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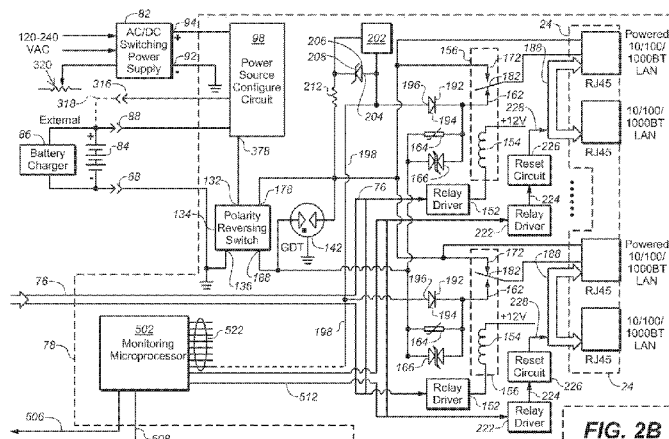
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— of inventorship (Rule 4.17(iv))

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- with international search report (Art. 21(3))
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))

[Continued on next page]

(54) **Title:** POWER OVER ETHERNET INJECTOR**FIG. 2B**

(57) **Abstract:** A midspan power over Ethernet ("PoE") injector (20) connects via LAM cables (514) to remote PDs (518). Each cable (514) has a remote end; and a midspan end (516). The cables (514) includes receiving and transmitting conductors, and insulated electrical conductors. The injector (20) includes pairs of sockets (24) a first socket (24) of each pair is a powered socket, and a second socket (24) is unpowered and carries only data. A data-signal bus (188) interconnects the unpowered and powered sockets. Power switches (156), equal in number to the socket pairs, connect respectively to one of the powered sockets (24). Without negotiating with a PD (518) connected by the cable (514) to the powered socket (24), a controller (34) causes switches (156) to close thereby transmitting electrical power via the powered socket (24) connected thereto and the cable (514) mated therewith to the PD (518). The controller (34) also concurrently monitors operational status: a. of each connected PD (518); and b. internal conditions within the injector (20).



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INTERNATIONAL SEARCH REPORT

International application No.

PCT/US 14/36457

A. CLASSIFICATION OF SUBJECT MATTER

IPC(8) - G06F 11/28 (2014.01)

CPC - H04L 12/10

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC(8) - G06F 11/28 (2014.01)

CPC - H04L 12/10

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
USPC: 370/252, 370/395.52, 709/223; IPC(8): G06F11/28, H04L12/28; CPC: H04L 12/10

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

Electronic Database Searched: PatBase; Google Scholar/Patents

Search Terms Used: mid-span, midspan, power-over-Ethernet, POE, injector, cable pairs, ports, sockets, transmit, receive, data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 2009/0083550 A1 (Diab) 26 March 2009 (26.03.2009), entire document, especially FIG. 4, para. [0019], [0020], [0025], [0027], [0030]	1-23
A	US 2012/0242168 A1 (Tsai et al.) 27 September 2012 (27.09.2012), entire document, especially FIG. 6, para. [0050], [0054]-[0057], [0060]	1-23
A	US 2010/0005320 A1 (Squillante) 07 January 2010 (07.01.2010), entire document	1-23
X, P	US 2013/0339760 A1 (Zimmerman et al.) 19 December 2013 (19.12.2013), entire document, especially abstract, FIG. 1-2, para. [0015]-[0019], [0055]	1, 2, 9, 18, 22

☐ Further documents are listed in the continuation of Box C.

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"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

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