

SPIRATONE
BIRDS EYE
attachment



Fig. 3

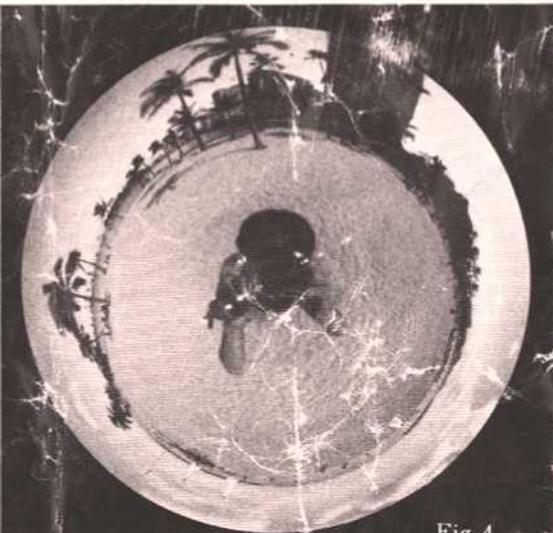


Fig. 4

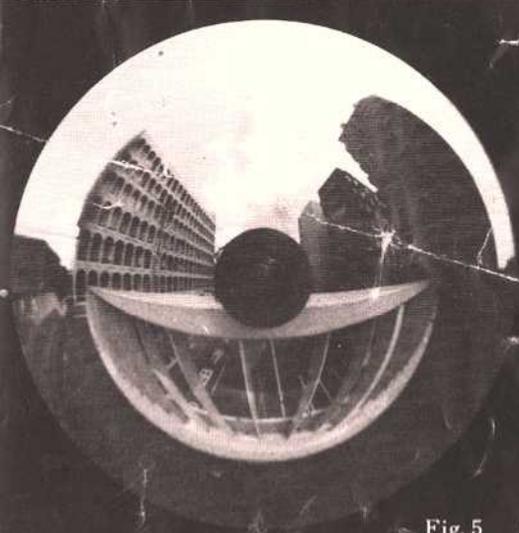


Fig. 5

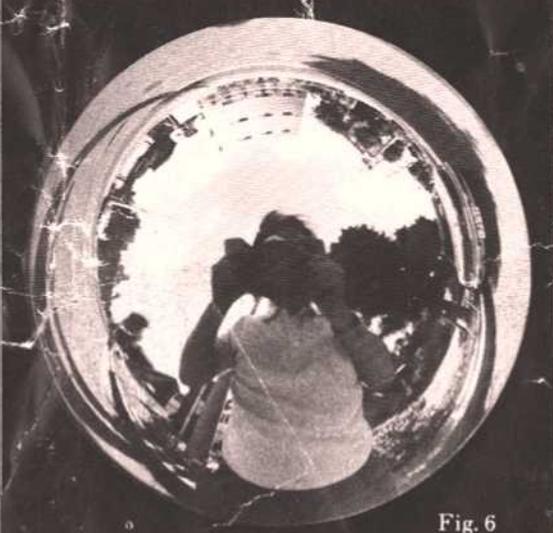
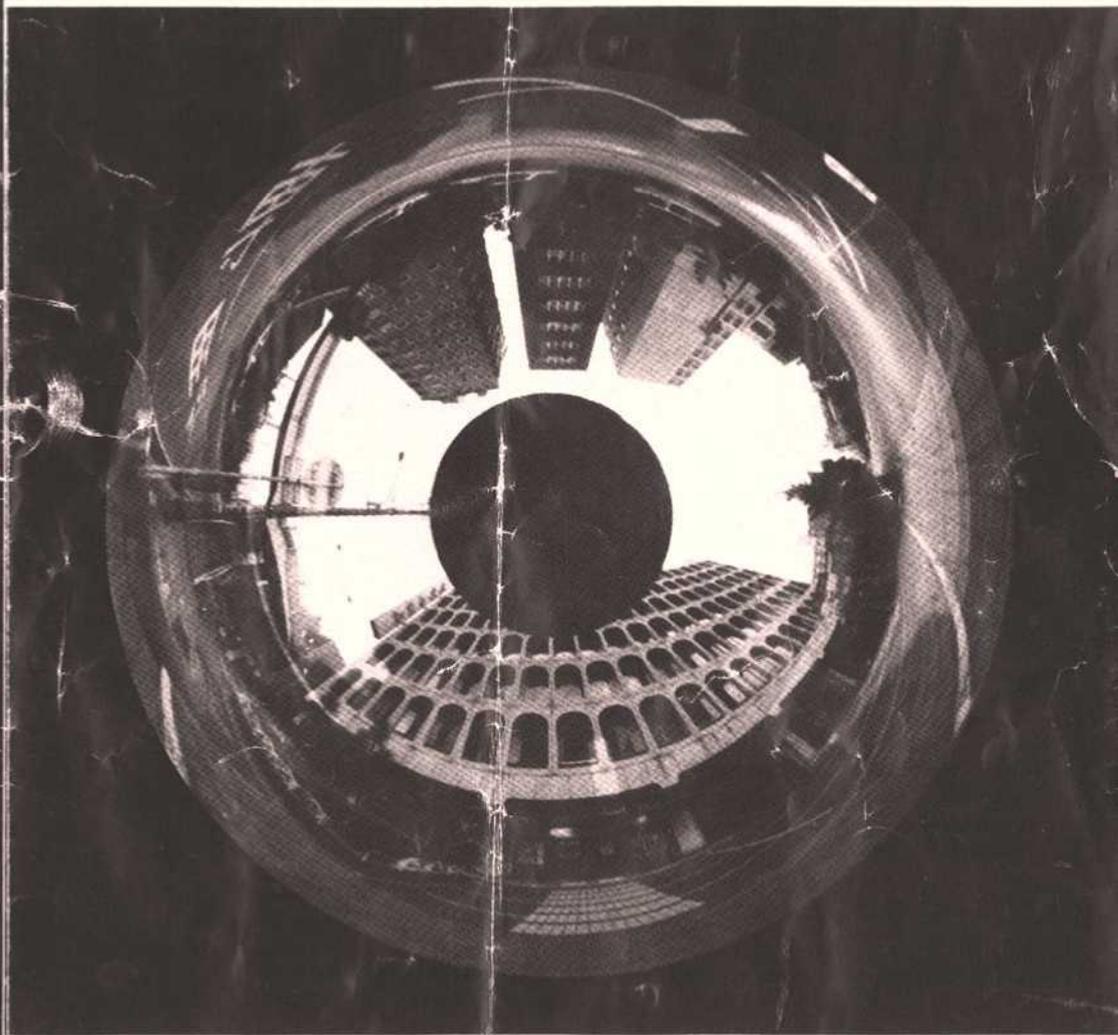


