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(12) **United States Patent**  
**Bork**

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(54) **BLUETOOTH ENABLED MOBILE DEVICE CHARGING CRADLE AND SYSTEM**

(75) Inventor: **Stephan Bork**, Richardson, TX (US)

(73) Assignee: **Texas Instruments Incorporated**, Dallas, TX (US)

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

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(52) U.S. Cl. .... **320/115**; 455/463

(58) Field of Search ..... 320/115; 455/463, 455/557, 466, 404

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*Primary Examiner*—Peter S. Wong

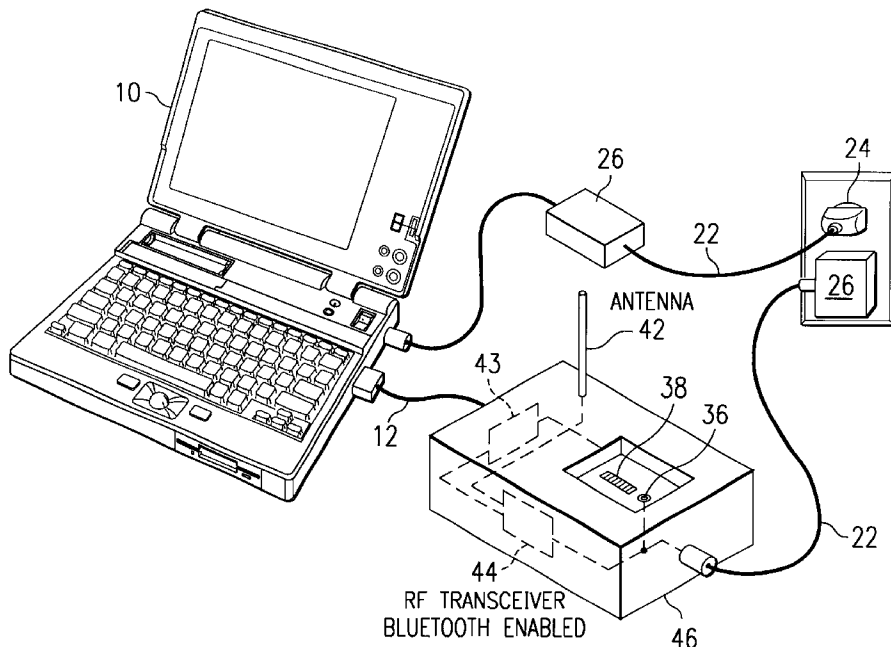
*Assistant Examiner*—Pia Tibbits

(74) *Attorney, Agent, or Firm*—Ronald O. Neerings; Wade James Brady, III; Frederick J. Telecky, Jr.

(57) **ABSTRACT**

A mobile device charging cradle (46) to enable short distance wireless communication between a personal computer (10) and at least one other short distance wireless communication enabled electronic device (50). In a preferred embodiment of the invention, a short distance wireless radio (transceiver—Bluetooth enabled) (44) and antenna (42) are added to a charging cradle to produce a combination charging and short distance wireless communication enabled cradle (46) which is coupled via a data cable (12) to a personal computer (10). The short distance wireless (in this case RF) communication enabled cradle enables a system in which a legacy architecture personal computer may communicate with other short distance RF communication enabled electronic devices. Such communication is enabled whether or not another RF communication enabled portable electronic device is coupled to the cradle. In another embodiment of the invention, a universal serial bus USB in a computer is used as a power source for the previously described cradle. In one embodiment, a data/power cable (78) couples a computer (70) having an external USB connector (72) to the short distance wireless communication enabled cradle (74). The cable includes electronic circuitry (82) for converting the voltage level supplied by the USB to a voltage level usable by the cradle—including its Bluetooth radio (44) and any peripheral electronic device that may be coupled to the cradle (52,54).

