

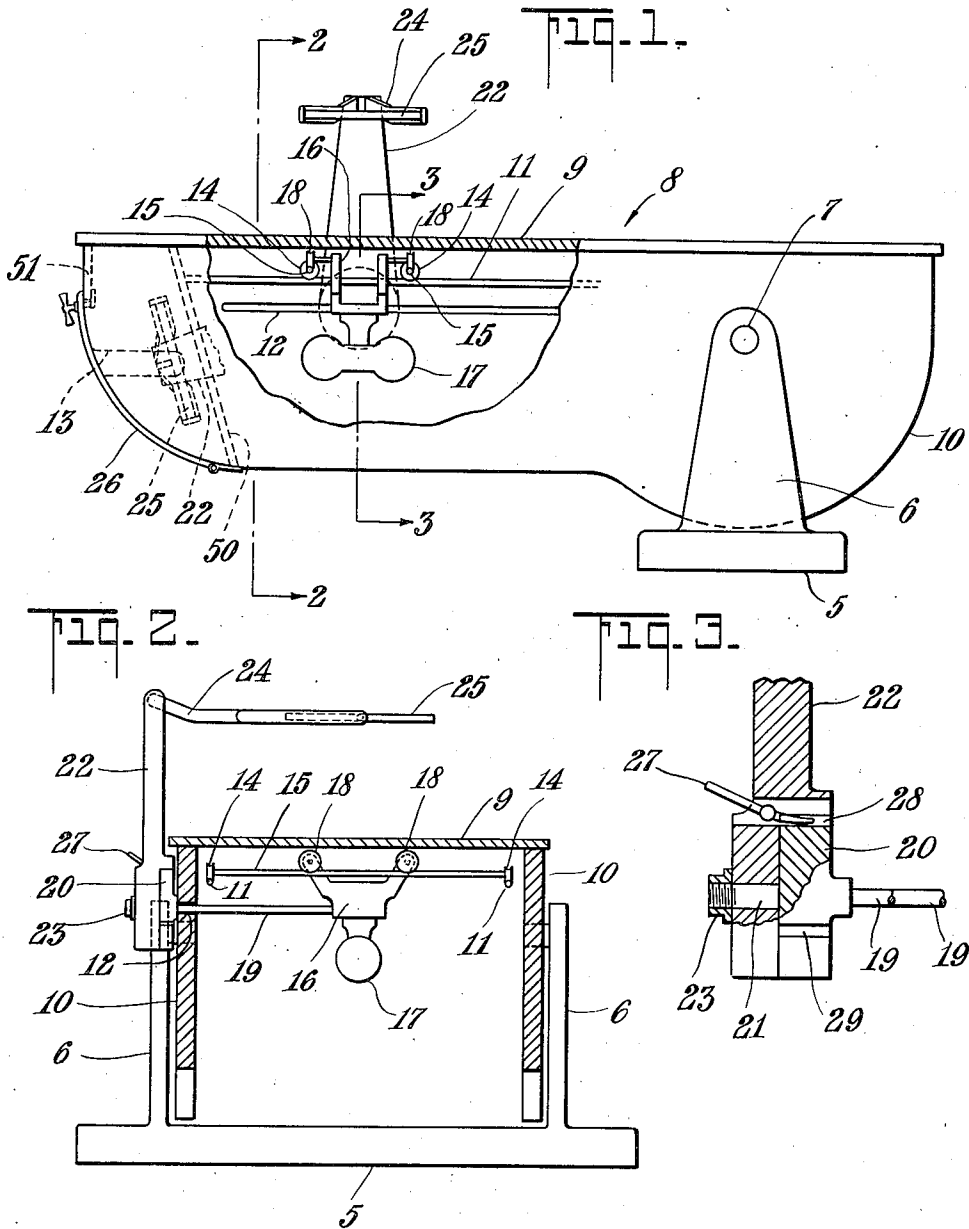
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X-RAY TABLE

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X-RAY TABLE

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My invention relates to X-ray tables and more particularly to means for supporting the fluoroscopic screen holders of such tables.

A fluoroscopic screen forms an invaluable accessory of an X-ray table and it is essential that this screen be so mounted that it can be manipulated in a flexible manner. It is equally important that the screen holder be so supported that it can be readily and quickly removed from its operative position above the table and will not hinder the operator in taking a radiographic exposure or serve as an obstacle to placing a patient upon the table or the removal therefrom. For this latter purpose the holders are usually pivotally mounted at a point above the top of the table so that they may be rotated in either a horizontal or vertical plane from their operative position into positions at one side of the table or above the same. Such constructions, however, either do not place the screen holder in a completely unobstructive position or are very complicated and expensive. For example, in a common form of construction the screen holder is pivoted on a horizontal axis at a point above the table from a supporting arm which extends at all times vertically at one side of the table and is connected to and movable with a fluoroscopic tube located below the table. Although in such construction the screen holders can be removed from their operative position, they still remain above the level of the top of the table and, together with the supporting arm which always extends vertically above one edge of the table top, prevent free and unhindered operation of the apparatus.

While numerous other methods of supporting the screen holders have been suggested, they either are very complicated and expensive or do not completely remove the holders and their supports from the zone of operation above the table.

The main object of my invention is to overcome the above difficulties and to so support the screen holder that it may quickly and readily be removed to a "storage" position at which it will in no way hinder the manipulation of the apparatus.

A further object of my invention is to simplify the construction of the supports for such screen holders and to reduce the cost thereof.

A further object is to protect the screen holder from being damaged when it is in the storage position.

A still further object is to protect the fluoroscopic screen from light when in its storage position.

Further objects of my invention will appear as the description progresses.

