

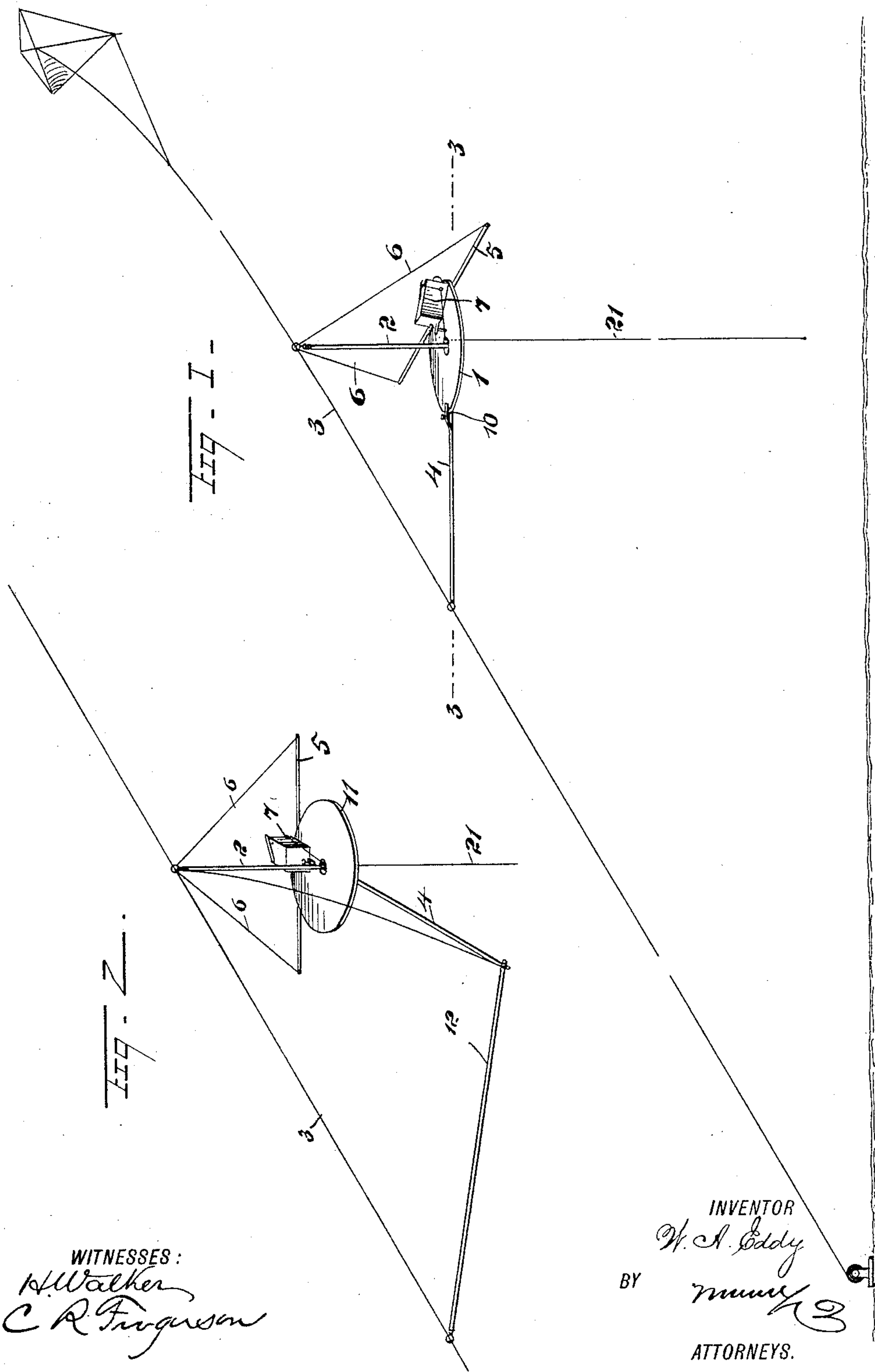
(No Model.)

2 Sheets—Sheet 1.

W. A. EDDY.
AERIAL PHOTOGRAPHIC APPARATUS.

No. 578,980.

Patented Mar. 16, 1897.