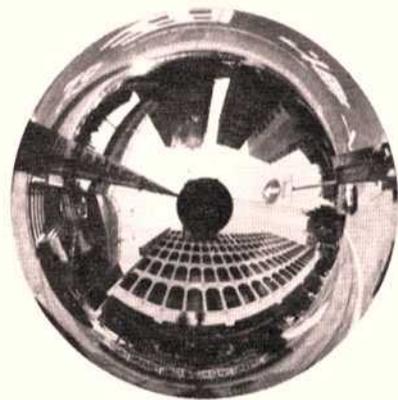
Fig. 6



SPIRATONE INC., NEW YORK

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Using the Spiratone **BIRDS EYE** ATTACHMENT



(Fig. 1)

The Spiratone BIRDS EYE attachment is a unique optical accessory with which any 35mm SLR can take photographs in a full 360° circular format and covering an angle over 210°! While many fisheye lenses produce a circular image, generally of up to 180°, the design and aspheric mirror component of the BIRDS EYE attachment yield an image of not only everything BEHIND the camera but even 30° more towards the front of the camera!

MOUNTING THE BIRDS EYE

The BIRDS EYE attachment is used in conjunction with the camera's normal lens or with a moderate wideangle lens for which a short extension tube is required; it is attached to the lens by means of a Series VII adapter ring. Simply screw the appropriate Series VII adapter onto the rear of the BIRDS EYE attachment (#1, fig.2) and then mount the assembly to your camera lens.

FOCUSING

Since the BIRDS EYE image is the reflection of the world as seen looking at the parabolic mirror element, the camera lens must be able to focus to the 3 or 4 inch distance at which the mirror is positioned. A special close focusing element is built into the BIRDS EYE attachment to permit your camera to focus this closely.

Observe the image in the camera viewfinder and adjust the lens for the best visual focus. Since you are actually focusing on the surface of the egg-shaped mirror and depth of field is very limited at such a close distance you should focus on that part of the image which is seen reflected from the middle area of the mirror (#6, fig.2). This means you are focusing near the midpoint between the apex (nearest part) of the mirror and its base. Use the smallest f stop practical (f/11, 16, 22) for the greatest depth of field, to provide maximum sharpness of the image. However, even at small openings, definition with the BIRDS EYE attachment with its 210° field coverage can not be compared with that obtainable with conventional optics.

