



Wheel Weaves **COLORS** Together for Television

Dr. Peter C. Goldmark, head of CBS engineering research and development, inspects a color wheel. Improvements in filters since 1941 have helped to reduce flickering. Sponsors declare this wheel reproduces colors more truly than films do.

COLOR television for which the Columbia Broadcasting System has gone to bat began last winter with transmission of movies; direct transmission of street scenes by means of a live color television camera is promised this summer.

Actually, persons gathered around a Columbia ultra-high-frequency television receiver are seeing an extremely rapid series of one-color pictures—first red, then blue, then green. The pictures are seen through a rapidly revolving color filter, which is mounted in front of the set's viewing tube, and the persistence of vision within the watcher's eyes causes the

images to appear in their natural colors.

The color television image is produced by modulating a 10-megacycle video band, wider than in prewar tests (PSM, July '41, p. 65), and is composed of 525 lines of red, 525 lines of blue, and 525 lines of green. They are transmitted in that order, but a complete three-color frame is received in $1/20$ of a second.

Whatever the color television camera picks up is reproduced in exactly the same way. If a black and white newsreel were to follow a studio program in color it would not be necessary to change the dial setting on the receiver.

This receiver enlarges pictures on a 10-inch tube to 12 inches in diameter. Early television pictures were limited to about two by three inches. CBS color television permits images of any size.

Photographed as it appeared on a receiver's screen, this image has been enlarged to 21 inches in diameter from the face of a five-inch tube. Radio and video-frequency components are the same as in set at left.