**30 Claims, 13 Drawing Sheets**



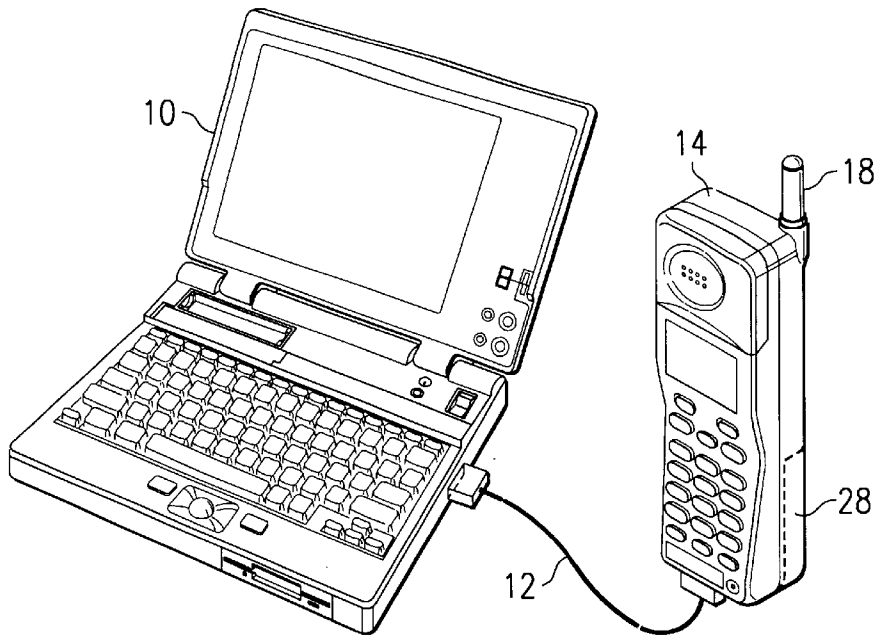


FIG. 1  
(PRIOR ART)

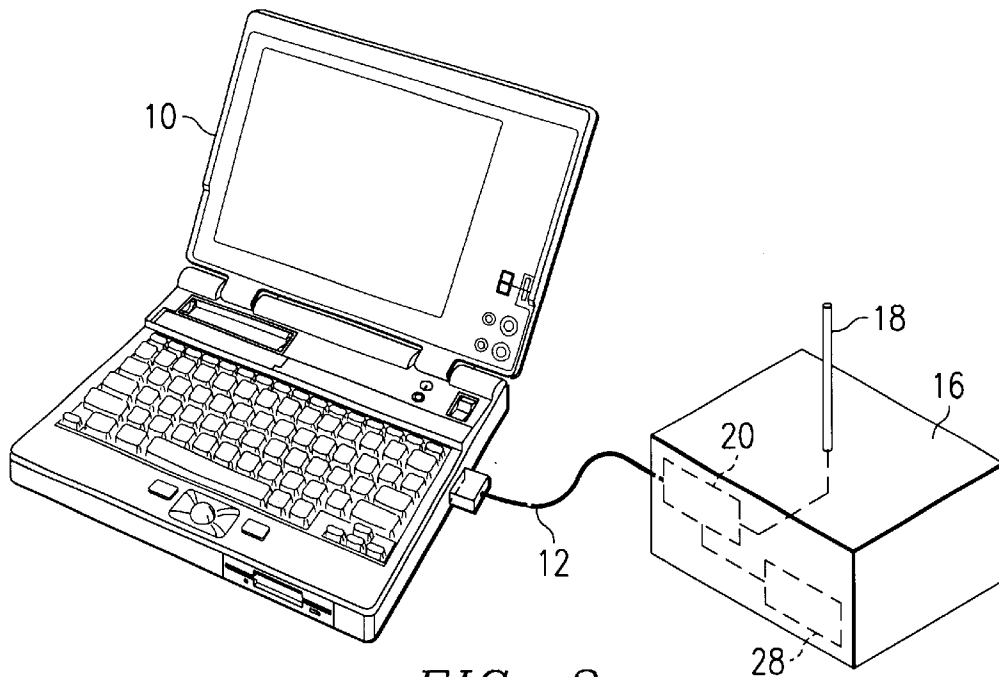


FIG. 2  
(PRIOR ART)

