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1,453,473

R. J. McKENNA

X-RAY PLATE CHANGER

Filed Feb. 23, 1922

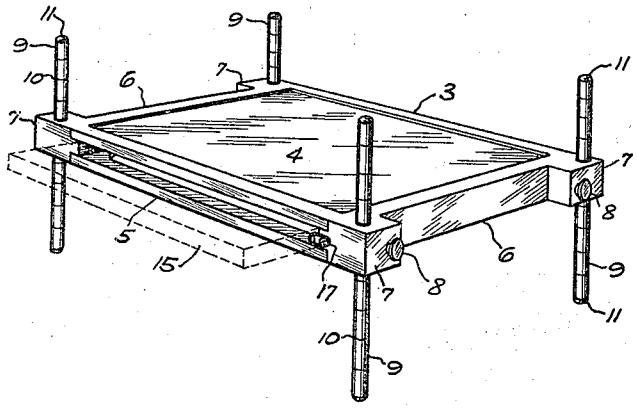


Fig.1

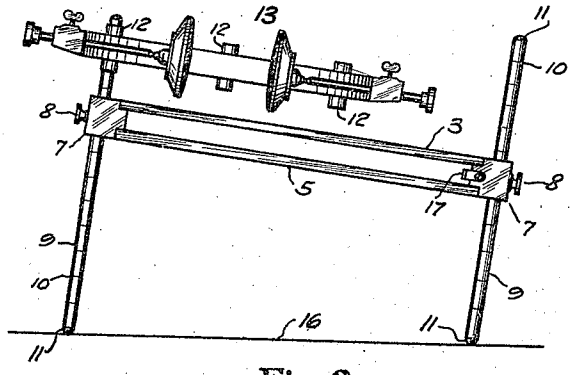


Fig.2

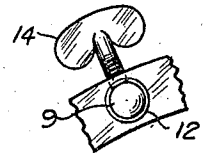


Fig. 3

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# UNITED STATES PATENT OFFICE.

RAYMOND J. McKENNA, OF DENVER, COLORADO, ASSIGNOR TO MAGNUSON X-RAY COMPANY, A FIRM COMPOSED OF ALFRED G. MAGNUSON AND CORA I. MAGNUSON.

## X-RAY PLATE CHANGER.

Application filed February 23, 1922. Serial No. 538,640.

*To all whom it may concern:*

Be it known that I, RAYMOND J. McKENNA, a citizen of the United States, residing in the city of Denver, in the county of Denver and State of Colorado, have invented certain new and useful Improvements in X-Ray Plate Changers, and have described the same in the following specification, illustrated by the accompanying drawings.

My invention relates to that class of X-ray plate changers of the tunnel type, socalled, which are commonly used in the practice of radiography to support the human head, or other bodily member, which is to be radiographed, and which are adapted to hold in a fixed position under that member a succession of radiographic plates, or holders of plates, during the exposure of the latter to the action of the Röntgen rays. It is the main object of my improvements, to adapt a plate changer of this class to be adjusted easily to different positions and at different angles, as may be desired, on the table or other support on which it stands; to adapt the same for mounting thereon an adjustable head clamp, or the like, without the aid of those immovable posts, or standards, on the face of the plate changer, which have heretofore been employed for that purpose; to dispense with the use of all such posts; and to utilize for the same purpose the legs on which the apparatus stands. To accomplish these objects, I incorporate in my improved plate changer, as parts thereof, a plurality of longitudinally adjustable posts which are adapted to serve not only as legs for the support of the plate changer, but also as standards for the attachment of a holder for the object which is to be radiographed.

In said drawings, illustrating the best manner in which I have contemplated applying the principles of the invention, Fig. 1 is a perspective view of a plate changer which is constructed in accordance with these principles, and which is supplied with a cassette shown in dash lines. Fig. 2 is a side elevation of the same plate changer with a head clamp mounted thereon. Fig. 3 is a detail from Fig. 2 as seen from above.

The illustrated specimen of my invention, being a plate changer of the tunnel type, is a shallow boxlike receptacle of general rectangular form, comprising the thin flat top plate 4, made of birch wood or other material pervious to X-rays, the flat rectangular metallic frame 3, peripherally encircling the plate 4, the similar bottom frame 5, and the duplicate metallic strips 6, which unite the top and bottom frames at their opposite ends respectively, and space them uniformly from each other. This receptacle has at each corner the fixed engagement block 7, having a vertical bore and provided with the setscrew 8. In the bore of each block, and within reach of this setscrew, is slidably fitted one of the four duplicate rods, or posts, 9. These are uniformly graduated with the circumferential marks 10, are preferably tipped with the rubber cushions 11, and made hollow for the sake of lightness. A head clamp, or other clamp of any common construction, denoted generally by the numeral 13, and provided with the engagement sleeves 12, may be secured to the plate changer in any desired position by adjusting selectively one of the rods 9 in one of the sleeves 12, and in one of the blocks 7, and turning the winged setscrews 8 and 14.

Operatively either some suitable plate holder or film exposure holder, not shown in the drawings, or the cassette 15, holding a sensitized sheet, which may be either glass or film, is to be inserted in the described plate changer, as often as desired, and may be fastened in its appropriate position under the pervious plate 4 by the buttons 17. By the use of the setscrew 8, applied to the rods 9, the plate changer, which is the housing of the holder 15, is set standing on the rods 9 as legs, either in the horizontal position shown in Fig. 1, or in the inclined position shown in Fig. 2, or in any other desired position, tilted endwise, sidewise or diagonally, relative to the table 16 on which it stands; and by the use of one of the setscrews 14, applied selectively to one of these rods, the head clamp is secured in any position which the exigencies of the work may require.

I claim as my invention—

1. A plate changer of the tunnel type, comprising a removable holder for a sensitized plate or film; a flat housing for the reception of the removable holder; and a plurality of parallel rods separately adjustable through the housing at right angles

therewith for its support and for engagement with a clamp above the housing.

2. A plate changer of the specified class, comprising a removable holder for a sensitized plate or film; a flat housing for the reception of the removable holder; and a plurality of parallel graduated supporting rods extending above the housing for selective engagement with an adjustable clamp, and separately adjustable by sliding through the housing at right angles therewith.

3. A plate changer of the specified class, comprising a holder for a sensitized plate or film, a housing for the holder, rods slidable up and down through the housing, a clamp having a sleeve adjustable on the rods, and setcrews for locking the rods to the housing and to the sleeve.

4. A plate changer of the specified class, comprising a flat receptacle for a holder of a plate or film, a plurality of parallel rods slidably connected with the receptacle, and means for locking the rods to the receptacle for its support in different positions and in positions to support a clamp above the receptacle.

Witness my signature at Denver, Colorado, February 11, 1922.

RAYMOND J. McKENNA.