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W. ENDERLE

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ENVELOPE FOR X-RAY PLATES

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Fig. 1.

Fig. 2.

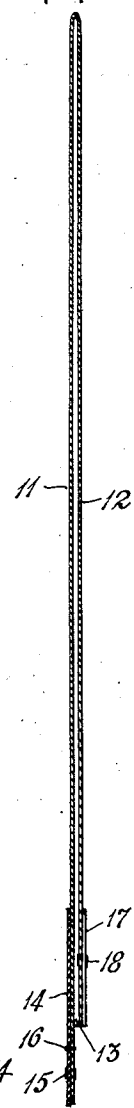
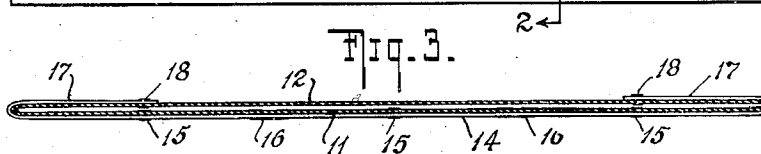


Fig. 3.



WITNESS

E. V. Rasmussen

BY

INVENTOR

WALTER ENDERLE

Conrad Schenk
ATTORNEYS

UNITED STATES PATENT OFFICE

WALTER ENDERLE, OF STUTTGART, GERMANY

ENVELOPE FOR X-RAY PLATES

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My invention relates to envelopes for X-ray plates or films in which transparent sheets of a cellulosic material are utilized in connection with scales and sectional lines on said sheets to fix a particular point on an X-ray plate positioned within said envelope.

In making a diagnosis by means of X-ray films, physicians find it necessary to determine the exact position of certain anatomical organs of the patient with relation to other internal parts, or their exact condition with respect to the location of a center of disorder causing the ailment complained of. In making reports of such diagnoses, it is of considerable advantage to be able to fix the center of disorder and explain or theorize upon the cause of ailment as reflected by the condition of the internal organs and their positions with respect to well-known and accepted points of reference in the anatomical system, and to be certain that the patient or another physician, upon re-examining the X-ray plate or film will be able to locate the various points and positions of the internal organism in precisely the positions which they occupied when the radiologist made his report. For this purpose, I have supplied an envelope for X-ray plates or films, made of sheets of a transparent material, such as celluloid or regenerated cellulose, upon which sheets are outlined scales and sectional lines to insure the proper relocation of the X-ray plate or film within the envelope at any subsequent reference to such plate or film. Furthermore, when using my improved envelope, with its sectional lines dividing the surface of the X-ray plate into sections of equal size, the whole or portions of such sections can be easily identified by means of the scale indexes forming the vertical ordinates and horizontal abscissæ of the ordinary graphic outline. As the envelope is of a definite size, one of each of the closed side and end edges of the sheets forming the envelope fixes the relationship of the plate with respect to the lines on the face of the envelope in such a way that the X-ray plate or film automatically assumes the identical position in relation to the scale marking on the en-

velope whenever it is placed therein, so long as such plate is juxtaposed against two adjacent edges of the envelope or into one corner thereof. The plate is thus self-adjusting within the envelope.

A further advantage of my improved construction lies in the fact that as the envelopes are most likely to be made in particular sizes, with correspondingly uniform scale and cross-sectional line notations, a particular X-ray plate or film may be sent from laboratory to physician, from one physician to another, or to a patient, without its particular envelope but with merely its diagnosis data, when the recipient, or his medical adviser, should the recipient be the patient, may place the plate or film into a standard envelope and thus be able to intelligently interpret the diagnosis. The necessity of a separate envelope for each X-ray plate is thus eliminated.

While I have explained particular advantages of my invention, I wish it to be understood that I do not predicate my invention on any single one of such advantages. In fact, in the particular embodiment of my invention illustrated in the accompanying drawings, I have made provision for various identifying data on the particular envelope, indicating the purpose of using said envelope as a permanent holder for the particular plate.

