G. E. RICHARDS.

X-RAY PHOTOGRAPHING APPLIANCE.

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1,374,235.

Patented Apr. 12, 1921

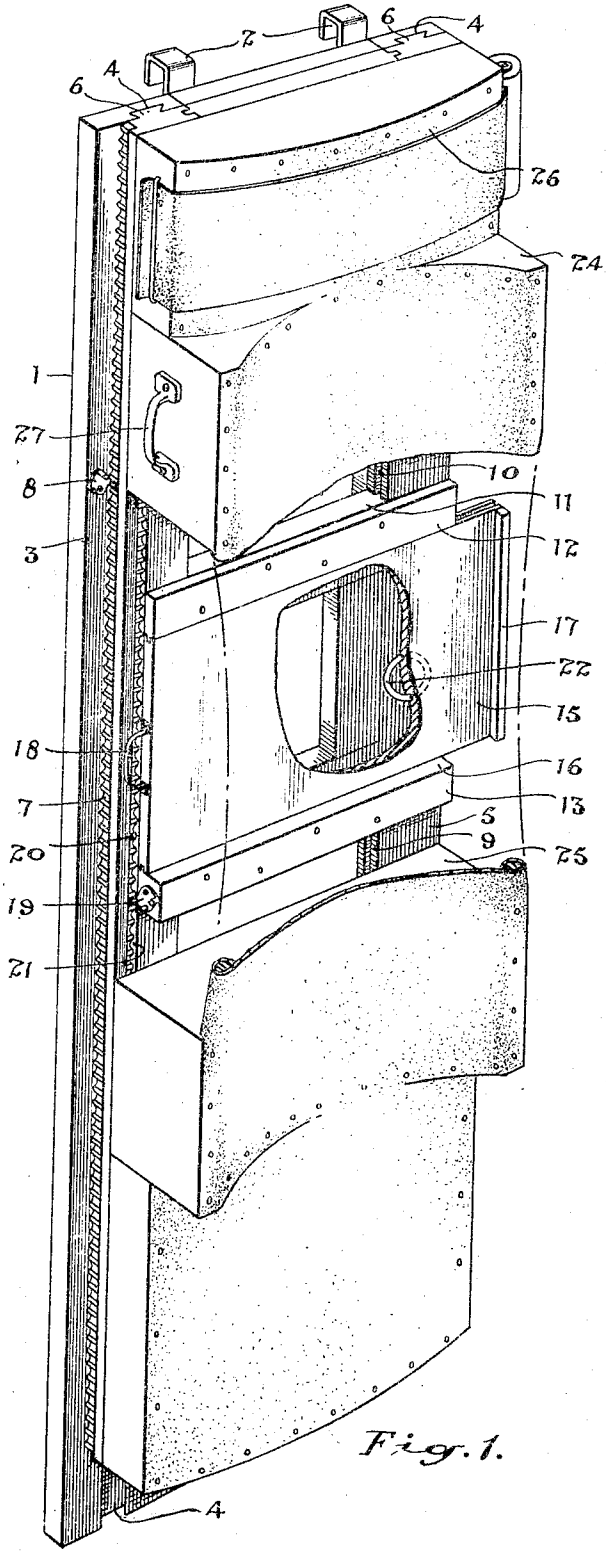


Fig. 1.

