

# The use of mirrors in patient and model photography

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Photography is one of the most popular hobbies of modern-day man, because it can fit into the scheme of almost any field of interest and at any economic level. To the orthodontist it can be not only an interesting hobby, but also very useful in the everyday office routine.

Patient profile and frontal views, intraoral exposures and the reproduction of records for case presentations are the most common uses in an orthodontic office. Presented here will be a technique for patient photography and another for model photography. Both methods are very simple, extremely adaptable to individual requirements and should prove useful not only in office routine, but also in institutions of teachings or research.

## PATIENT PHOTOGRAPHY

To whatever use the orthodontist puts the patient photographs, the primary necessity is a properly oriented profile view and also a frontal or full face view.

If the use of cephalometric radiographs is a common procedure in the office or institution, the orienter or headholder used in the cephalometric

technique offers an ideal instrument for photographic use. An orienter or cephalometer not being readily available, a headholder device as simple or as complex as desired can be easily constructed. Patient photographs are especially useful when a technique employing a standardized position and distance is used to make comparison easier and more reliable.

As it is usually necessary to change the position of either the patient or the camera and light source to obtain both the profile and frontal views, it would add much to the efficiency and accuracy of patient photography if this movement was eliminated. In Figure 1 is a photographic arrangement that makes use of a mirror so that the frontal and profile view are obtained at the same instant on the same negative. A hinged board with a mirror mounted on one panel is positioned into the cassette holder groove on the cephalostat, in this case a Broadbent-Bolton cephalometer. The patient is positioned between the earposts, the mirror panel adjusted and the film exposed. Care must be taken that the mirror does not cut across the profile view and that it is adjusted so as to reflect the proper frontal view.

With this technique, it is especially convenient to make an exposure with

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Figure 1

1. Mirror panel (12 x 18) is glued to the hinged board with a glass adhesive and is held at proper angle by an adjustable arm.
2. Profile background panel (16 x 18) is covered with cloth and is adjusted backward or forward by the cassette stop to which panel is attached.
3. Frontal background panel is a cloth (18 x 18) suspended from a stiff wire that is bent in a right angle and attached to wooden panel.
4. Camera is lowered to position in front of x-ray machine.