In the drawings, illustrating only one embodiment of my invention, Fig. 1 is a full front view of an envelope made in accordance with my invention, Fig. 2 is a section along lines 2—2 of Fig. 1, and Fig. 3 is a section along lines 3—3 of Fig. 1. The envelope body 10 is made of a transparent material, such as celluloid, or similar cellulosic material, in sheet form, and comprises a front sheet 11 and a back sheet 12, shown in the drawing in exaggerated cross-section, joined at their side edges and one of their end edges to form a receptacle or envelope, one end of which is open, as at 13. The envelope may, of course, be formed of a single sheet of transparent material by folding it over upon itself in which case only its meeting edges and one of its pairs of end edges

need be joined together, as by overlapping and pasting.

To the open end of the envelope thus formed, I attach a strip of paper or similar opaque and strengthening material in the form of a strip 14 attached to the front sheet 11 by eyelets 15 and/or wire staples 16. The strip 14 may be provided, in the preferred embodiment illustrated, with flange portions 17 adapted to be bent around the edges of the envelope and attached to the back sheet 12 by eyelets 18. Upon the strip 14 may be printed the identifying data, such as the name of the doctor, the name of the patient, the diagnosis, date, etc. and space provided thereon for filling in such other information as may be required.

Upon the front sheet 11 are outlined section lines 19 forming ordinates 20 and abscissæ 21 of the familiar graphic structure. These section lines are so spaced as to define specific areas outlined by cooperating scales 22 and 23 printed on the face of the sheet along the vertical and horizontal edges thereof, the scale 22 comprising a series of graduated points designated by capital letters A, B, C, etc. and corresponding to the several horizontal section lines 21 and the scale 23 comprising a series of graduated points identified by numerals 1, 2, 3, etc. and corresponding to the vertical section lines 20. It will thus be apparent that the section lines and scales being both outlined upon the single sheet 11, it is unnecessary to bring them into cooperative relationship with each other before a rapid and correct location of any particular point in a specific area upon the X-ray plate positioned within the envelope can be made, so long as the X-ray plate is held flush against the scale edges of the envelope. Thus, if a center of disorder has been once established as being within the area bounded by vertical scale-lines 2 and 3 and horizontal scale-lines C and D, such area being conveniently designated as 2-3, C-D, such center can be identified at any future time by inserting the X-ray plate into the envelope so that the plate is flush against the scale edges. In this manner any explanation accompanying a diagnosis may be subsequently easily followed by reference to the location, facilitated by its identification by letter and number, of any organ, organs, or condition thereof, or relation to each other, indicative of ailment or disease.

If the scales and section lines are chosen with a view to exact mathematical measurement, it is obvious that my improved X-ray plate receptacle may serve to assist the diagnostician in making his diagnosis based upon the size, for instance, normal or abnormal, of a particular organ of the body, or its distance from or position with respect to, another organ or anatomical part.

In the preferred form illustrated in the drawings, I have shown my improved X-ray plate envelope of transparent material comprising both front and back sheets as I have found that using such an envelope, it is not necessary to use an artificial light when examining the plate or film contained therein, but that sufficient light of the ordinary intensity existing in the laboratory or office during daylight or at night from the general lighting fixture, may be transmitted through the back sheet to permit the examination of the plate or film and its story without strain. I have found, furthermore, that the transparent material such as celluloid is sufficiently moisture-proof, i. e. water-repellant, to safeguard a film or plate within the envelope from outside moisture. For the same reason moisture will not condense upon the cellulosic material, so that if a partially wet film is placed within the envelope, such film will not stick to the sheet as would be the case with a backing of paper or similar substance.

While I have described a specific embodiment of my invention, it is to be understood that various modifications thereof may be made without departing from the invention as defined in the accompanying claim.

I claim:

An envelope for retaining X-ray plates and assisting in the reading thereof, said envelope being made of a single sheet of transparent cellulosic material folded upon itself and having its meeting edges secured together, the entire envelope, including the seam, being transparent, the body of said envelope having a predetermined size and configuration with respect to the X-ray plate to be retained therein, section lines upon one face of said envelope running across said envelope from edge to edge, section lines intersecting said first mentioned section lines and running from the top of the envelope to the bottom thereof, said lines forming respectively abscissæ and ordinates, each of said section lines having scale markings associated therewith, the X-ray plate when inserted within said envelope being positioned with respect to said scale markings by contact of the edges thereof with two adjacent edges of the envelope whereby the plate may be at all times retained in the envelope and capable of being read over the entire surface of the plate by reason of the complete transparency of the envelope.

WALTER ENDERLE.