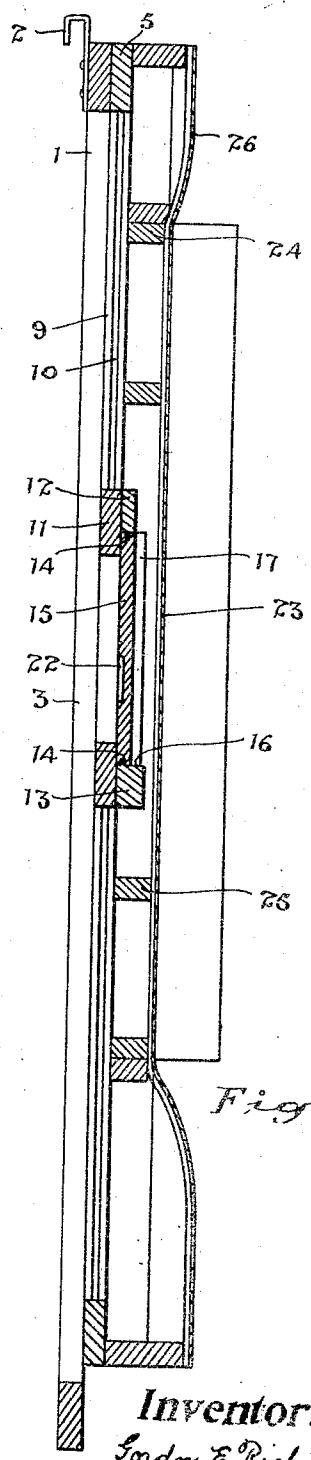


Fig. 2.

Inventor.

Gordon E. Richards

by H. J. S. Dennison atty

UNITED STATES PATENT OFFICE.

GORDON E. RICHARDS, OF TORONTO, ONTARIO, CANADA.

X-RAY PHOTOGRAPHING APPLIANCE.

1,374,235. Specification of Letters Patent. Patented Apr. 12, 1921.

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To all whom it may concern:

Be it known that I, GORDON E. RICHARDS, a subject of the King of Great Britain, and resident of the city of Toronto, county of York, Province of Ontario, in the Dominion of Canada, have invented certain new and useful Improvements in X-Ray Photographing Appliances, as described in the following specification and illustrated in the accompanying drawings, that form a part of the same.

The objects of the invention are, to facilitate the taking of serial plates while the patient remains at rest supported in a definite position and to enable the operator obtaining the necessary adjustment moving the patient to the desired position with ease and adjusting the plate holder to the required position.

A further object is to enable the operator to definitely locate the position of the plate in relation to the patient and the particular portion of the anatomy to be photographed.

The principal feature of the invention consists in the novel construction and arrangement of parts, whereby a locating frame is slidably adjustable upon a supplementary frame adapted to be placed upon the operating table, said slidable frame being adapted to receive and support the body of the patient in a definite position, and whereby the plate holder is adapted to be adjusted longitudinally and transversely without interfering with or moving the patient.

A further feature consists in the novel arrangement of an opaque member upon the plate holder whereby the adjustable plate holder is definitely located.

In the drawings, Figure 1 is a perspective view of a device constructed in accordance with this invention, a portion of the holder for locating the patient being broken away.

Fig. 2 is a longitudinal mid-sectional view through the device.

The device shown in the accompanying drawings illustrates a structure adapted to be used on the ordinary X-ray operating table and it comprises a rectangular frame 1 provided with hooks 2 to be hooked over one end of the table to hold it in place. The side rails 3 are formed with the longitudinal dove-tail grooves 4 extending from end to end thereof. The rectangular frame 5 rests upon the frame 1 and is provided with dove-tail tongues 6 extending longitudinally of the side rails and fitting the grooves 4 being slidable therein.

The outer edge of one of the longitudinal members of the frame 5 is provided with the metallic toothed rack 7 which extends from end to end. This rack is engaged by a rotatable latch member 8 pivotally secured to the side rail 3 of the frame 1 at a convenient point and said latch member is adapted to engage the rack to hold the frame 5 in any desirable adjustment as it is moved longitudinally in its grooved support.

The inside edges 9 of the longitudinal members of the frame 5 are formed with the rabbeted grooves 10 and between these sides is slidably arranged a frame 11.

A pair of transversely arranged bars 12 and 13 are secured to the frame 11 and extend over the top faces of the side bars of the frame 5 and each is provided with a rabbet tongue 14 to receive the transversely slidable member 15.

The lower bar 13 is of greater width than the thickness of the member 15 and forms a ledge 16 against which the photographic plate holder is laid.

The slidable member 15 is provided with an end strip 17 against which the end of the plate holder is located and the member 15 is provided with a handle 18 at the front end by which the member is operated transversely in its guides.

The frame 11 is secured in adjusted positions longitudinally of the frame 5 by means of a ratchet dog 19 rigidly secured to one end of the bar 13 and engaging a toothed metal rack 20 bedded in a longitudinal groove 21 in one of the side members of the frame 5.