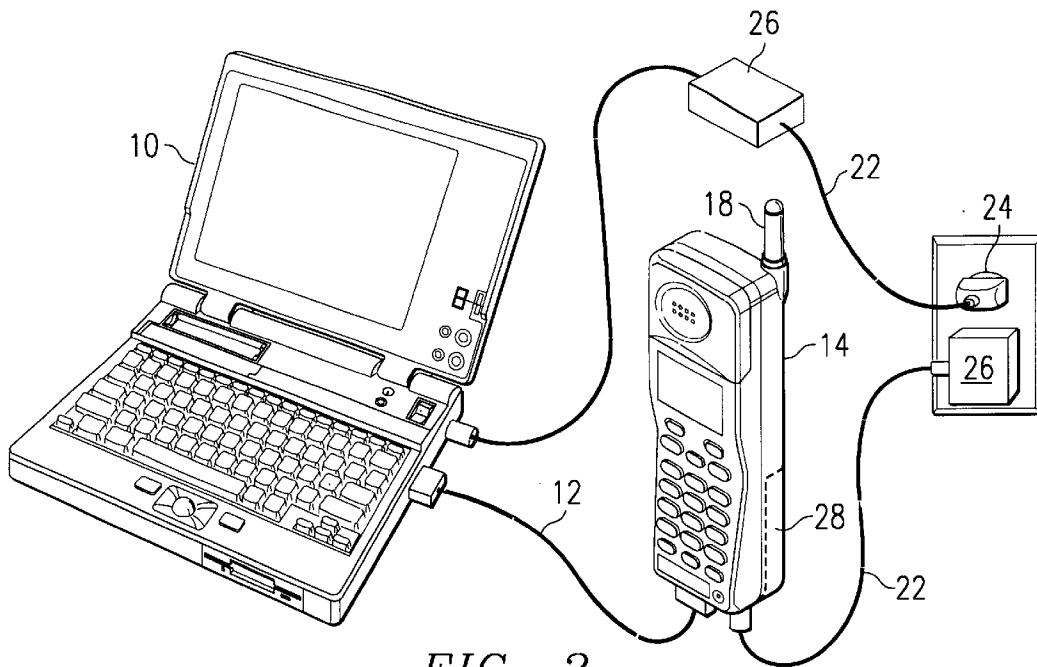


FIG. 3  
(PRIOR ART)

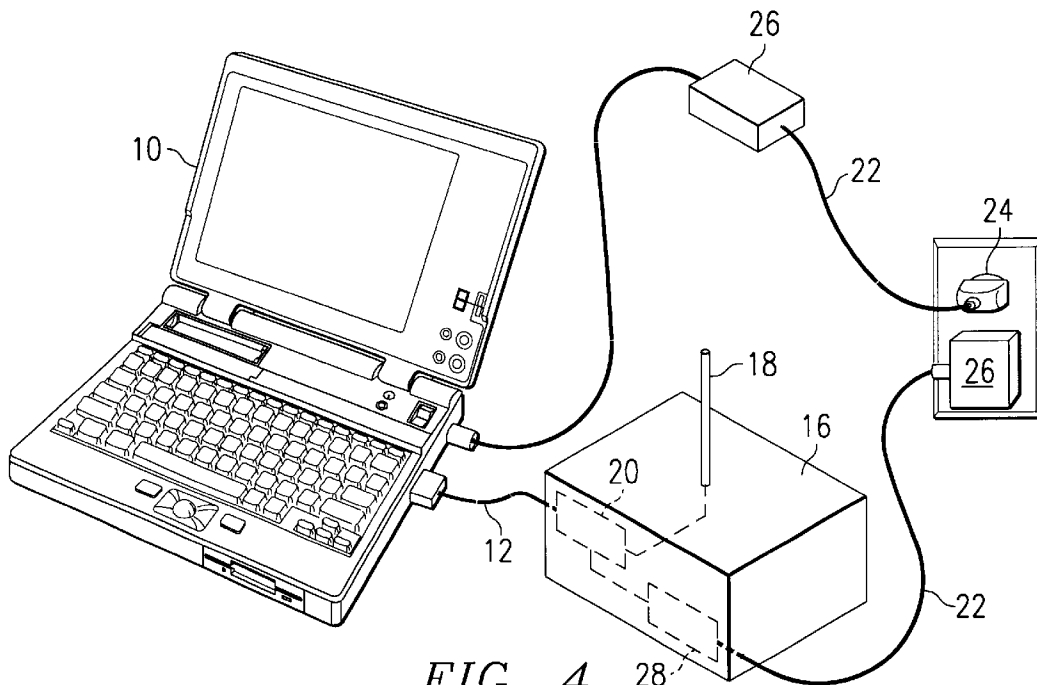


FIG. 4  
(PRIOR ART)

