

May 29, 1928.

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S. ISRAEL

RADIOGRAPHIC APPARATUS

Filed Aug. 1, 1927

2 Sheets-Sheet 1

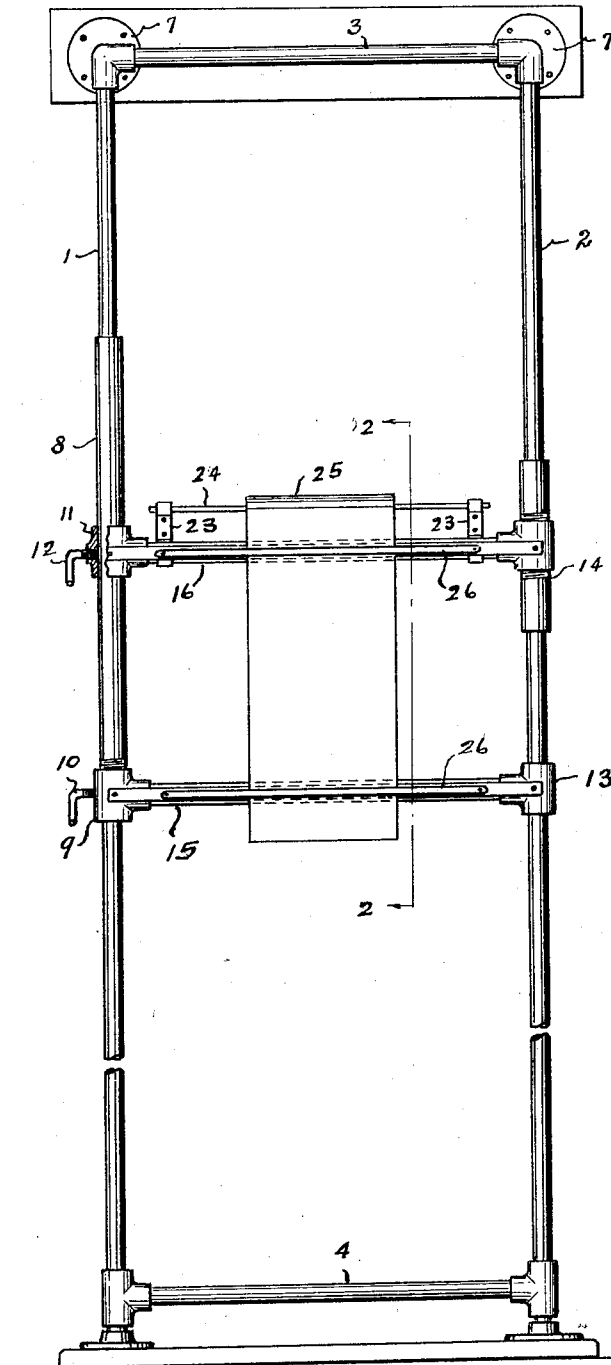


Fig. 1.

By

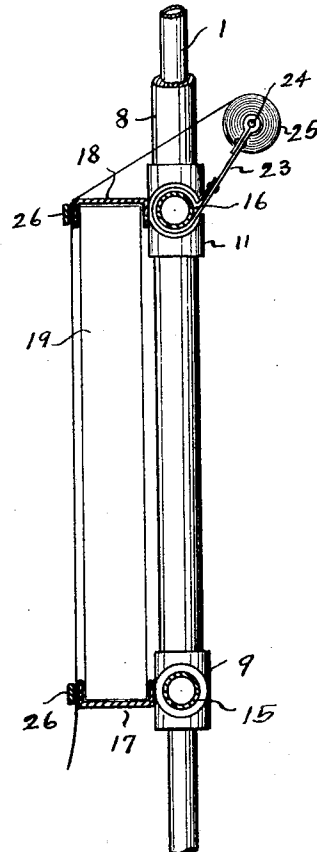


Fig. 2.

