Tefag radio headphones

AUTHOR

TIME AND PLACE OF CREATION

Place:

, Germany

TECHNICAL DATA

Dimensions: height: 290 mm, width: 230 mm, length: 170 mm

OTHER

MIM 392/V/93

KEYWORDS

I wojna światowa, międzywojnie, czas wolny, dźwięk, komunikacja, łączność, muzyka, nagłośnienie, odtwarzanie dźwięku, radio

DESCRIPTION

The Tefag radio headphones were produced in the 1920s and 1930s by the German Telephon-Fabrik Berliner AG (of which Tefag is an acronym). The company ran manufacturing operations between 1923-1944, mostly manufacturing cables, telephones, and telecommunications equipment. The enterprise also manufactured loudspeakers and other amplification equipment used in radio broadcasting. In their operating principle, radio headphones are essentially a telephone receiver and are used for the reception of sound by individuals. They were used in the first radio devices (usually in crystal detectors) and were called a "helmet" or "telephone". They work by converting electrical energy into acoustic energy, i.e., audible sonic waves. This happens when an electric signal is supplied to the driving mechanism of the membrane, which is usually magnetic, and generates a magnetic field when a voltage is applied across it. The magnetic field causes the membrane to vibrate and its motion at a particular frequency transmits acoustic pressure directly to the ear, hence the need to obtain a tight seal between the earphone and the ear, which is ensured by the ear cups. Early models of such headphones, produced in the inter-war period, are



rigid Bakelite cups connected with a wire headband. The advantage of the headphones is their simple design. At the dawn of radio they were used out of necessity, because loudspeakers dedicated to radio receivers did not yet exist. The operation of the headphones is explained in the Poradnik dla radioamatorów (Eng.: radio amateurs' guidebook) manual published in Kraków: "the amplified and rectified vibrations of the antenna are brought to the headphone or loudspeaker. Both of these instruments are built using the electromagnetic principle, and they convert electrical vibrations to acoustic ones. Radio headphones are far more sensitive than regular telephone receivers and they react to much weaker impulses. For the sake of convenience they are designed to be worn on the head, i.e., two earphones connected by the helmet are placed comfortably on the head. An earphone needs to have strong magnets so that they do not demagnetise over time (...) They should react to minimal currents (...), they should rest comfortably on the head, without pressing on it too hard, and the wire should be sufficiently long and soft. (...) The so-called Nesper system headphones are headphones with precise tuning, where a screw adjusts the distance between the magnet and the membrane. Headphones without such adjustment are set to an optimum setting in the factory". Author: Filip Wróblewski