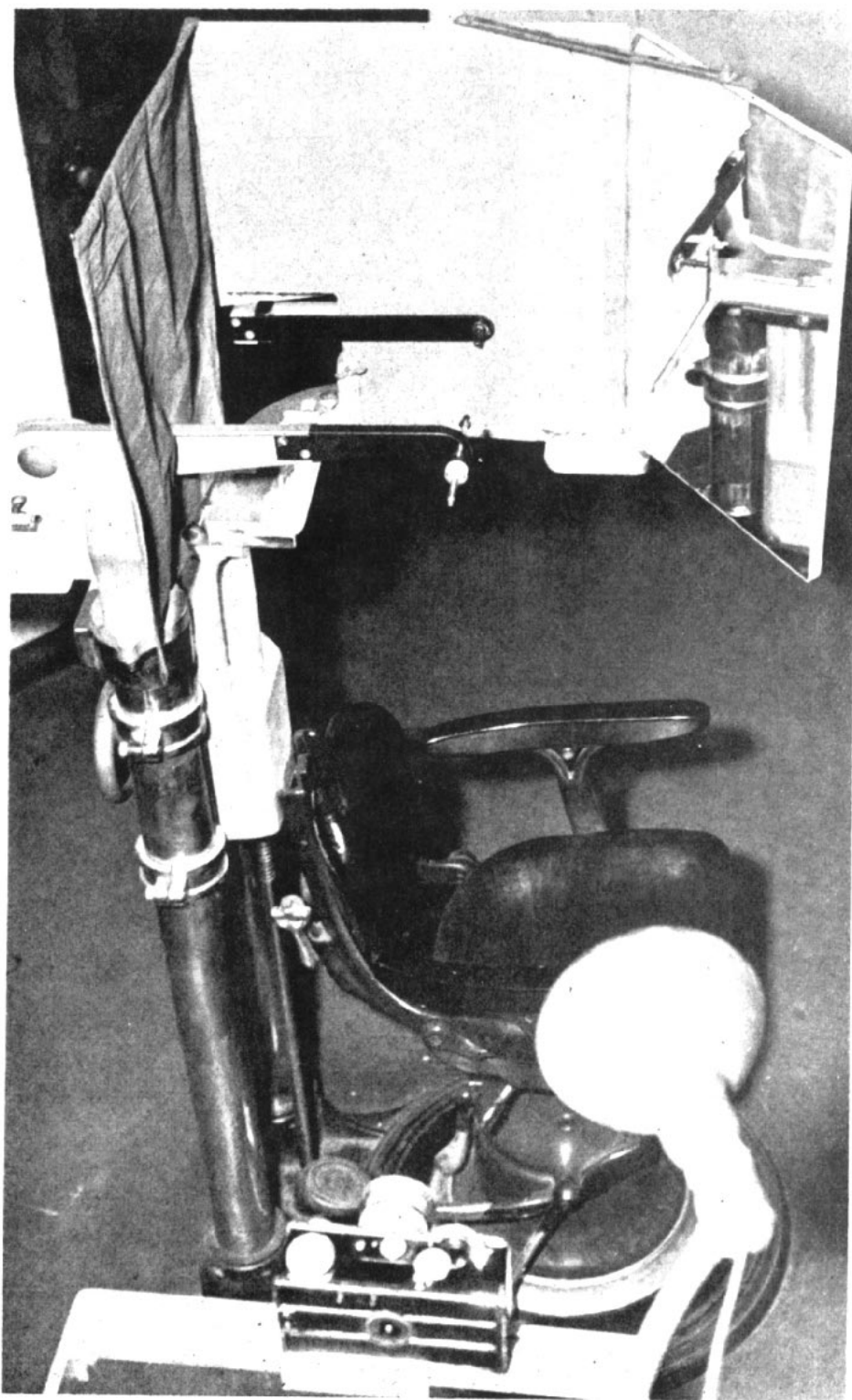




Fig. 2.—Patient with mandible in physiological rest position;  
Fig. 3—Patient with teeth in occlusion and lips together.

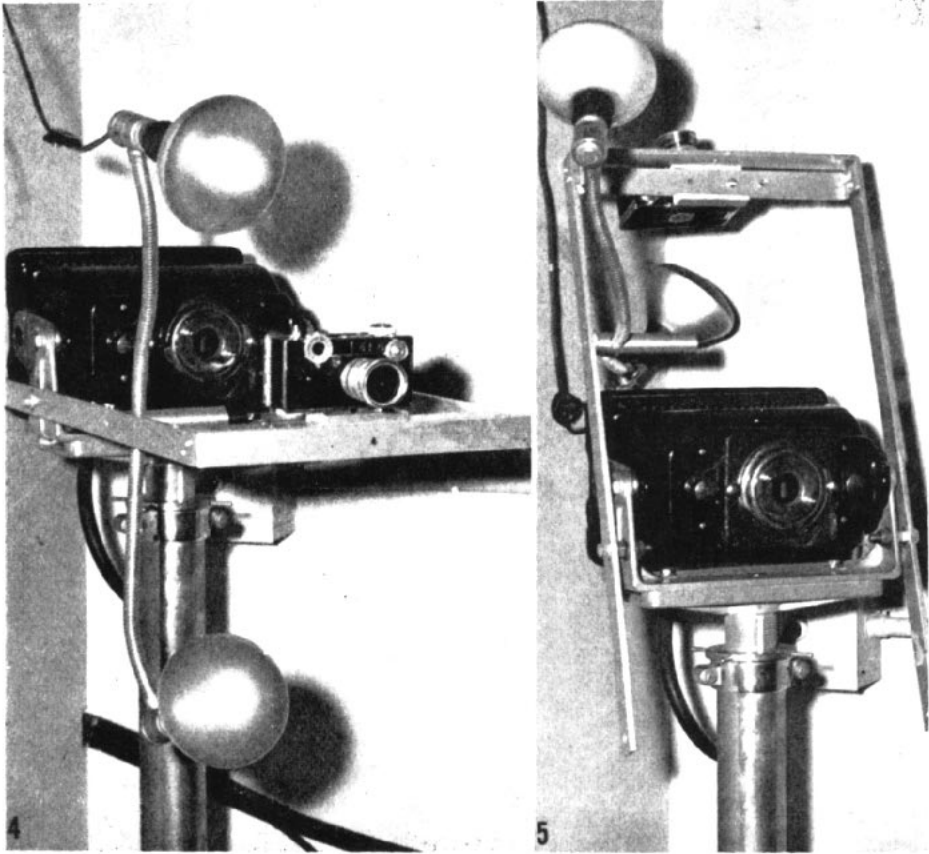


Fig. 4—35 mm. camera and lights mounted on a aluminum frame built around the x-ray head. Camera is on the path of the central ray and at a pre-focused distance from the patient.

