



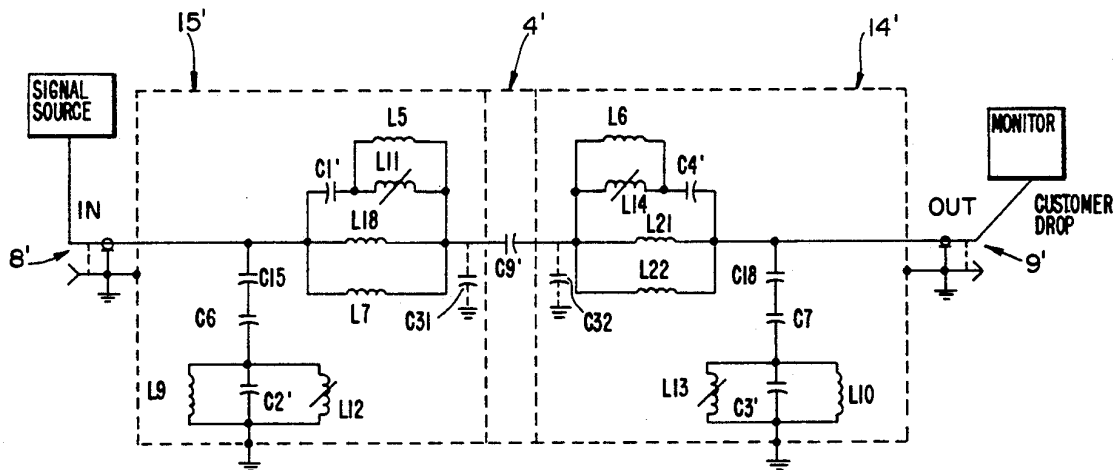
US005148133A

United States Patent [19]**Zennamo, Jr. et al.**[11] **Patent Number:** **5,148,133**[45] **Date of Patent:** **Sep. 15, 1992**[54] **QUALITY FACTOR IMPROVEMENT FOR FILTER APPLICATIONS**[75] **Inventors:** **Joseph A. Zennamo, Jr.**, Skaneateles;
Gary J. Clark, Constantia, both of
N.Y.[73] **Assignee:** **Eagle Comtronics, Inc.**, Clay, N.Y.[21] **Appl. No.:** **707,070**[22] **Filed:** **May 29, 1991**[51] **Int. Cl.⁵** **H03H 7/00**[52] **U.S. Cl.** **333/175; 333/167;**
333/185; 333/12[58] **Field of Search** **333/175, 167, 168, 185,**
333/12, 176, 24 R, 24 C, 177, 178, 179, 180,
181, 182, 183, 184[56] **References Cited****U.S. PATENT DOCUMENTS**

4,451,803 5/1984 Holdsworth et al. 333/167 X

Primary Examiner—Eugene R. LaRoche*Assistant Examiner*—Ali Neyzari*Attorney, Agent, or Firm*—Parkhurst, Wendel & Rossi[57] **ABSTRACT**

A tuned filter having an improved Q is disclosed in which two or more inductors are placed in parallel to increase the net Q relative to a single inductor of the same net inductance and/or two or more capacitors are placed in series to increase the net Q relative to a single capacitor of the same net capacitance to improve the Q of a tuned filter.

