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Binder

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(54) **TELEPHONE COMMUNICATION SYSTEM AND METHOD OVER LOCAL AREA NETWORK WIRING**

(75) Inventor: **Yehuda Binder**, Hod Hasharon (IL)

(73) Assignee: **Serconet Ltd.**, Ra'anana (IL)

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(58) **Field of Search** 307/17, 42; 340/310, 340/310.1; 370/200, 258, 296, 352, 353, 370/445, 452, 490, 493; 375/343; 379/156, 379/158, 166, 334, 350, 355.03; 361/119; 439/490, 950

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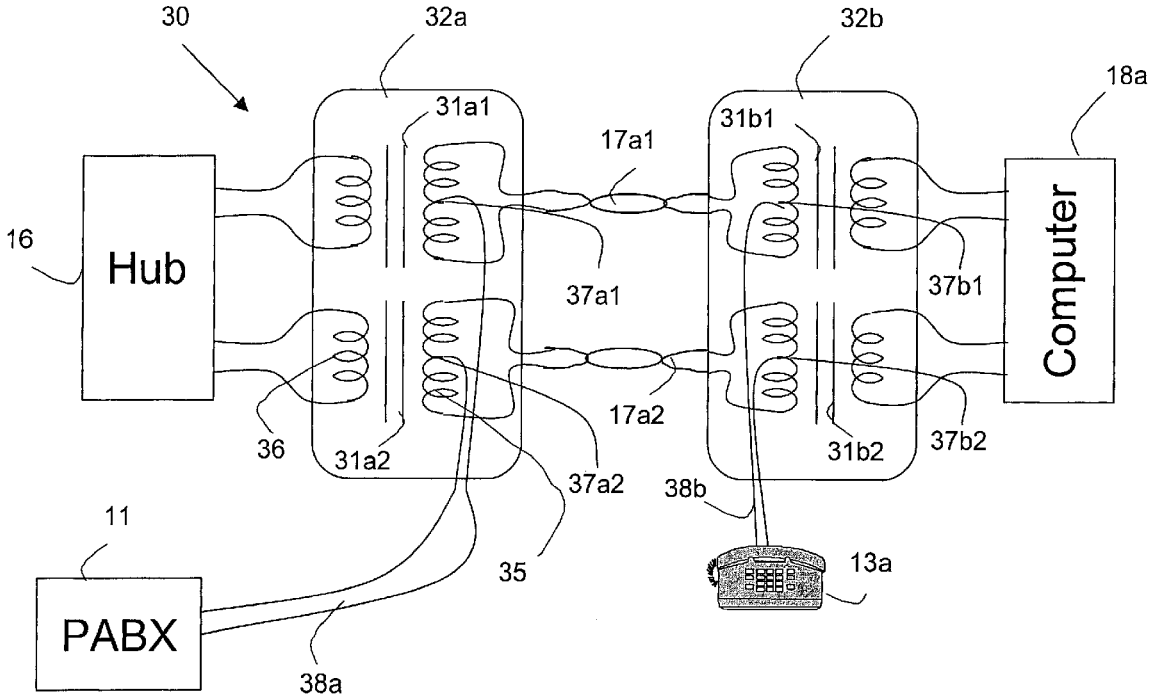
Primary Examiner—Wellington Chin
Assistant Examiner—John Shew
(74) *Attorney, Agent, or Firm*—Browdy and Neimark, PLLC

(57) **ABSTRACT**

A method and apparatus for enabling a local area network wiring structure to simultaneously carry digital data and analog telephone signals on the same transmission medium. It is particularly applicable to a network in star topology, in which remote data units (e.g. personal computers) are each connected to a hub through a cable comprising at least two pairs of conductors, providing a data communication path in each direction. Modules at each end of the cable provide a phantom path for telephony (voice band) signals between a telephone near the data set and a PBX, through both conductor pairs in a phantom circuit arrangement. All such communication paths function simultaneously and without mutual interference. The modules comprise simple and inexpensive passive circuit components.

27 Claims, 9 Drawing Sheets