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of twenty feet or more from the scene. In other words, the new invention removes
the scene from the studio and permits the transmission of larger scenes.

There are three important differences between the new television camera and the
old design. First, a new photodetector cell of greatly increased sensitivity is used.
Second, the scanning disc is much larger in diameter and has larger holes, thus pro-
viding the photodetector cell with a greater amount of light. Third, a new optical sys-
tem is used which employs a six-inch lens to project the image on the disc, thus pro-
viding the cell with a still greater amount of light. These three improvements make
it possible for the cell to attain sufficient output for the operation of a sensitive
amplifier even on a cloudy day. Another feature is that the camera may be focused
by moving the lens back and forth.

In the New York demonstration the pictures are taken on the roof of an office
building, while the receiving equipment is located in a darkened room on the seventh
floor of the same building. The connection between the television camera and the re-
ceiver is by telephone wires; although it is explained that the signals can be sent
and received by radio just as easily. The camera is portable, being assembled on a
wooden frame which is mounted on four wheels, as the pictures show.

The picture on page 296 shows clearly the appearance of the camera; when it is
viewed from the front, the large lens is visible, as well as a black cloth hood which
covers the frame and prevents stray light from reaching the photodetector cell. The
scanning disc is of aluminum which has been painted black; it is three feet in diame-
ter and provided with 30 holes, 1/16-inch in diameter, which have been drilled in a
spiral path along the outer rim of the disc. The photodetector cell, which is approxi-
mately two inches in diameter, is located in a box mounted directly behind the disc.

To turn the disc a D.C. motor is used, which operates also the generators of a synchroniz-
ing current used to control the speed of the motor turning the receiving disc. The
amplifier equipment is located in a long box at the rear of the frame. Five stages of
amplification are used, and distortion has been reduced to a minimum. The im-
ages seen by a Rame News representative, though taken just after the sky had cleared
over before a violent storm, were remarkably clear and distinct in their movements.

SHORT-WAVE TELEVISION BROADCASTING

Licenses for experimental television transmission which have just been issued by the
Federal Radio Commission authorize television transmission by the Radio Corpora-
tion of America, New York, under the call 2XBS; Westinghouse Electric and Manu-
facturing Company, East Pittsburgh, Pa., under the call 8XAV; J. Smith Dodge,
Lexington, Mass., under the call 1XAV; Harold F. Smith, Brooklyn, N. Y., under the
call 2XH; P. S. Lucas, Los Angeles, under the call 0XJW; F. L. Carter, Long Island
City, N. Y., under the call 2XVW, and the Aero Products, Inc., Chicago, under the call
0XAG. These licenses are authorized to transmit in the channels between 4,200 and
4,900 kilocycles (61.60 to 61.90 meters) The Jenkins Laboratories, Washington, also have
been licensed to undertake television transmission, under the call 0XK, on 2,140 and
4,290 kilocycles (154 and 76.05 meters).

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