Some Technical Arrangements in Roentgen Diagnoses and Therapy

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To cite this article: J. F. Fischer & Chr. I. Baastrup (1922) Some Technical Arrangements in Roentgen Diagnoses and Therapy, Acta Radiologica, 1:3, 372-374, DOI: 10.3109/00016922209137207

To link to this article: http://dx.doi.org/10.3109/00016922209137207

Published online: 13 Dec 2010.

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Some Technical Arrangements in Roentgen Diagnoses and Therapy

by

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(both of Copenhagen)

The following is a description of some smaller arrangements, simplifying the apparatus used in roentgen diagnosis.

For several years these instruments or arrangements have been used in "The Municipal Hospitals of Copenhagen," and may already be known and used in some places, but no publication of them has as yet been made from our hands.

A. Fischer's Hanging Roentgenoscope

This apparatus is designed for roentgenography and fluoroscopy, working with a fixed target-plate distance.

The great advantage in using this apparatus is that it takes up but little space and when not in use may be pulled out of the way, close up to the ceiling of the room.

It is furthermore so simple in construction that no part of it can get out of working order, and, last but not least, it is cheap.

By the addition of some smaller parts it may easily be used in orthodiagraphy.

Regarding technical details, the following may be mentioned as given by the engineers & distributors:

Messrs. Levring & Larsen of Copenhagen:

"When using ordinary gas tubes, the target-plate distance is 900 millimeters.

The tube is placed in a special holder in a box opaque to light rays and so arranged that the tube may be easily shifted; the tubeholder may be centered by means of two screws. In front of the tube is placed a shutter."
The design of this permits of a variable opening either square or rectangular, the control being through duplex levers, which terminate in a single control arm in the front of the apparatus.

These levers operate singly or in union, depending on the opening desired. The front and back of the whole apparatus is covered with lead.

A special arrangement permits of the use of different sizes of fluoroscopic screens, corresponding in size to the cassette to be used.

Usually the roentgenoscope hangs in two reels, but in very low rooms (less than 2.5 meter high), four reels must be used. The roentgenoscope is balanced by means of counterweights which may easily be placed in the corners of the room.

For the arrangements described see Figs. 1 and 2.

B. Standard Tube-holder

The tube lies, as shown in Fig. 3, in a wooden ring.

If the focus on the anticathode is centered right in the bulb, it may easily be seen that the focus is centered right in the middle of the ring too. For the usual gas tubes it has been proved in practice that this way of centering is approximately correct. The ring is fixed to a piece of cardboard with a square cut out in the center.

Baastrup has suggested placing these tube-holders with tubes in each and every one of the tube-stands to be found all over the clinic, and all of them so arranged that, in the tube boxes, some clamps are fixed, under which the cardboard slides along and when in the right place a spring holds the cardboard in position.
As soon as the clinic gets a new tube, it is placed in a tube-holder and remains there as long as it is in working order.

The tube has in this way a good base when standing on a shelf so that no other arrangements are necessary for storing the tubes; in this way there is very little chance of their being destroyed. Tubes are very easily and quickly changed and the system is cheap.

C. Arrangements for avoiding mistakes in filtration in deep therapy (by C. J. Baastrup)

From the overhead system in the treatment room there are two connectors supplying current to every tube.

One of the connectors usually ends in a hook and is placed directly to the cathode.

The other connector ends in a ring.

This connector cannot be directly connected to the anticathode.

To make connection possible a little double-hook is placed between the two rings, one on the overhead connector, the other on the tube.

The abovementioned double-hook is by means of different kinds and colours of silk ribbons fixed to different filters.

Every filter has its own composition of colours, so that everyone who knows the code can see even from a distance what filter is used.

This safety-guard works exceedingly well and is easy to make. Anyone can arrange it by means of the silk ribbons and a piece of copperwire.