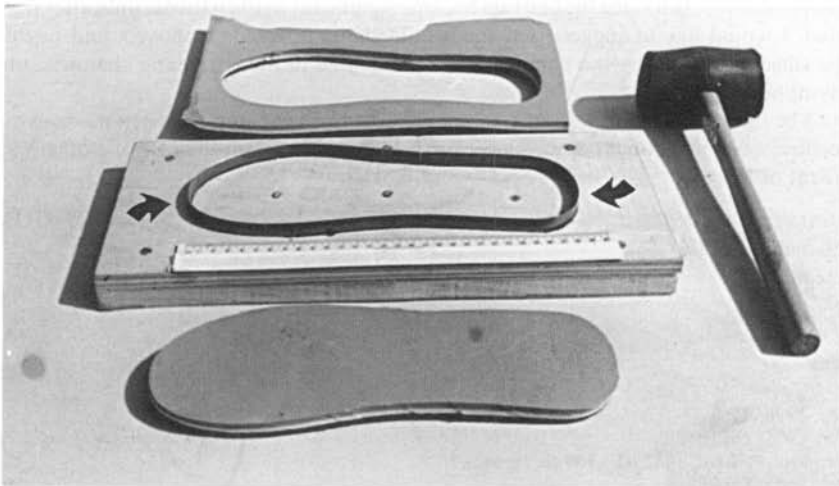


**PROTECTIVE FOOTWEAR FOR LEPROSY PATIENTS:  
A RAPID METHOD FOR THE CUTTING OUT OF SANDAL COMPONENTS**

Sir,

Egypt has a very considerable number of leprosy patients with loss of sensation on the sole of one or both feet, and we have attempted, both at the Abu Zaabel Centre outside Cairo and at the Citadel Clinic in the city, to provide suitable protective footwear. The large number of patients with severe anatomical distortion of the foot and/or ankle has, however, taken up much of our working time in recent years because of the need for individual constructed shoes or boots, but we are now increasingly interested in the provision of protective footwear for patients with loss of sensation, sometimes with small or healed ulcers, but with anatomically normal shaped feet.

Stimulated mainly by the need to save working time with our limited staff, we have devised, with the help of the Bailey Machinery Co., Louisville, Kentucky, USA, a metal 'cut-out' device for this purpose, as shown in Figure 1. It consists of a strip of high quality spring steel, 2.5 cm wide and 1 mm thick, one long edge of which is sharpened and positioned in a 'sandwich' of wood-metal-wood as a base or holding platform. The dimensions of the wood are not critical, but there should be a margin at the sides and ends of the base of about 4 cm from the metal strip. Plywood approximately 16 mm thick is preferable, if available. From the piece of wood which is to form the upper layer, a sole shape is cut out accurately from its central region and put to one side. Working with the cutting edge downwards on a wooden bench, the steel strip is then forced into the perimeter of the space, the ends being very accurately cut at right angles, so that they oppose exactly; welding is not necessary. The cut wooden centre is then forced back into its original position, thus holding the metal strip tightly. This assembly is placed over sheet metal 0.5 mm thick and these two layers are in turn fixed to a third of wood; all three are then screwed together. The material to be cut is placed over the cutting edge of the metal strip and struck with a heavy rubber hammer until the entire sole shape is cut through. This device is suitable for cutting out soles of various sizes from stiff soling material, 8-mm microcellular rubber for the upper, or 16-mm resilient microcellular rubber for the central layer of a sandal. For stiff soling material, the cutting edge of the steel strip should be set 8 mm above the wood surface, but for other materials it can be set to project up to twice this



**Figure 1.** The wooden platform or base is shown at the centre, with the sharpened steel strip *in situ* (arrowed). A typical microcellular cut-out is shown on either side of the wooden base and on the right is the heavy rubber hammer used to strike the material until the sole shape is cut through. The ruler is 30 cm in length.

height. If the material which has to be cut has a different pattern on the top and bottom side, it is first cut on one side, then turned and rotated 180 degrees for the second cut, thus producing a similar right and left sole shape from the same cutter.

The construction and assembly of this device is best carried out by a workshop supervisor, or by a patient with no sensory or motor defects in the hands, but the actual production of soles, using a heavy rubber mallet or hammer to 'bang out' the required shapes, can safely be entrusted to patients under supervision, following careful initial instruction. Everyone in the workshop should be aware that the upper edge of the strip is extremely sharp, but in the almost daily use of this device during the past year we have no problems, and it is undoubtedly safer (and much faster) than cutting out shapes with a knife.

*CARITAS-Egypt*  
*13 Dr Abdel Hamid Said Street*  
*Cairo, Egypt*

R BUTSCH