April 29, 1969 G. ROSSI 3,441,266

DEVICE FOR TILTING, LIFTING AND LOWERING THE PATIENT-SUPPORTING BOARD OF AN X-RAY TABLE

Filed Sept. 20, 1966

Fig.1

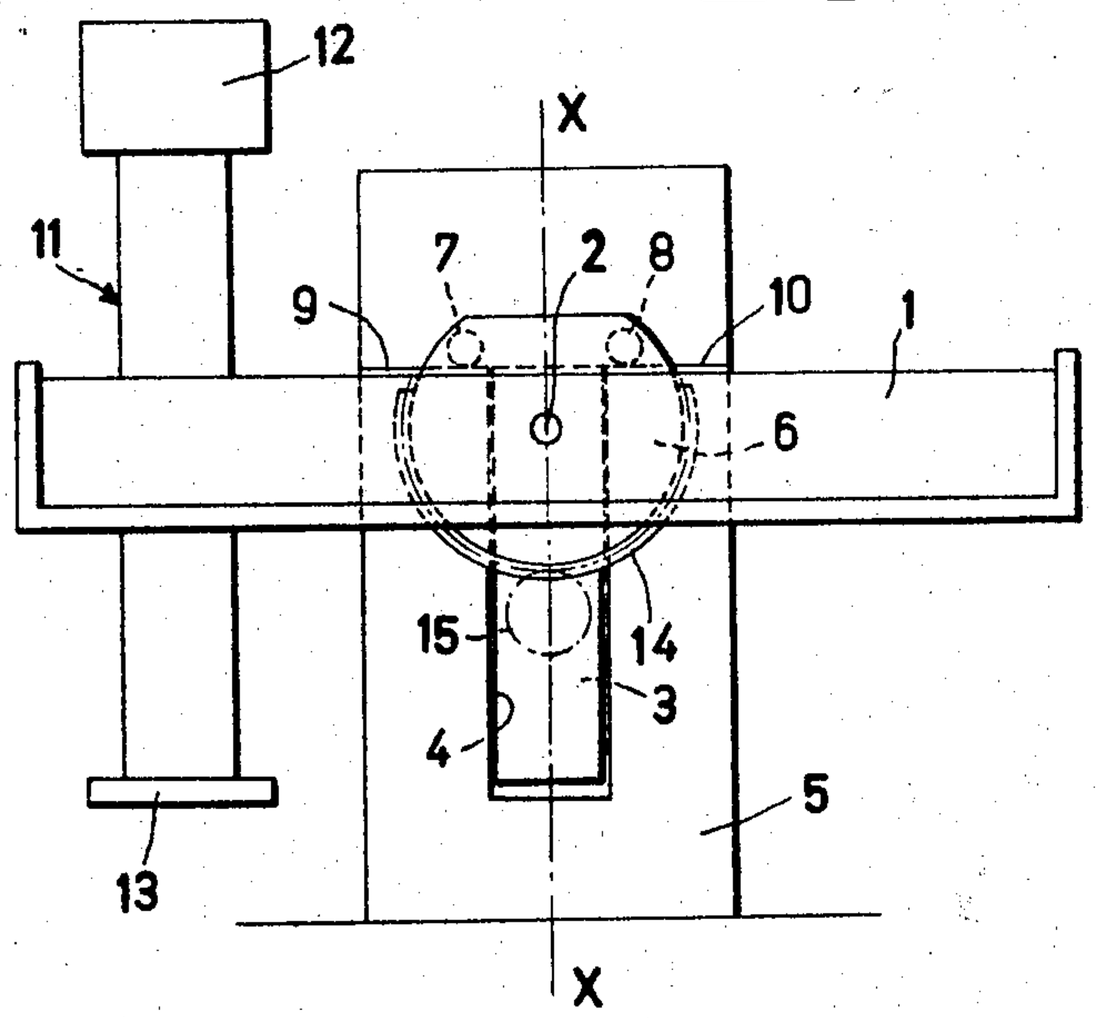


