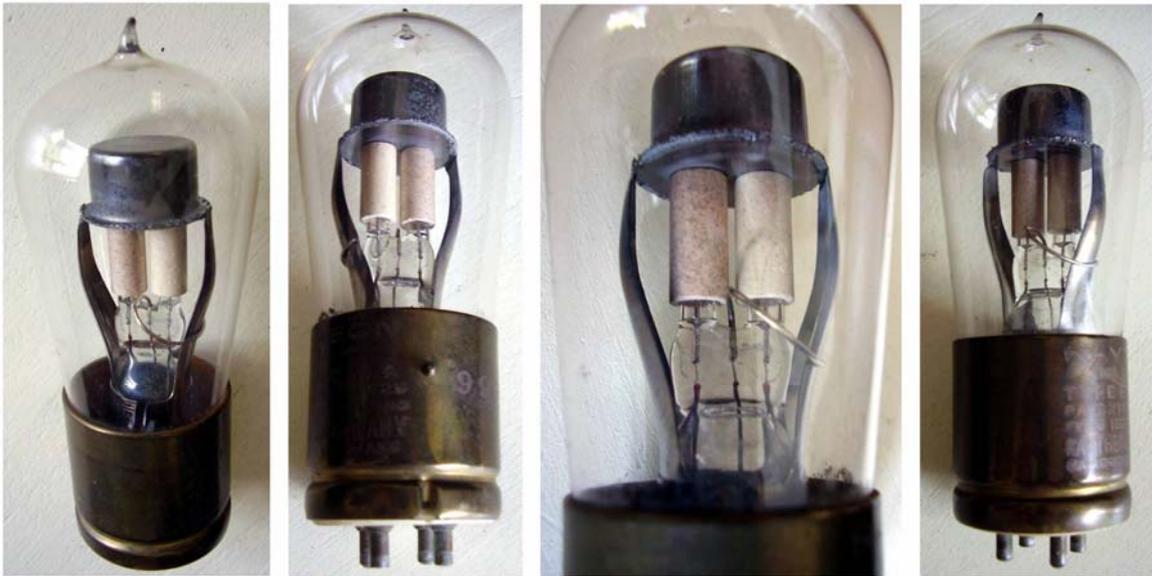


## ‘B’ – Full-Wave Gas Rectifier



This is one of the very early cold-cathode gas rectifiers, introduced by American Appliance Company in 1925. It was intended to be used in B+ battery eliminators. Early productions were run by Champion Lamp Works in Peabody, Massachusetts.

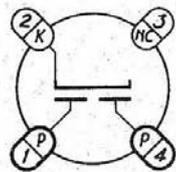
Its operating principles were originated from studies made years before by C.G. Smith on the spectrum of a bright blue star, Zeta Puppis, showing the presence of ionized helium. In 1922 Smith, who had conducted subsequent experiments on low-pressure helium, succeeded in developing at AMRAD the first cold-cathode helium-filled rectifier, the S-tube. When AMRAD went out of business, American Appliances Company hired Smith to continue the development of gas rectifiers. The result was a full-wave type, intended as B+ battery eliminator in radio sets. The most attractive proposed name for the new tube was Raytheon, a euphonic neologism for ‘light of gods’, referring to the helium light rays from Zeta Puppis. Since another firm from Indiana was claiming its priority in the name American Appliances Company, on 25 October 1925 the name just proposed for the new tube was extended to the company.

So we have at one time the birth of Raytheon and of the very early electron tube of its impressive history, the ‘B’ full wave rectifier. Not needing a separate filament winding, the ‘B’ rectifier was very successful and was soon followed by improved variants, [‘BH’](#) and [‘BA’](#) with increased voltage and current ratings.

Looking at the twin-plate electrode structure, the tube is a full-wave rectifier. The hat-shaped cathode is held by two metal brackets tightened around the glass stem. One bracket is welded to the wire coming out from the middle of the pinch. The two

plate rods are fully surrounded by glass and ceramic insulators up to the cathode bottom dish.

No datasheet, but according to the inscription engraved on the brass base and to the ad below, the tube was rated for 60 mA DC output current. Voltage handling capability was initially limited to about 150 V DC, enough to supply 135 V to the RCA 112A then in use. The design was readily modified to handle 180 V, as soon as RCA introduced its 171A operating at that plate voltage.



BOTTOM VIEW OF SOCKET



**RAYTHEON**  
B-60 m. a.  
New List Price  
\$4.50



**RAYTHEON**  
BH-85 m. a.  
List Price  
\$6.00

### Only These Rectifiers Can Meet The Big Replacement Demand

With 590,000 Raytheon-equipped B-power units in use and many of them now ready for new tubes, it is evident that the dealer who exhibits Raytheon will get the cream and the bulk of this business. Makeshift tubes will be "out of the picture," for Raytheon—and *only* Raytheon—can be used satisfactorily in these well-known units. Order Raytheon B and BH from your jobber now.

*The Following Manufacturers Have National Distribution on One or More Complete Units Especially Designed and Approved for Use with Types B or BH Raytheon Rectifying Tubes.*

ACME APPARATUS CO., Cambridge, Mass.  
ALL-AMERICAN RADIO CORP., Chicago, Ill.  
AMERICAN BOUCH MAGNETO CO., Springfield, Mass.  
AMERICAN ELECTRIC CO. INC., Chicago, Ill.  
BRENNEKE TUBE MFG. CO., Chicago, Ill.  
CORWELL ELECTRIC MFG. CO., Long Island City, N. Y.  
THE CONLEY RADIO CORPORATION, Cincinnati, Ohio  
ELECTRICAL RESEARCH LABS., INC., Chicago, Ill.  
FRED-EDMUNDSON RADIO CORP., Brooklyn, N. Y.  
GENERAL RADIO CO., Cambridge, Mass.  
GROBY-GROBY-HINES CO., Chicago, Ill.  
KING ELECTRIC MFG. CO., Buffalo, N. Y.  
KODOMO ELECTRIC MFG. CO., Kokomo, Ind.  
MAYOLAN RADIO CORP., Bronx, N. Y.  
THE MODERN ELECTRIC MFG. CO., Toledo, Ohio  
NATIONAL COMPANY, Inc., Cambridge, Mass.  
SPARKS-WINNINGTON CO., Jackson, Mich.  
THE STERLING MFG. CO., Cleveland, Ohio  
TIMMONS RADIO PRODUCTS CORP., Philadelphia, Pa.  
VALLEY ELECTRIC CO., St. Louis, Mo.  
THE WENGER COMPANY, Chicago, Ill.  
WHEE-McCLUNG CO., LTD., New Philadelphia, Ohio  
ZENITH RADIO CORPORATION, Chicago, Ill.

When making replacements remember this—accurate service records show that only about 3% of Raytheon tubes fail within the guaranteed time of one year or 1000 hours of service. If you are convinced that your customer is entitled to a free replacement, give him a new tube and return the defective one to your jobber. If the jobber does not render prompt service on adjustments, send tubes direct to Raytheon Manufacturing Company, Service Bureau, Cambridge, Mass., or to the Raytheon Service Branch, 2007 S. Michigan Ave., Chicago, with the jobber's name.



**Raytheon**  
THE HEART OF RELIABLE RADIO POWER

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