11 Claims, 9 Drawing Sheets

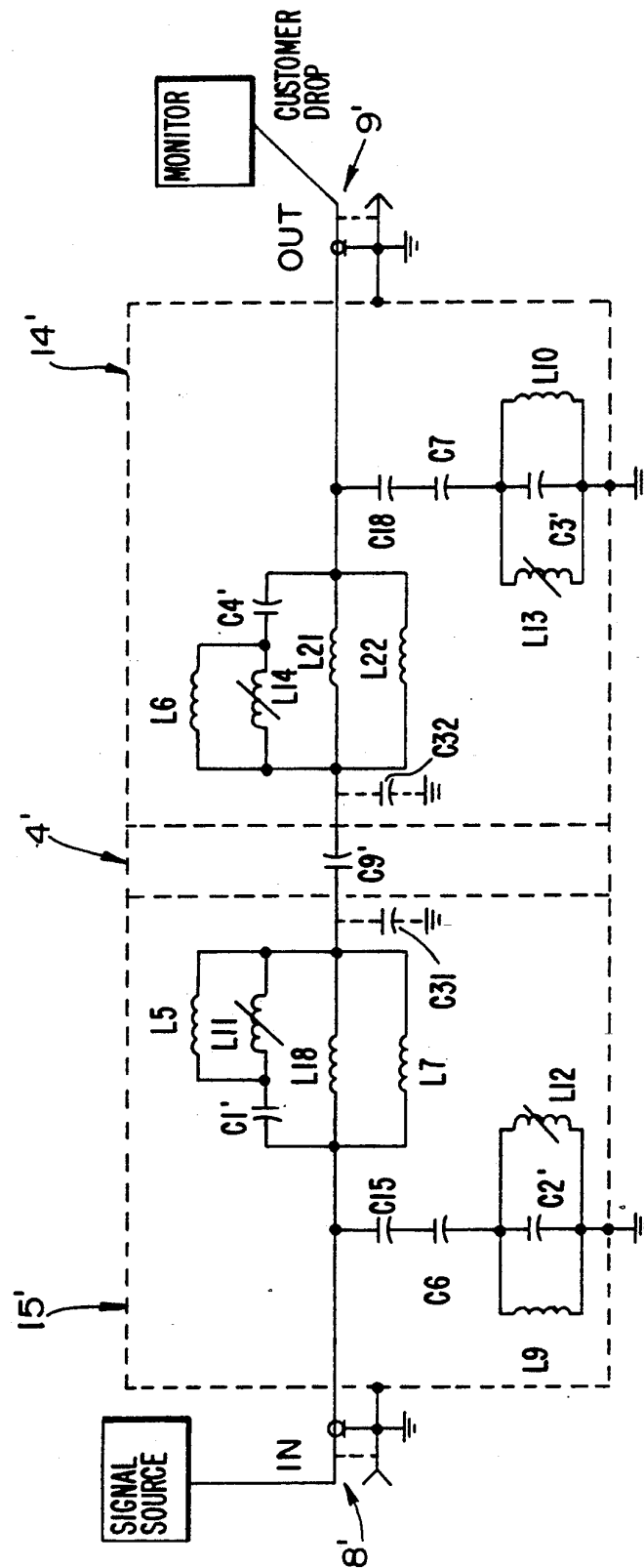


FIG- 1A