FIG. 5  
(PRIOR ART)

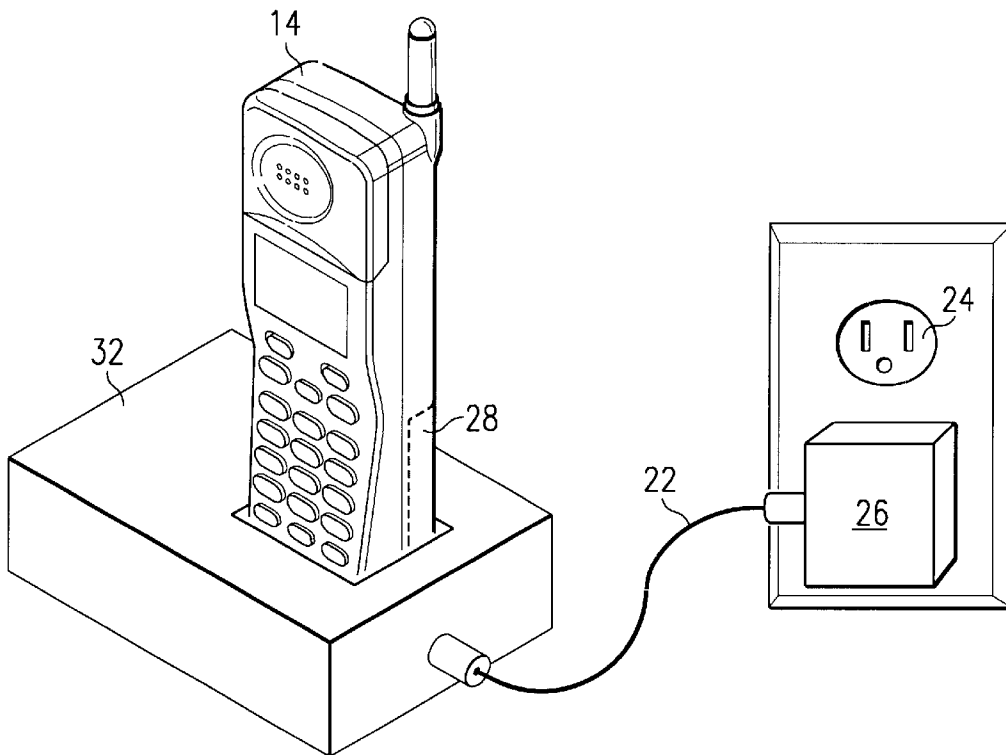
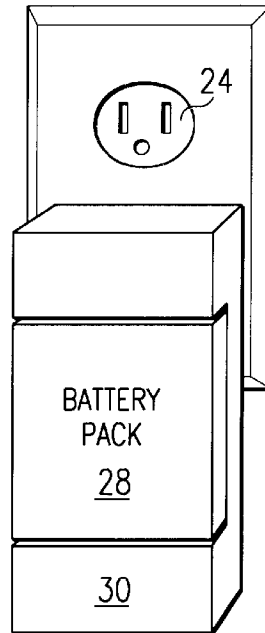
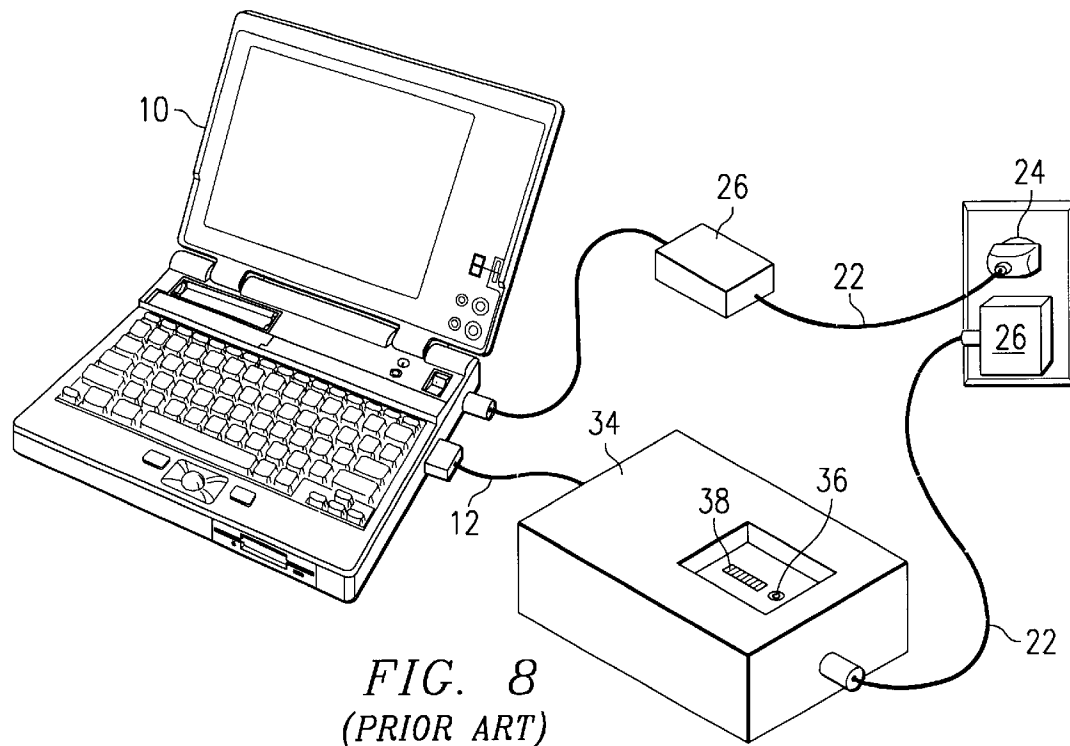
