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F. T. BACKERS

3,084,225

DEVICE FOR RECORDING AND/OR REPRODUCING HIGH-FREQUENCY
SIGNALS, MORE PARTICULARLY TELEVISION SIGNALS
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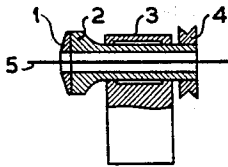


FIG. 1

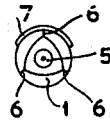


FIG. 2

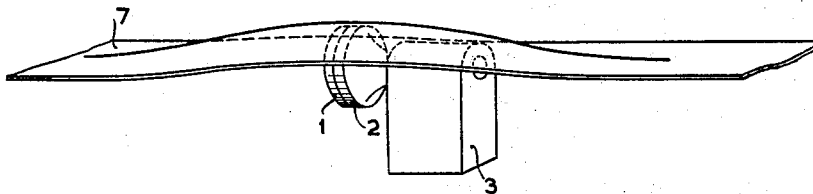


FIG. 3

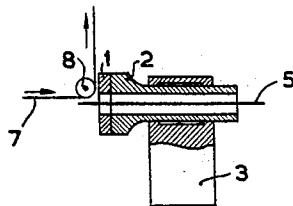


FIG. 4

INVENTOR

FRANCISCUS THEODORUS BACKERS

BY

Frank R. Linder
AGENT

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3,084,225

DEVICE FOR RECORDING AND/OR REPRODUCING HIGH-FREQUENCY SIGNALS, MORE PARTICULARLY TELEVISION SIGNALS

Franciscus Theodorus Backers, Eindhoven, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
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1 Claim. (Cl. 179—100.2)

This invention relates to devices for recording and/or reproducing high-frequency signals, more particularly television signals, by means of a fixed current conductor, which has the high-frequency signals derived from it or supplied to it by means of a quick-rotating wheel constituted by pole-pieces and magnetic yokes traversed by the magnetic flux. Such a device is known, for example, from British patent specification No. 760,874. In this device, the magnetic flux coupled to the current conductor is transmitted to the wheel or derived therefrom, through a fixed yoke and an air gap.

The device according to the invention is characterized in that the current conductor is passed as a single stretched wire through an aperture provided at the centre of the wheel, the magnetic flux being transmitted between the current conductor and the wheel solely through air. When comparing the above-mentioned known device with the device according to the invention, in which only air is used as a medium instead of fixed yokes, it appears that the arrangement of the current conductor in the cavity is less critical than the positioning of the fixed yoke along the wheel.

In one practical embodiment of the device according to the invention, the wheel is arranged on one extremity of a hollow shaft, the other extremity of which is provided with a driving roller (rope pulley) which causes the wheel to rotate, at for example, a speed of 48,000 revolutions/min. For writing about 16,000 lines of a television image per second, of which, for example, in each case 10 lines are on one line of the magnetic record carrier, two rotating gaps on the wheel would be sufficient. The magnetic carrier must then be bent by 180° round the wheel. When use is made of more than two rotating gaps, it is possible to employ a carrier of smaller width, which in this case is bent round the wheel by a correspondingly smaller angle. The carrier is bent round the wheel locally in a manner known in the art. In order to cause the wheel to rotate at the high speed mentioned above, it is necessary to use a wheel having a small diameter. In view of this fact, the device according to the invention is suitable more particularly for small size magnetic recorders intended for domestic use.

In order that the invention may be readily carried into effect, several embodiments will now be explained in detail, by way of example, with reference to the accompanying drawing, in which corresponding parts are provided with the same reference numerals.

FIG. 1 shows a longitudinal section of the device according to the invention.

FIG. 2 is an elevation view of the quick-rotating wheel round which a magnetic carrier is bent.

FIG. 3 is a perspective view of the manner in which the carrier, which is initially flat, is gradually bent as it approaches the wheel and,

FIG. 4 shows a device which may be used in combination with a flat carrier.

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Referring to FIG. 1, reference numeral 1 indicates the quick-rotating wheel according to the invention, which is mounted on a hollow shaft 2. The shaft 2 which is journaled in a bearing block 3, also carries a small rope pulley 4 for driving the shaft at a speed of, for example, 48,000 revolutions per minute. The wheel 1 has a central aperture which adjoins the cavity of the shaft 2. Passed through these cavities is a current conductor 5; the flux traversing the yokes arranged on the wheel induces a potential difference in the conductor when a television program is reproduced and the flux supplies a potential difference when a television program is recorded.

FIG. 2 is an elevation view of the quick-rotating wheel 1 in which three gaps 6 are formed between the pole-pieces of the various magnetic yokes. The current conductor 5 is arranged in the aperture of the wheel, and bent round the wheel is a magnetic carrier 7 which is moved in a direction at right angles to the plane of drawing.

FIG. 3 is a perspective view of the manner in which the flat carrier 7 gradually bends round the device of FIG. 1. The wheel 1 in this case has two gaps and the magnetic carrier must be bent round the wheel through 180°. If more gaps are formed on the wheel, the carrier must be bent through a correspondingly smaller angle. Thus, in the case of FIG. 2, where three gaps are shown, the carrier need be bent round the wheel through only 120°.

FIG. 4 shows a variant of the device of FIG. 1, in which the carrier 7 is moved as a flat carrier along the gaps of the wheel 1. By means of a guide roller 8, the carrier is bent so that it can be moved along the front surface of the wheel 1.

What is claimed is:

A magnetic head for recording or reproducing high frequency signals comprising a quick-rotating wheel having a flat front surface and containing a plurality of magnetic pole pieces separated by a plurality of gaps, means for rotating said wheel, said wheel having a hollow central aperture and an axis, a guide roller, a magnetic carrier moving around said guide roller and adjacent to said gaps along said flat front surface in flat position, and a stationary single current conductor passing through said aperture at a substantially right angle to said flat front surface and along said axis, high frequency signals being supplied to the wheel from said conductor for signal recording, high frequency signals being supplied to the conductor from said wheel during signal reproduction, said conductor being substantially parallel to the portion of said carrier at one side of said roller and substantially perpendicular to the portion of said carrier at the other side of said roller.

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