Fig. 5—Camera and lights are swung up out of the way of the x-rays.

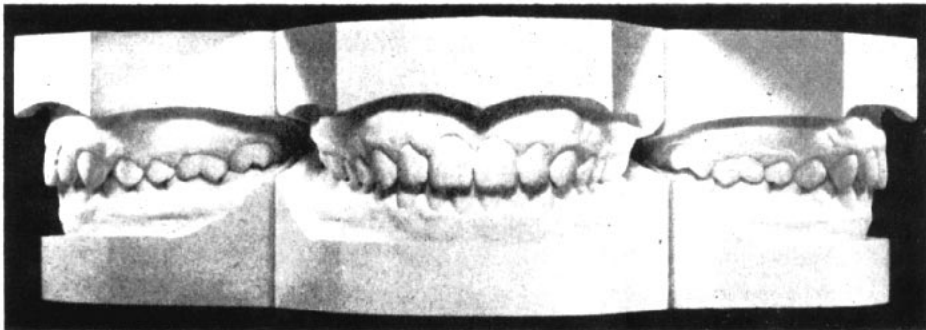


Fig. 6. Frontal, right side and left side views of a model on a single negative. Side views are images seen in mirrors.

the mandible at rest position (Figure 2) and another with the teeth in occlusion. (Figure 3). In some cases there is a considerable difference observed in the two facial photographs, a difference that calls attention to a very important item in the complete case analysis. If care is taken to position the patient with the Frankfort plane parallel to the floor, much valuable information can be gained from such oriented photographs, the interpretation of which is beyond the scope of this short paper.

Depending upon the manner in which the photographs are to be used, the head positioning device may be as complicated as the individual desires, or it can be entirely omitted and the mirror panel mounted on a stand or on a wall. The device is easily adaptable to individual requirements with the basic factor remaining that of obtaining a profile view and a frontal view at the same instant on a single negative.

The camera to be used depends entirely upon personal preference. Figure 4 shows an arrangement utilizing a 35 mm. camera. The camera is positioned on a frame built around the x-ray head used in the Broadbent-Bolton cephalometric technique. When not in use the frame is rotated upward, out of the path of the x-rays (Figure 5). The use of 35 mm. Kodachrome film is especially convenient, as it eliminates many of the processing complications and has the added advantage of full color. The exposure with two RFL number 2 lights is approximately F 10 at  $\frac{1}{4}$  second.

#### MODEL PHOTOGRAPHY

To present adequately the models of a case before and after orthodontic treatment usually requires eight separate slides. (Before and after treatment views of right side, frontal, left side and occlusal.) By the use of the tri-view method shown in Figure 6, the

number of slides could be reduced from eight to four. (A before treatment tri-view and occlusal view, and an after treatment tri-view and occlusal view.)

The technique requires the use of two mirrors and a camera with ground glass focusing. Figure 7 demonstrates the device that includes two mirrors (front surface mirrors are preferable), black paper for masking mirror, two number one photoflood lights, copying stand, and 35 mm. camera with ground glass focusing adapter.

As with the patient photographs, the camera to be used is entirely one of personal preference, but again, 35 mm. color film seems to offer the best results with the least amount of effort. It is important to adjust the mirrors until the desired views of the models appear on the ground glass, and then position the lights so that the three views are as evenly lighted as possible. The exposure with the use of a polaroid filter is approximately f. 16 at  $\frac{1}{2}$  second. As speed is not important and depth of field is very important, it is advisable to keep the diaphragm opening as small as the camera will allow.

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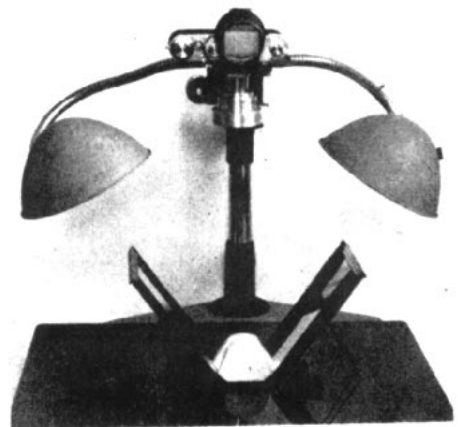


Fig. 7. Mirrors must be carefully arranged to reflect the desired views, and the lights arranged so that the image is evenly lighted. Ground glass focusing is desirable and a polaroid filter is recommended.