In accordance with the invention I so support the screen holder that it can be moved from its operative position into a storage position beneath the level of the top of the table, and preferably within the table itself.

In one embodiment of my invention, which is applicable to an apparatus having a fluoroscopic tube mounted on a carriage so as to be movable in a plane beneath the table top, I provide the carriage with a member which extends from one side of the table, and pivotally mount on this member at a point adjacent the table top a supporting arm upon which the screen holder is mounted. With such a construction, merely rotating the supporting arm will remove the screen holder to a position within the table whereas the supporting arm will be moved to a position at one side of the table and below the level of the top thereof. As a result neither the space above the level of the table top or the space to the sides of the table is obstructed by the fluoroscopic screen holder or by its supporting means.

The end of the table may be provided with a suitable door for the passage of screen holder, and suitable means may be provided for locking the supporting arm and screen holder in the operative and storage positions. Furthermore, I prefer to provide a light-proof compartment for the screen when in its storage position.

In order that my invention may be clearly understood and readily carried into effect, I shall describe the same in more detail with reference to the accompanying drawing in which;

Figure 1 is a side view of an X-ray table embodying the invention with certain parts broken away,

Fig. 2 is a sectional view along lines 2—2 of Fig. 1, and

Fig. 3 is a fragmentary and partly-sectionized view on an enlarged scale taken along lines 3—3 of Fig. 1.

The apparatus illustrated in Figs. 1 and 2 comprises a base 5, for instance of cast iron, having two upright supports 6. Pivotedly supported from supports 6 at points 7 (see Fig. 1) is an X-ray table 8 having a top 9, and two sides 10 of which one is provided with two slots 12 and 13 for a purpose later to be discussed. One end of sides 10 is rounded and may be provided in known manner with teeth to permit adjustment of the position of the table either electrically or manually. As such tilting mechanisms are well

known in the art further discussion or illustration of the same is believed to be unnecessary.

Beneath the top of the table and extending longitudinally thereof are two parallel guides 11 (see Fig. 2). Running on guides 11 are four rollers 14 each rotatably mounted on one end of two laterally-extending guide bars 15. A fluoroscopic X-ray tube 17 of any of the usual types is supported from a carriage 16 provided with four rollers 18 which ride on the bars 15. Such a construction, which is in common use in the art, allows free movement of tube 17 in a plane parallel to the table top.

As shown in Fig. 2, two rods 19 (only one being visible in the figure) are fixedly secured to and movable with carriage 16, and extend through the slot 12. Secured to the free ends of rods 19 is a member 20 of circular shape.

As shown more clearly in Figure 3, member 20 is provided with a cylindrical projecting stud 21 having a threaded end. Rotatably mounted on stud 21 and secured thereto by a nut 23 is a supporting arm 22 which, as shown in Fig. 2, extends above the top of the table. A latch 27 pivoted within a slot in arm 22 is adapted to engage either slots 28 or 29 in the periphery of member 20.

Secured to the upper end of arm 22, for instance pivoted thereto, is a yoke member 24 upon which is pivotally mounted a fluoroscopic screen holder 25. It should be noted that the screen holder 25 may be supported from arm 22 by any of the constructions known in the prior art, and that the arm 24 and holder 25 may be counter-balanced if desired.

With the apparatus illustrated the screen holder 25, as well as the supporting arm 22, may be completely removed from the operating zone. More particularly, with the apparatus in the position shown in Fig. 1, the tube 17 and holder 25 together with their connecting members are moved slightly to the left. Latch 27 is released from slot 28 and arm 22 is rotated counter-clockwise until latch 27 engages the slot 29. The door 26 is opened and the carriage 16 is moved to the right whereby the holder 25 and arm 22 assume the positions indicated by dotted lines with the arm extending through slot 13.

Although the door 26 improves the appearance of the table, it also places the screen carriage in a location where the fluoroscopic screen, and particularly the lead glass cover thereof, are protected against accidental breakage. Furthermore, the screen is protected from light because

it is housed in the light-proof compartment formed by the side walls, walls 50 and 51, and door 26. The use of such an enclosure is particularly necessary when the screen has a covering of zinc oxide, because the sensitivity of this compound is reduced by the action of light.

It is not necessary that the screen holder be placed within the table itself, as arm 24 may be rotated upward 90° and arm 22 rotated counter-clockwise to place the holder at the side of the table. Also in such constructions, I prefer to provide a light-proof compartment for storing the screen when not in use.

Although I have described my invention in connection with specific examples I do not wish to be limited thereto, as the invention broadly lies in supporting a screen holder on a member which is pivoted so that the holder as well as the member may be moved to a position below the level of the table top and out of the operating zone. Therefore I do not desire to be limited to particular construction illustrated and described.

What I claim is:

1. An X-ray table comprising a base, a top supported by said base, a fluoroscopic screen holder having an operative position above the table top and a storage position below the level thereof, and means supporting said holder from said table and permitting rotation of the same into the storage position, said means comprising a member pivoted on an axis substantially parallel to the table top and located at a point below the level of the table top.

2. An X-ray table comprising a base, a top supported by said base, a fluoroscopic screen holder having an operative position above the table top, means forming a light-proof storage compartment below the level of the table top, and means to support said holder and to permit removal of the same into said storage chamber, said means including a member pivoted on a horizontal axis lying adjacent the level of the table top.

3. An X-ray table having a top and a base forming at one end a substantially light-proof chamber, a horizontal pivot supported on one side of said table and adjacent the level of the top thereof, a member rotatably mounted on said pivot, and a holder carried by said member and adapted to receive a fluoroscopic screen, said holder being placed in said chamber upon rotation of said arm about the pivot.

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