Fig.2

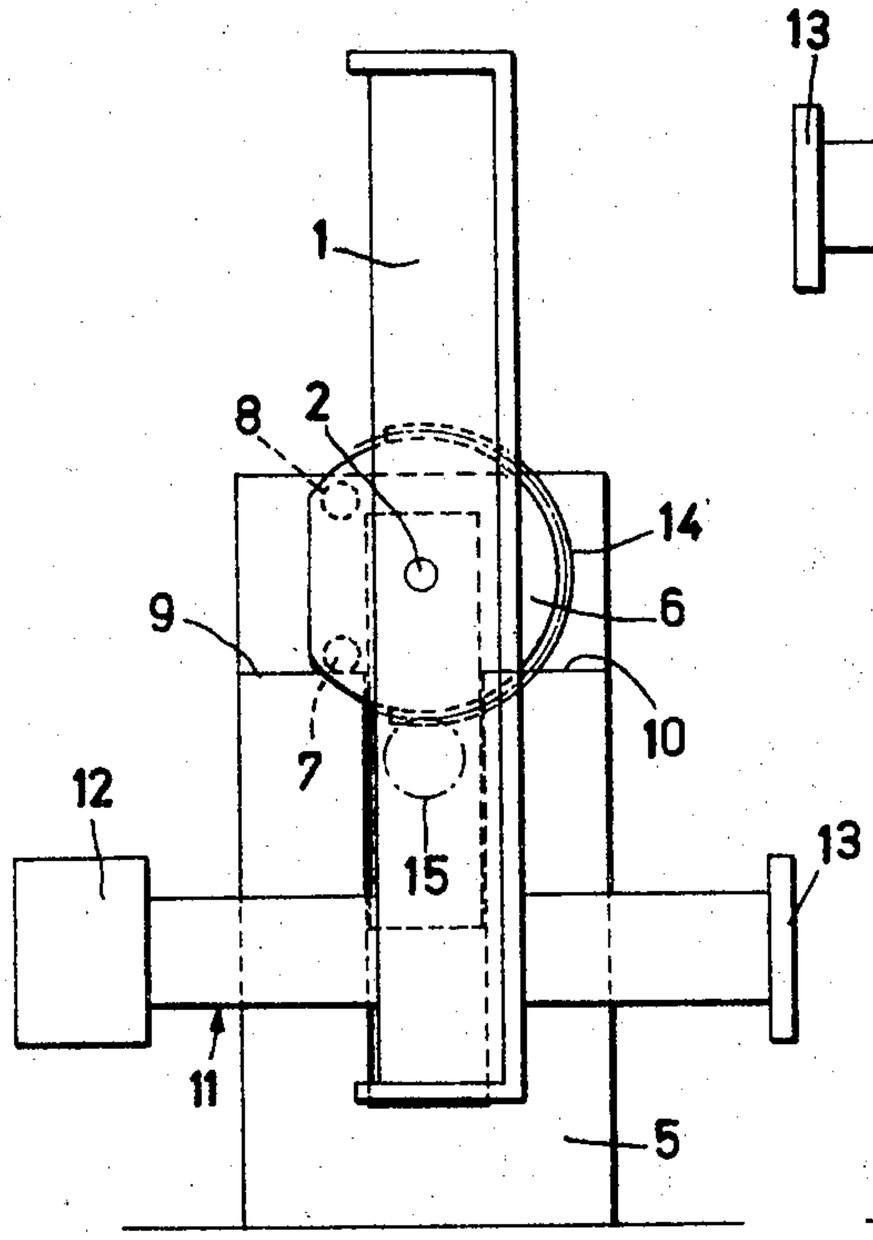
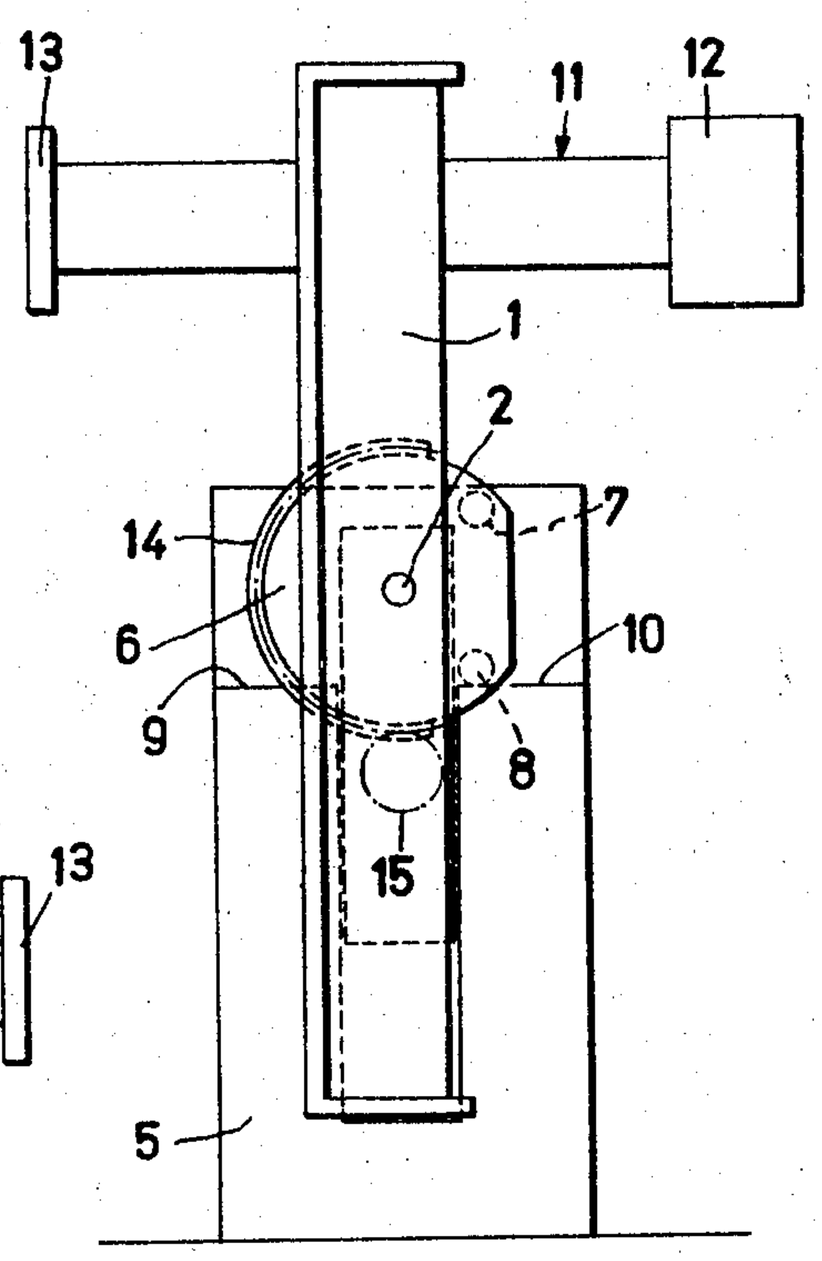


