ENGINEERING

Newspapers by Radio

If new transmitting and receiving equipment now being offered to publishers comes into widespread use, newspapers may be printed in your own home.

➤ NEWSPAPERS printed in your own home may be a reality in the postwar world if new transmitting and receiving equipment now being offered to newspaper publishers comes into widespread usage. Known for many years to engineers as facsimile, the system transmits eight full pages of tabloid-size newspapers in one hour by radio from the newspaper office to receivers in the home.

Before the war, facsimile receivers cost about $75. Research, engineering and manufacturing studies made during the war should make it possible to offer these receivers, with wartime improvements, at an even lower cost.

At the newspaper office, news, maps, cartoons, advertisements, feature columns and other items that make up a newspaper are mounted on a sheet of paper, so that the end result looks the same as a page from a regular newspaper. This sheet of paper is fed into a machine, where it is scanned, line by line, by a photo-electric eye.

The scanning process does the same thing mechanically that you are doing right now as you read this story. It starts at one line, moving from left to right, then jumps to the next line and repeats the procedure, continuing until all the copy has been scanned.

Everything that the photo-eye sees is converted into electric impulses, then into radio waves by electronic tubes similar to those in a radio set. These tubes break up the picture seen by the electric eye into a series of dots, which are received in your home receiver approximately facsimile in size and at the same speed at which they are transmitted.

The printing is done by a swinging arm that moves back and forth across a roll of special white printing paper in the facsimile receiver, synchronized with the movement of the electric eye in the transmitter. A stylus at the tip of the moving arm sweeps across the paper, and by means of small electrical impulses oxidizes a series of dots in their proper sequence, just as the electric eye transmits them. The coating on the paper turns black on being oxidized, leaving a permanent record of the copy fed into the transmitter at the newspaper office.

The receiver can be turned on at a predetermined time, and after the printing is completed, it will go off, leaving the completed newspaper. All this can be done in the early morning hours while the subscriber sleeps, leaving the morning paper ready to be read at breakfast.

Several industrial companies are now actively engaged in postwar planning for facsimile. One of these concerns, Finch Telecommunications, of Passaic, N. J., has just secured the services of a consultant to advise newspaper publishers interested in the development of facsimile as a part of their activities.

In addition to daily newspapers, weather maps, flash news, pictures, police reports showing descriptions and pictures of criminals, reports to and from planes in the air, data for ships at sea and many other types of material may be transmitted and received by facsimile equipment. Facsimile makes use of the same radio frequencies as FM (frequency modulation) broadcasting. This means that the area over which transmission is practical is more or less confined to the area visible from a transmitter antenna. Therefore, unless networks for facsimile are developed, this service will be limited to local areas.

Science News Letter, November 18, 1944

MEDICINE

Blood Plasma Administered With Compact Apparatus

➤DRAMATIC war-poster pictures of a Medical Corpsman administering blood plasma to a wounded soldier, with the flask hung on the butt of an up-ended rifle, may presently be made obsolete by the invention of a Philadelphia physician, Dr. Alison H. Price, on which U. S. patent 2,362,025 has been issued.

Plasma flasks, in hospitals as well as on the battlefield, are hung above the level of the patient simply to obtain enough pressure, through gravity, to feed the fluid into the vein. Dr. Price substitutes air pressure for gravity.

His apparatus consists essentially of three parts: a lower reservoir containing dried plasma, an upper reservoir filled with sterile distilled water, and a rubber syringe bulb to pump up the pressure. Prior to use, the parts are kept separate, all packed within a telescoping cylindrical case. When ready to use, they are pushed together, connections being established by means of hollow needles that plunge through puncturable membranes. A similar needle at the lower end is inserted into the patient's vein, or, at need, into a bone. The water, flowing through the plasma, dissolves it, and the air pressure carries it on into the vein, the whole apparatus functioning in effect as a big hypodermic needle.

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