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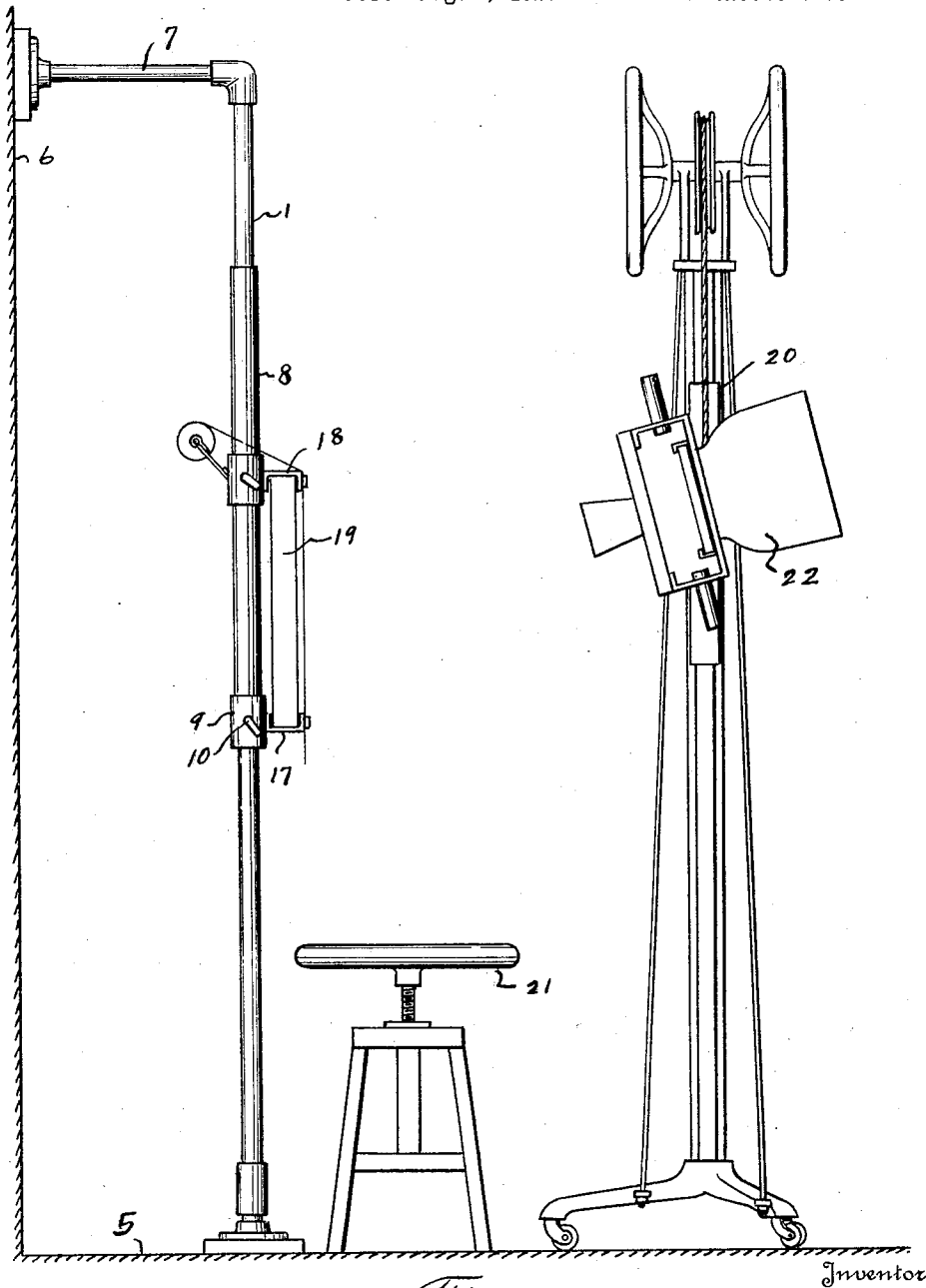


Fig. 3.

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UNITED STATES PATENT OFFICE.

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RADIOGRAPHIC APPARATUS.

Application filed August 1, 1927. Serial No. 210,001.

This invention relates to a new and useful radiographic apparatus.

One object of the invention resides in the provision of a novel type of supporting rack which includes a holder for the sensitized photographic plate whereon the picture, or radiograph is formed, in the process of radiography. The device has been particularly designed for taking radiographic pictures of the head, and the sinuses thereof and the mastoid bones.

Another object of the invention is to provide a rack of the character described, specially adapted to hold the sensitized photographic plate in the process of taking X-ray pictures, and which includes an adjustable plate holder which is adapted to receive and hold plates, or films of different dimensions and by means of which the plate held therein, may be adjusted up or down on the rack to the desired relation with the subject to be X-rayed, or photographed.

A further feature of the invention resides in the provision of a rack of the character described having a plate holder and a movable protecting shield by means of which the plate and frame holding the same, are protected from direct contact with the body of the patient for obvious sanitary purposes.

A still further feature of the invention resides in a novel combination of a radiographic apparatus, and a rack embodying an adjustable holder for the plate frame or cassette which may be adjusted vertically thereon, to the end that the desired picture may be made with the patient sitting in an upright posture rather than in a reclining position.

With the above and other objects in view this invention has particular relation to certain novel features of construction, operation and arrangement of parts, an example of which is given in this specification and illustrated in the accompanying drawings, wherein:—

Figure 1 shows a front elevation of the rack.

