

each similar to the stereopticon light. The light rays are then reflected back through lenses to the screen.

STEREOSCOPE. Perhaps you think that both eyes see the same object in the same way, but actually the right eye sees more of the right side of an object and the left eye more of the left side, as you may observe by looking at an object with one eye closed, then the other. The brain puts these two images together and sees them as one object. That is how we get our impressions of solidity and relief.

Two Images Taken with Two Lenses

The principle of the stereoscopic picture is the same as that of the eyes, for it presents two images taken through two lenses. Two photographs of an object or scene are taken simultaneously by a "stereoscopic" camera, so arranged that one lens photographs it from an angle slightly to the right and the other from an angle to the left. These photographs (stereographs) are then mounted side by side on a card.

The stereoscope itself is an instrument with a similar pair of lenses for viewing such photographs. The two images are so blended by the brain that we see a single picture, in which every part stands out solid with life-like effect.

The principle of the stereoscope (from the Greek words, *stereos*, "solid," and *skopein*, "to see") is used in binoculars ("double-eyed" field-glasses) and in opera glasses. There are also binocular microscopes and telescopes.

The stereoscope is a modern invention, the

first instrument of the kind having been devised by Sir Charles Wheatstone (1802-75), the English physicist, in 1838. The stereoscope invented by Wheatstone was greatly improved upon by Sir David Brewster, who in 1849 devised a lens-stereoscope. This was constructed by J. Duboscq and became very popular. The open form of stereoscope, which is now commonly used, was devised by Oliver Wendell Holmes, the essayist and poet.

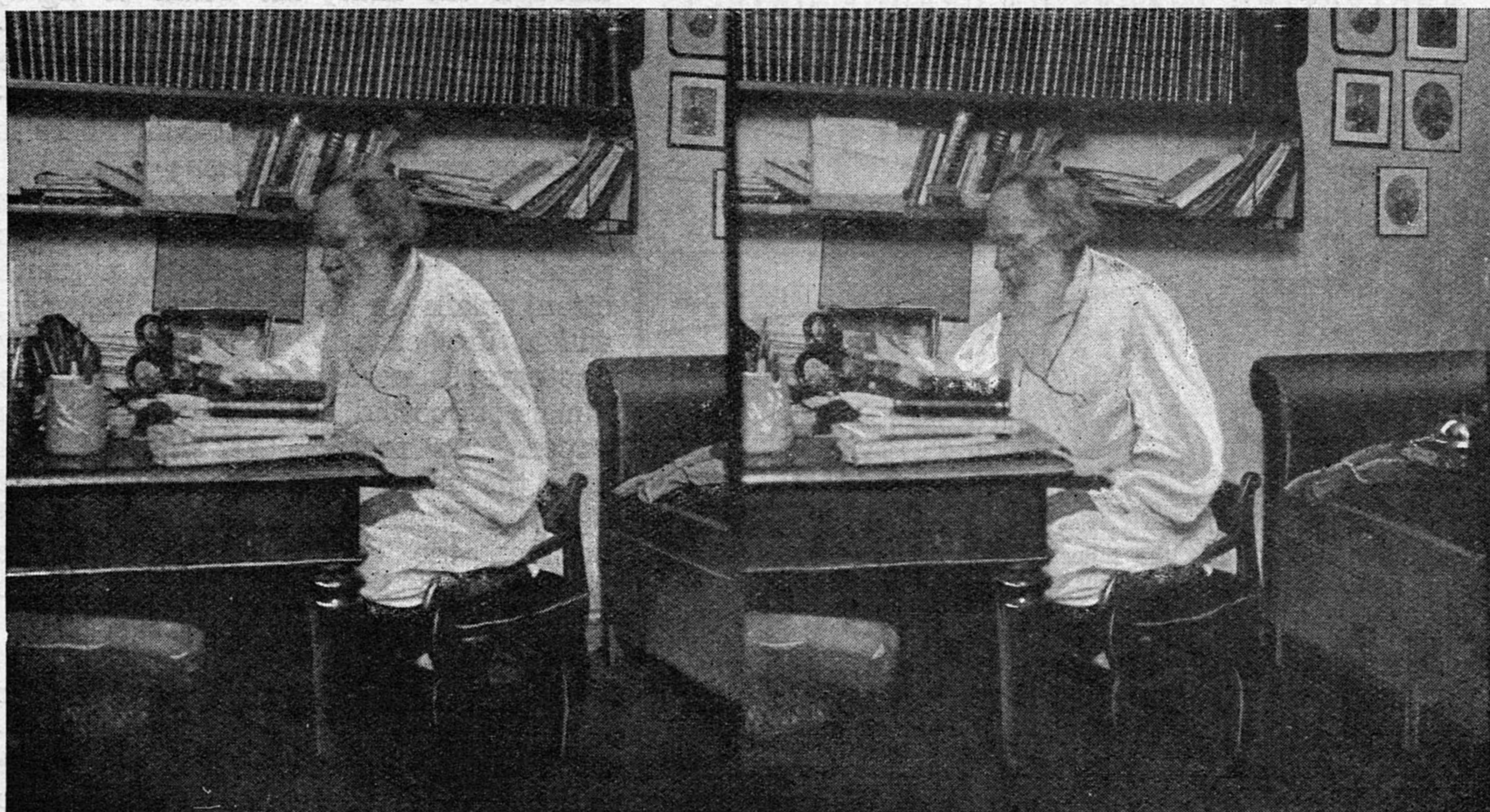
STEREOTYPING. Most newspapers are printed not from the type itself but from "stereotype" plates cast from the page "forms" in which the type has been set. The mould or matrix is made by pressing a sheet of hot moist papier-mâché (thin sheets of tissue paper pasted together) down over the "forms," so that each line and letter and dot of the type is deeply impressed in it. The whole is quickly dried on a "steam table."

How a Plate is Made

Then the matrix is removed and placed in a mould, and melted type-metal is poured in to make a solid curved plate about two-fifths of an inch thick for a big rotary press. The whole process takes only about ten minutes after the type is in the form.

It is possible to make several plates from one matrix, and most country newspapers use columns of flat-cast stereotype plates supplied by firms in the large cities as "fillers" for their news columns. For fine work printing plates are made by the electrotyping process. (See Electrotyping; Newspapers.)

TWO PICTURES TAKEN BY A STEREOSCOPIC CAMERA



These pictures of the great Russian writer, Tolstoy, were taken by the two lenses of a stereoscopic camera. If you look at them through a stereoscope you will see only one picture, with all the details standing out very clearly.

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