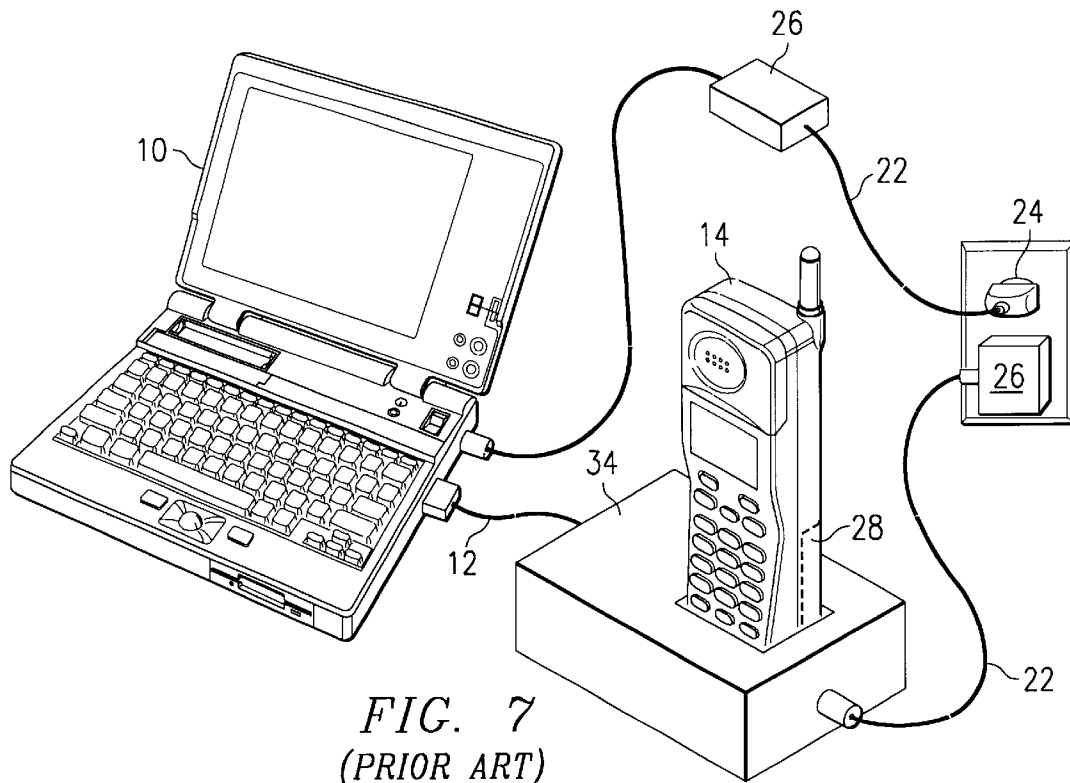


FIG. 6  
(PRIOR ART)



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