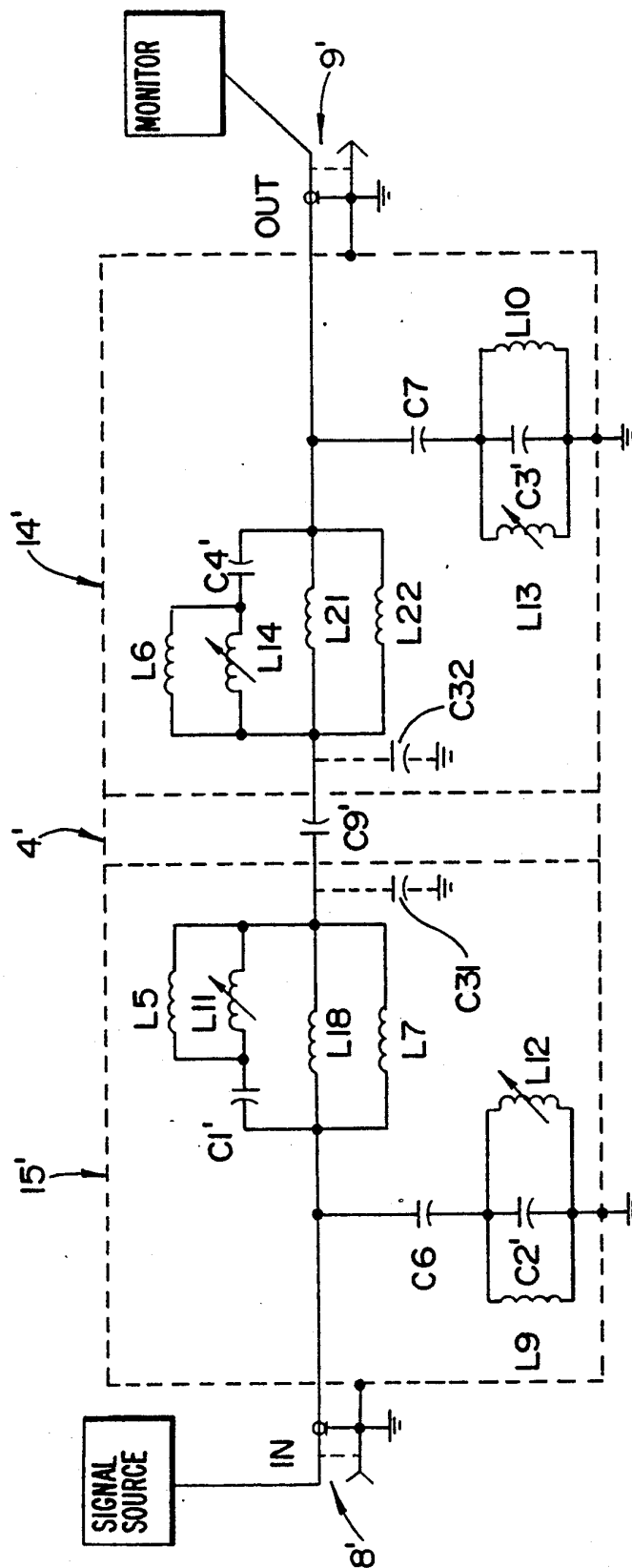


FIG - 1B

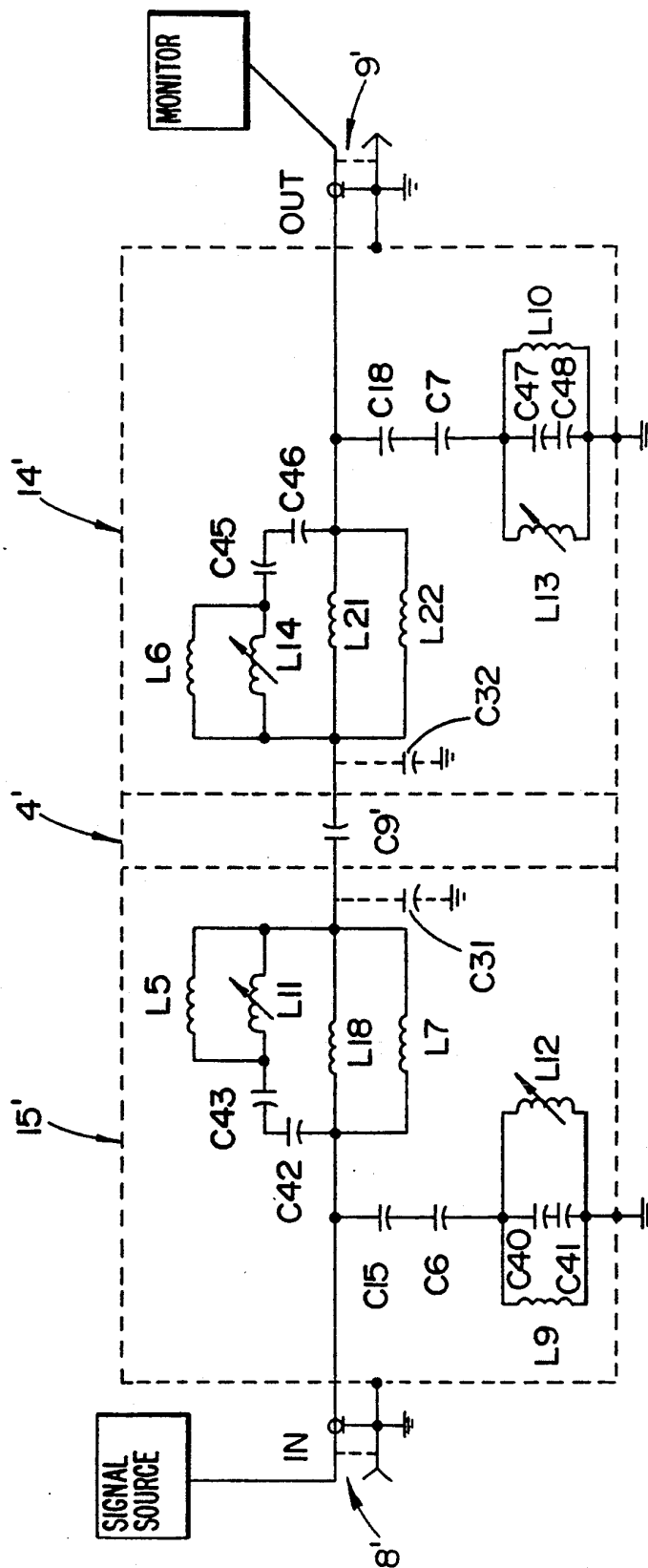


FIG - 1C