MIRROR DISTANCE ADJUSTMENT

The mirror element is mounted on the long threaded adjusting rod (#10, fig.2) and is locked in position by the knurled lock ring (#9, fig.2). If focus can not be achieved by focusing the camera lens, the mirror position must be adjusted. To do this, loosen the knurled lock ring by unscrewing it (counter-clockwise) away from the top cover (#8, fig.2). Now turn the threaded adjusting rod itself clockwise to bring it closer to the camera lens, or counter-clockwise for greater distance from the camera lens. Once proper focus is achieved, this one-time adjustment is secured by turning the lock ring clockwise.

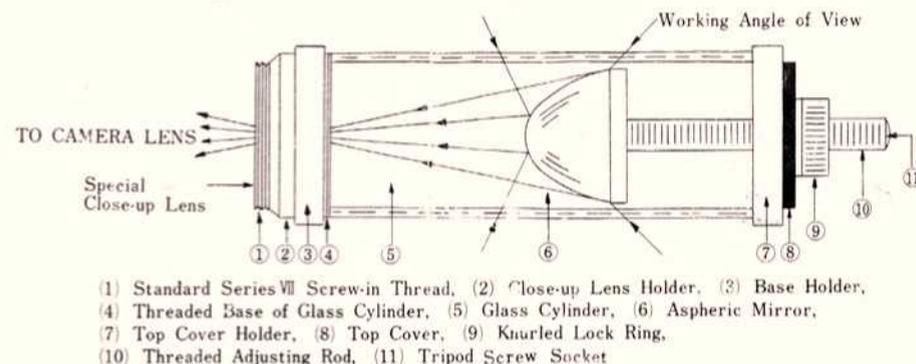
USE OF EXTENSION TUBES IN LIEU OF THE BUILT-IN CLOSE-UP LENS

The 3-4 inch close focusing requirement for your normal or moderate wideangle lens can also be achieved by substituting extension tubes for the built-in auxiliary close-up lens.

The use of tubes is preferable to obtain optimum definition. Nevertheless, the smallest possible f stop must be used.

Unscrew the close-up lens holder (#2, fig.2) and attach the appropriate Series VII adapter ring to the base holder (#3, fig.2) and mount the BIRDS EYE attachment to your

Fig. 2 Construction of BIRDS-EYE Attachment



camera lens. Mount the extension tube(s) between the camera body and lens so that, when focused, the circular BIRDS EYE image will almost fill the frame. It may be necessary to reposition the mirror element as outlined under "Mirror Distance Adjustment."

EXPOSURE

Since the BIRDS EYE encompasses the whole horizon it will see areas of extreme brightness and shade. An averaging exposure will generally be best to record the greatest range of tones. The internal averaging meter system of most cameras will automatically do this and no compensation need be made. It may be desirable, as indicated by your own experience, to vary the normal exposure and in some cases to bracket your exposures.

USE OF FILTERS

Filter can be used in the normal manner, directly on your camera lens, with the BIRDS EYE attachment mounting to the filter.

THE BIRDS EYE ATTACHMENT SPECIAL TRIPOD MOUNT

The end of the threaded adjusting rod has a tripod screw socket (#11, fig.2). This permits mounting the camera/BIRDS EYE system to a tripod (or monopod) directly via this socket rather than mounting the camera body to the tripod. With this arrangement, the tripod or monopod can be held overhead as high as possible, and, using the self-timer to trip the shutter, amazing effects with the BIRDS EYE seemingly floating in midair (fig.1) and no evidence of the photographer visible, are obtainable.

CAUTION: Mounting tripod to the socket in the adjusting rod requires extra caution. This method of mounting should be used only if no other way of mounting is possible because the camera would be supported by the Series VII ring only.

SUGGESTIONS

Because the BIRDS EYE attachment always includes the camera in the scene and is the photograph of reflection, you should experiment, holding the camera up to your eye, in the usual manner, or holding it at arm's length (or extending even further on tripod or monopod) to study the various effects possible. See figures 3, 4, 5 and 6. Since its field of view is all-encompassing, the camera/BIRDS EYE combination can be aimed readily by simply pointing in the direction desired. Most exciting full horizon pictures are achieved by pointing the camera straight up or straight down.

When printing or projecting BIRDS EYE slides, place them in the projector backwards to correct the reverse image produced by the mirror element.

Since the construction of the BIRDS EYE attachment requires the use of a clear glass tubular housing, some reflections on this housing's surface are inevitable. Observing these in the camera will permit you to slightly change your position to minimize any detrimental effect they may have.

The Spiratone BIRDS EYE attachment is another in the family of Spiratone's creative camera accessories.