The member 15 has embedded in one side thereof a metal ring 22 which is used for the purpose of locating the proper position of the plate in relation to the patient. The center of said ring is arranged to coincide with the center of a photographic plate when the holder is placed against the bar 13 and against the end strip 17 of the member 15.

The patient is supported adjacent to the transverse sliding member 15 by means of a bridge structure formed by a strip 23 of canvas or leather stretched between the brace members 24 and 25 rigidly secured to the frame 5. A head support 26 is arranged beyond the member 24 and beyond

the member 25 is arranged a knee or leg support.

The member 23 is of concaved formation adapted to form a comfortable rest for the body of the patient.

Hand grips 27 are secured to either side of the brace member 24 to enable the patients steadying themselves or to shift their position.

The device may be used in a vertical position or may of course be tilted at any angle as may be desired by the operating physician. The position of the patient may be readily altered by sliding the frame 5 on the frame 1 and the plate holding frame 11 is adjusted in the longitudinal grooves in the frame 5 until the slide member 15 is brought to the desired position, the same being located in relation to any portion of the antomy which it is desired to have centered upon the plate. When located the frame 11 is locked by means of the ratchet 19 and the operator places the plates upon the slide member 15 which may be moved inwardly close to the patient and again moved outwardly in order to quickly recover the plate holder. This operation may be repeated continuously for suitable periods in obtaining a series of plates in following the action of the internal organs. The device is extremely simple, is preferably made of wood and is light and easy to handle.

The concaved form of the member 23 is of very great importance as it conforms to the curvature of the body and maintains the organs in their natural position.

What I claim as my invention is:—

1. In an X-ray photographing appliance, the combination with the operating table, of a frame longitudinally adjustable upon the table and adapted to support the patient, and a plate holding member supported on said adjustable frame and longitudinally and transversely adjustable in relation to said frame.

2. In an X-ray photographing appliance, the combination with the operating table, of a base frame adapted to be secured to the table and having longitudinal guides, a frame longitudinally slidable upon said guides for supporting the patient, means for holding said frame in adjusted positions, and a plate holder supported upon the adjustable frame and adapted to be adjusted longitudinally and transversely independent of said supporting frame.

3. An X-ray photographing appliance, comprising a rectangular-shaped base frame adapted to be placed upon an operating table and having longitudinal dove tail grooves extending from end to end thereof, a rectangular frame having dove tail tongues slidably engaging the grooves in the aforesaid frame, a toothed rack secured to the base frame, a ratchet member carried on the movable frame and engaging said rack to hold it in adjusted positions, a body supporting structure secured to the latter frame and spaced therefrom, and a plate holder arranged between said supporting structure and the frame and adjustable transversely and longitudinally.

4. An X-ray photographing appliance, comprising a frame adapted to be placed upon an operating table and having a raised structure adapted to support the patient and formed with a recessed central portion, a member longitudinally adjustable in the recessed portion of said frame, means for locking said member in its longitudinal adjustment and a transversely slidable plate holder arranged in said longitudinal adjustable member.

5. An X-ray photographing appliance, comprising a frame adapted to support the patient having a recessed central portion and a longitudinal guideway in said recessed portion, a frame slidably arranged in said longitudinal guideway and having a pair of transverse guides, a toothed rack arranged upon the supporting frame, a locking member secured to said longitudinal adjustable frame and holding it in adjusted positions, and a grooved bar slidably engaging said transverse guides on said frame having an end stop.

6. An X-ray photographing appliance, comprising a frame for supporting the patient and having a recess in the length thereof, a member longitudinally adjustable in said recess, a plate holder transversely adjustable upon said longitudinally adjustable member, and a metallic centering member secured to said plate holder and adapted to indicate the position of the plate in relation to the patient.

7. An X-ray photographing appliance, comprising a structure for supporting the patient having a concaved surface extending longitudinally of the central portion, a recess arranged beneath said concaved portion and opening to the side, and a plate holder transversely and longitudinally adjustable within said recess.

GORDON E. RICHARDS