Figure 2 shows a fragmentary sectional view thereof, taken on the line 2—2 of Figure 1, and

Figure 3 shows a side elevation of the complete radiographic apparatus embodying the invention.

Referring now more particularly to the drawings, wherein like numerals of reference designate similar parts in each of the figures,

the numerals 1, 2 designate the upright posts of the rack which, if desired, may be formed of metal tubing, and which are connected at their upper and lower ends by the cross braces 3 and 4 which anchor said posts in fixed spaced relation. The rack frame thus provided may be secured, at its lower end, to the support 5, usually the floor of a room and at its upper end may be anchored to the wall 6 by means of suitable brackets, as 7, 7. Associated with the post 1 there is a vertically adjustable member 8, preferably an elongated sleeve which is fitted over said post and this sleeve has the tubular connection 9, fastened to the lower end thereof, and a clamp bolt 10 is threaded through said connection and its inner end is adapted to engage the post 1 to hold the sleeve 8 in any fixed position to which it may be adjusted. Slidably mounted on this sleeve there is a sleeve like connection 11 with the clamp bolt 12 threaded through it, similar to the clamp bolt 10, and whose inner end is adapted to engage the sleeve 8 to hold the connection at any desired point of adjustment on said last mentioned sleeve. Slidably mounted on the post 2 are the lower and upper sleeve like connections 13 and 14, the latter of which may, if desired, be elongated. The respective connections 9 and 13 are connected by the transverse rod 15 and the connections 11 and 14 are connected by the transverse rod 16. These rods 15 and 16 may be formed, if desired, by tubing, as shown. There are the lower and upper channels 17 and 18, secured at their respective ends, to the lower connections 9, 13 and the upper connections 11, 14, respectively with their grooves facing each other, thus forming guides for the reception of the cassette, or plate frame 19. A vertically adjustable holder is thus formed and mounted for adjustment on the posts 1 and 2. The cassette 19 may be fitted endwise into the track or guide grooves of the channels 17 and 18 and by loosening the clamp bolt 10 the holder, carrying said cassette, may be bodily adjusted up or down and then secured at the desired point of adjustment by tightening said clamp bolt. The plate frames, as 19, are of different dimensions and consequently the channel 18 may be adjusted toward or from the channel 17 by loosening the clamp bolt 12 and making the required adjustment and then tightening said clamp bolt and in this manner the holder may be adjusted to re-

ceive plate frame or cassettes of different sizes.

The numeral 20 designates a radiographic apparatus of conventional construction. It is not deemed necessary to fully illustrate or describe said radiographic apparatus for the reason that it is in common use and its construction and operation is well known to those familiar with the art.

In use the patient may sit in an upright posture on the stool 21 by the rack supporting the plate frame or cassette 19 and the plate holder then adjusted to bring the sensitized plate opposite that part of the patient to be photographed. The radiograph 20 may then be adjusted, or moved to the desired position and the tube 22 thereof adjusted so that its target, or focal point, will be located in the desired position relative to the patient and to the plate and the desired picture thus made. It is, of course, understood that the tube may be connected in circuit with any suitable form of electrical actuating device.

Anchored to and extending rearwardly from the cross rod 16 are the end brackets 23, 23 whose rear ends support the corresponding ends of the supporting rod 24 whereon may be mounted a roll of thin paper 25. The free end of the paper passes under the guide bars 26, 26, which are spaced from, but whose ends are anchored to the front edges of the respective channels 17, 18. The free end of the paper thus passes in front of the plate frame 19 and prevents the patient from coming into direct contact with said frame for obvious sanitary purposes.

At the present time, when an X-ray pic-

ture is taken of a patient with any type of apparatus, used for the purpose, now in common use, the patient usually assumes a reclining position, which is often objectionable to patients, particularly children, and it has been found much easier and more satisfactory to obtain the desired picture with the patient sitting in an upright posture, particularly when it is sought to obtain a picture of the head and its sinuses, or cavities, and the mastoid bones of a patient.

What I claim is:—

1. A device of the character described including vertically disposed posts spaced apart, a vertically adjustable bearing member associated with one post, transverse supporting members spaced apart and having end bearings on the other post, one of said supporting members being fixed to said bearing member and the other supporting member having a bearing on said bearing member.

2. A device of the character described including vertically disposed posts spaced apart, a vertically adjustable bearing member associated with one post, transverse supporting members spaced apart and having end bearings on the other post, one of said supporting members being fixed to said bearing member and the other supporting member having a bearing on said bearing member, and a shield wound into a roll carried by the upper supporting member and whose free end is disposed in front of the plate in said guides.

In testimony whereof I have signed my name to this specification.

SIDNEY ISRAEL.