

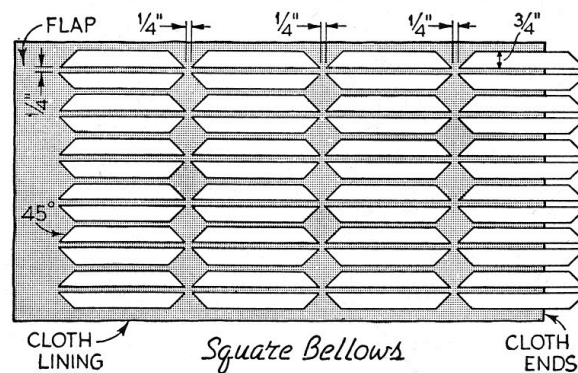
Cameras and Accessories

A CAMERA of some sort, in good working condition, is the first essential of photography. But a camera alone is not always sufficient. Countless auxiliary devices — filters, tripods, supplementary lenses — extend the abilities of the camera to an amazing degree. Construction and use of a number of such aids are described in this section.

Making Bellows for Camera or Enlarger

Bellows of leather or fabric find many uses in photography, and the builder of equipment may be faced with the problem of constructing such a device for use in a camera or enlarger, or even a folding lens shade for a large camera. The bellows may be either of square or tapering construction.

Square bellows. Obtain a piece of lightweight, black cotton cloth large enough to serve as a lining. Cut a piece of thin wrapping paper the same size, and on one side lay out a diagram like that shown in the accompanying drawing. The unshaded, tapered areas should measure, along their longest edges, the same as the desired bellows diameter. The number of areas will depend on the length of the bellows. Paste the paper and cloth together,

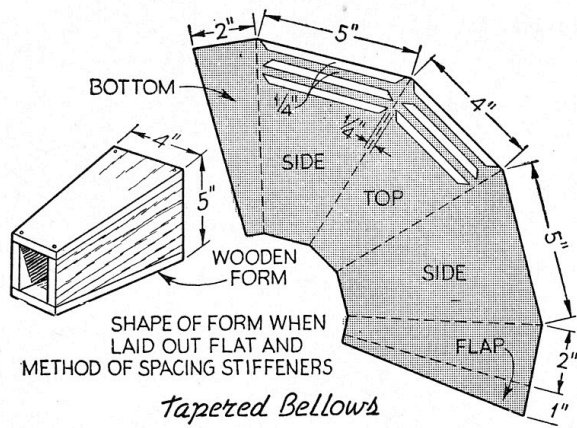


using a flexible adhesive such as rubber cement.

From thin cardboard cut segments the shape of the unshaded areas in the drawing, and paste them on the paper over the areas. Make these segments $\frac{3}{4}$ in. wide, and taper their ends to 45 deg. They are spaced $\frac{1}{4}$ in. apart at edges and ends.

For the outside cover, use thin leatherette, green shade cloth, or some other durable, non-porous material. Cement it over all but the flap, and let it dry under pressure. Here, again, good rubber cement can be used. Form all the creases along the lines between segments, then cement the flap under the projecting stiffeners, and fold the bellows up.

Tapering bellows. Make a wooden form the size of the bellows desired, as measured when it is fully extended. The form shown is for a 4- by 5-in. plate camera bellows. Lay out a fan-shaped diagram as shown, by laying the wood



form on paper, marking around the edges in contact, and then rolling it and marking each side in succession. Allow enough extra for a flap. The stiffeners are $\frac{1}{4}$ in. wide, and spaced the same as for the square bellows. Wrap the cloth lining around the form, cement the thin paper in place, and then attach the stiffeners as before. You can omit the paper, if you are careful to space the stiffeners correctly. Finally, cement the outer covering in place. When the cement is dry, slip the bellows from the form and fold it up like an accordion.

When building either type of bellows, allow enough extra material at each end for attaching it to the enlarger or camera. To fasten one end to a lens board, cut a piece of stiff cardboard to fit inside the bellows, and in it make a hole large enough to pass over the lens. Cement the cardboard to the folded-over ends of the outer cover.

If you require a bellows, visit a few second-hand shops before you tackle the job of making one. Perhaps you can pick up an old camera or even an accordion that will supply a usable bellows. If there are pinholes in the

material, they can be plugged by painting the areas with what is known as "liquid rubber," a solution of black rubber dissolved in a special solvent. Black rubber tire paint might be used with equal success. The rubber solution can be applied both inside and outside. When dry, it will prove to be a permanent means of repair.

Bellows used to be made of leather, and you may get hold of such an old-timer. Leather in time becomes dry and brittle unless supplied with oil periodically. A treatment with an oily leather dressing is advisable. You can make such a dressing by mixing 4 parts of lanolin with 6 parts of neats-foot oil. Apply it evenly, and then warm the leather in the sun or an oven, to make the dressing soak in. Most prepared shoe polishes and dressings contain oily ingredients that will prolong the life of leather, and these may be used instead.

Restoring the Finish

Scuffed leather covering on a camera can be restored by treating it with either stove-polishing liquid or black liquid shoe dressing. Apply the fluid

