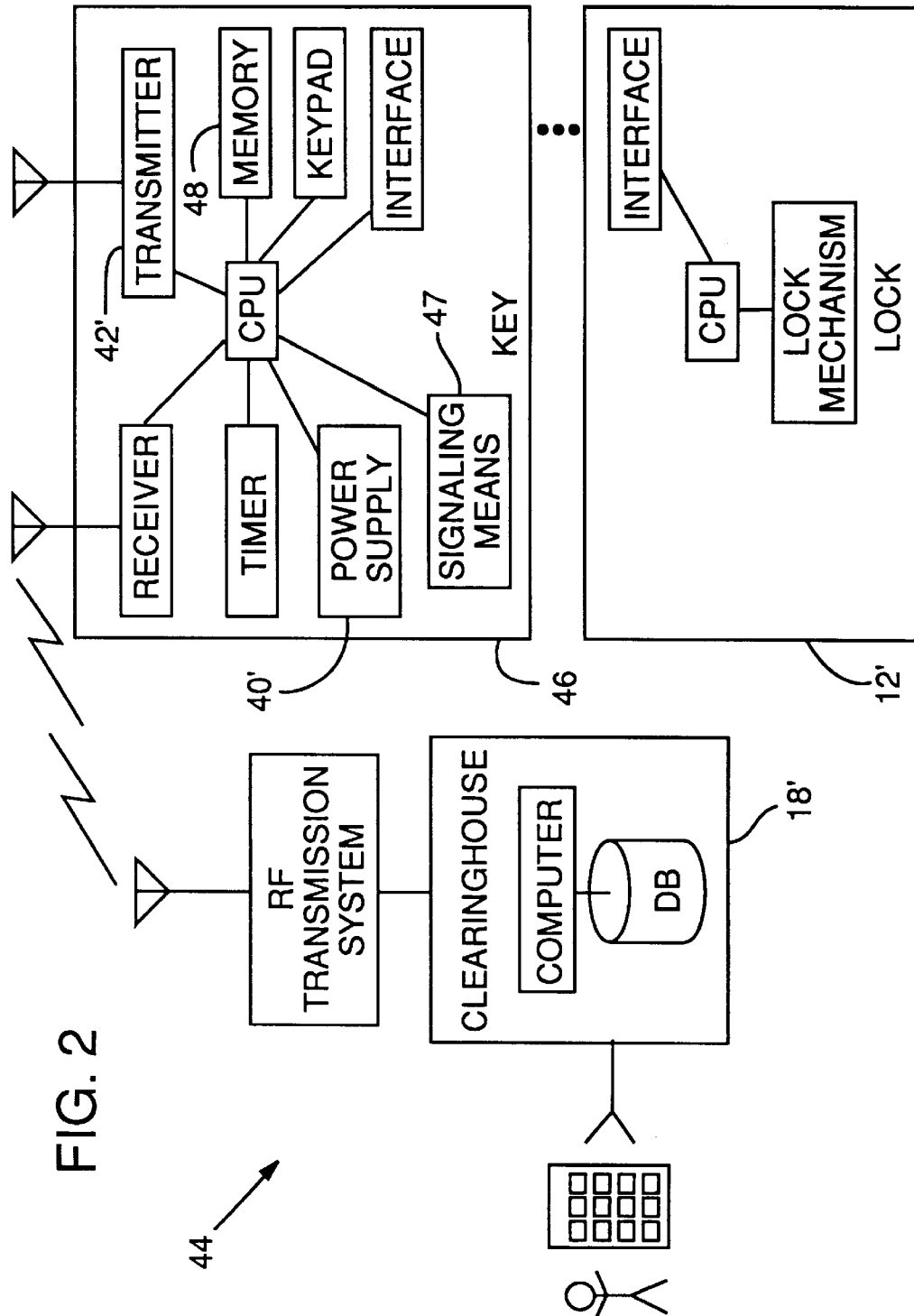
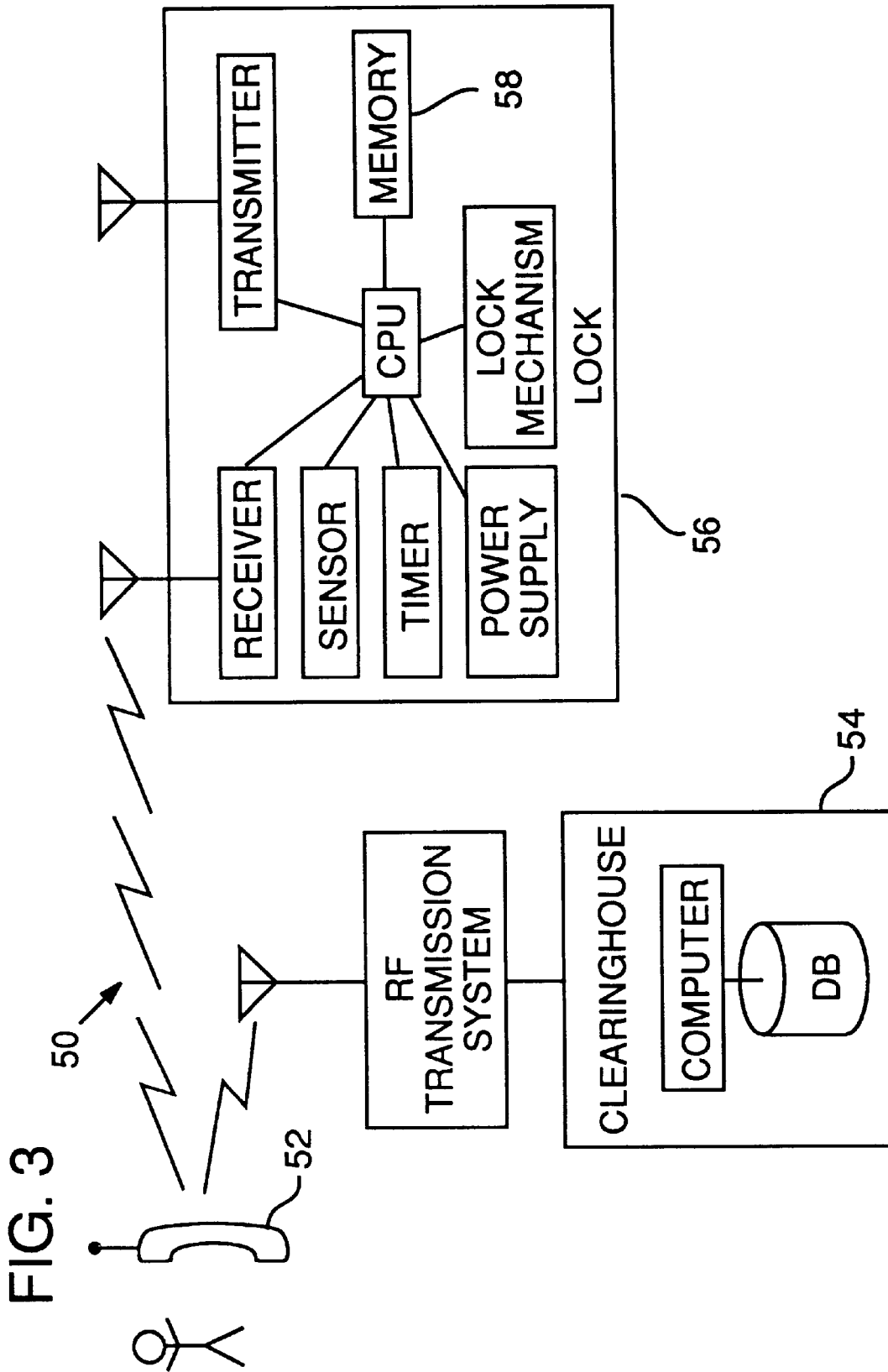


FIG. 2



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.