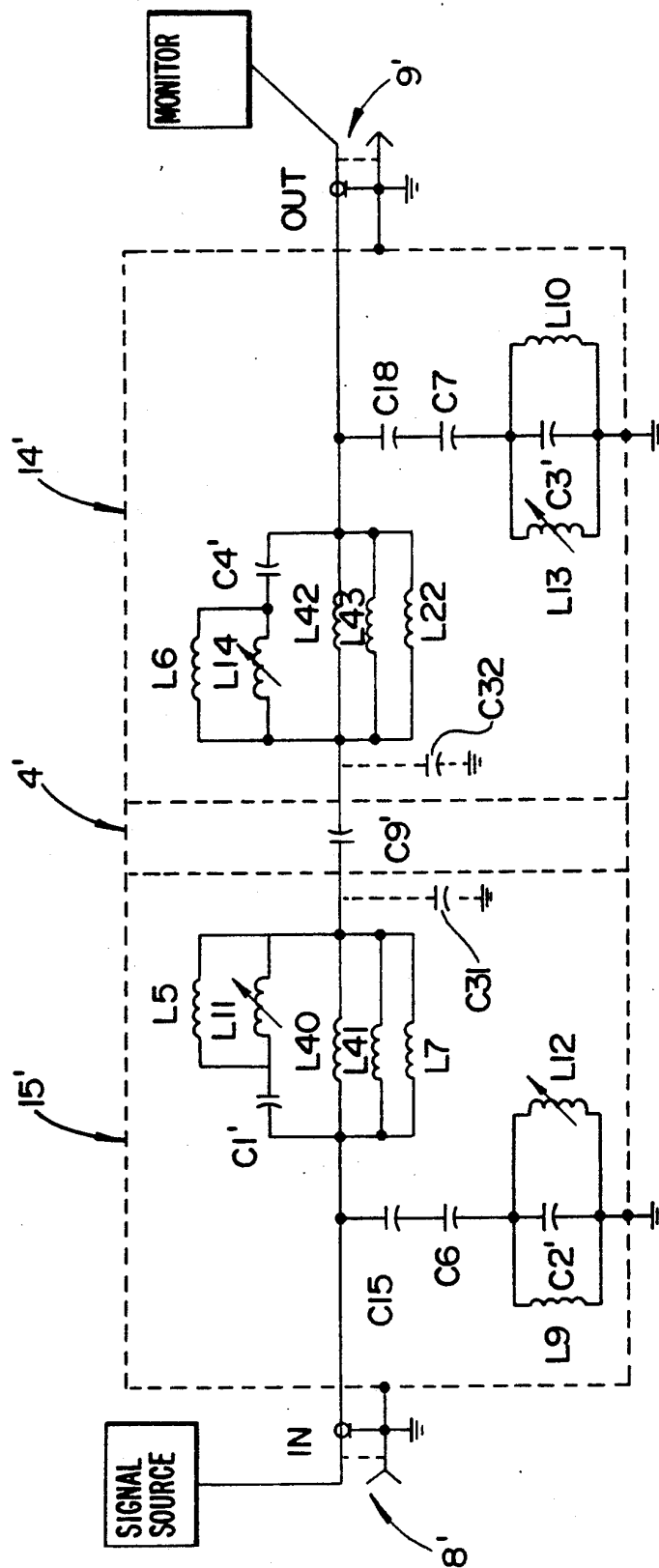


FIG - 1D

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