Fig.3



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DEVICE FOR TILTING, LIFTING AND LOWERING THE PATIENT-SUPPORTING BOARD OF AN X-RAY TABLE

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Int. Cl. A61g *13/00*; A47b *9/00*
U.S. Cl. 269—323 2 Claims

ABSTRACT OF THE DISCLOSURE

A device for tilting and lifting a patient-supporting board of an X-ray table, in which a supporting member is freely slidable in a vertical guideway formed in the supporting frame of the table and the supporting member carries a tilt pivot rigid with said board for rotation about its own horizontal axis. A flange is rigid with the pivot and carries two rollers spaced from the pivot and arranged on opposite sides of a plane containing the pivot axis and extending perpendicular to the plane of the board, the rollers slidably resting on a flat surface formed in the supporting frame whereby by rotating the pivot and the board therewith in either direction, the angle and elevation of the board can be adjusted.

This invention relates to X-ray tables and particularly to X-ray tables in which the patient-supporting surface can be tilted and elevated.

In X-ray tables, it is desirable to be able to tilt the patient-supporting board about a horizontal axis while simultaneously being able to lift (or depress) said tilting axis so as to provide a minimum height from the ground, consistent with the imparted tilt.

An object of this invention is to provide a device capable of effecting either lifting or depressing of the patient-supporting board during the rotation thereof about its own tilting axis.

The subject device is essentally constituted by a supporting member which is freely slidable in a vertical guide-way formed in the supporting frame of the X-ray table, and by a pivot solidly affixed to said board and freely rotatable in said supporting member about a horizontal axis; two rollers having parallel axes are affixed to a flange rigid with said pivot so as to be placed on opposite sides of a diametrical plane of symmetry passing through said pivot and extending perpendicular to the plane of said board. The two rollers slidably rest on a horizontal flat surface formed in the supporting structure and, means is provided for causing said flange of said pivot to be rotated in either direction. By virtue of said arrangement, by causing the pivot to be rotated in either direction with respect to a normal lowered position, the flange is turned about one roller which rests on the flat surface and the patient-supporting board is lifted vertically with the guided supporting member as a unit.

According to a preferred embodiment, the means for rotating the pivot consists of a toothed ring or sector coaxial and rigid with the flange and a pinion meshing with said toothed ring and pivotably supported in the slidable support, and whose rotation can be either manually or mechanically controlled.

A possible embodiment of the invention has been illustrated by way of example in the accompanying drawing, wherein:

FIGURE 1 shows a diagrammatical front view of the device in a lowered, horizontal position.

FIGURE 2 and FIGURE 3 are front elevational views of said devices in two end positions of tilting.

In the above enumerated FIGURES, the numeral **1** generally indicates a patient-supporting board, rigid with a tilt pivot **2**, the latter being supported by a supporting member **3** allowed to slide along a vertical guideway **4** formed in a supporting framing **5**. Pivot **2** is freely rotatable about its own axis in the supporting member **3** and its flange **6** carries rollers **7** and **8** rotatable about axes parallel to the axis of said pivot but spaced apart therefrom and positioned on opposite sides with respect to a plane x—x containing the axis of the pivot and extending perpendicular to the plane of the board. The two rollers **7** and **8** slidably rest on two horizontal flat projections **9** and **10** formed on the supporting framing **5**. The numeral **11** indicates an assembly formed by an X-ray tube **12** and a holding device **13**.

To cause the pivot **2** to be rotated in its supporting member and thus the board rigid therewith to be tilted, the flange **6** of the pivot is solid with a toothed sector coaxially mounted and diagrammatically shown at **14**, which is in mesh with a toothed pinion also generally shown at **15** and pivoted on the supporting member **3**, said pinion being adapted to be driven either manually by a specially provided crank or mechanically or electrically.

If, starting from the normal position, shown in FIG. 1, the flange **6** is caused to be rotated in counterclockwise direction (FIG. 2), or in clockwise direction (FIG. 3), the flange shall rest on either roller **7** (or **8**) only, and the latter acts as a slidable fulcrum about which the board rotates while being simultaneously lifted with its supporting member **3** until attaining the end positions as shown in FIGS. 2 and 3, respectively. The maximum lifting height is a function of the positions of the rollers **7** and **8** and of the distance betwen the respective axes thereof.

I claim:

1. A device for tilting and elevating a patient-supporting surface of an X-ray table, said device comprising a supporting framework having a vertical guideway, a supporting member freely slidable in said guideway, a patient-supporting board including a horizontal pivot rigid therewith and mounted rotatably in said supporting member, a flange rigid with said pivot and two spaced rollers supported on said flange for rotation about axes spaced from said pivot, said rollers being arranged on opposite sides of a plane passing through said pivot and extending perpendicular to the plane of said board, said supporting framework having a flat surface on which said rollers slidably rest and means for rotating said pivot in either direction thereby to rotate said board therewith and raise one of the rollers with respect to said flat surfaces.

2. A device as claimed in claim **1**, wherein said means for rotating said pivot comprises a toothed sector rigid with said flange, and a drivable pinion on said supporting member and in mesh with said toothed sector.

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