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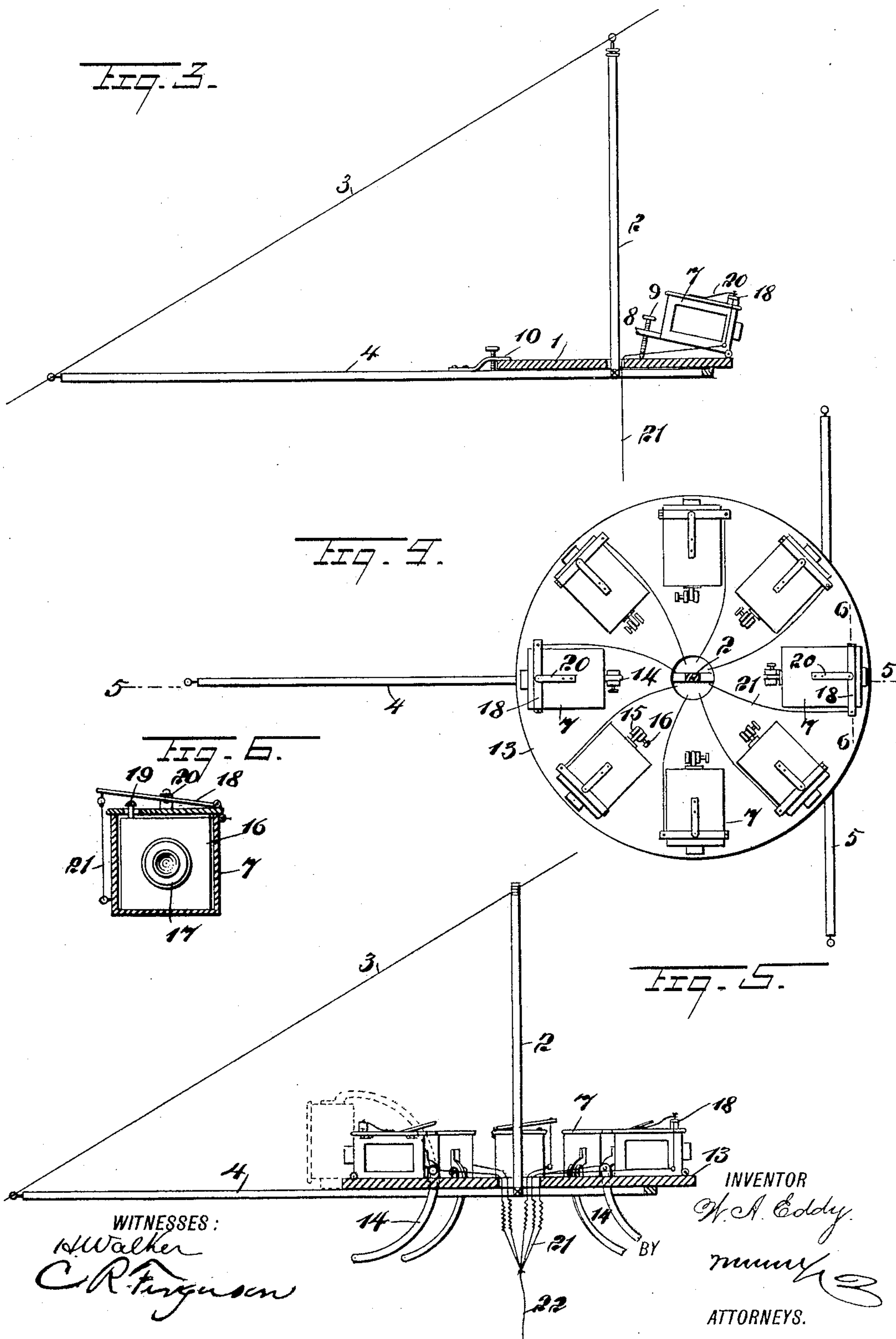
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UNITED STATES PATENT OFFICE.

WILLIAM A. EDDY, OF BAYONNE, NEW JERSEY.

AERIAL PHOTOGRAPHIC APPARATUS.

SPECIFICATION forming part of Letters Patent No. 578,980, dated March 16, 1897.

Application filed November 24, 1896. Serial No. 613,302. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM A. EDDY, of Bayonne, in the county of Hudson and State of New Jersey, have invented new and useful Improvements in Aerial Photographic Apparatus, of which the following is a full, clear, and exact description.

This invention relates to devices or apparatus designed to be secured to a kite-string and to support one or more photographic cameras, whereby negatives of the surroundings may be taken at a great altitude.

I will describe an apparatus embodying my invention, and then point out the novel features in the appended claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a perspective view of a device embodying my invention and showing the same as attached to a kite-string. Fig. 2 is a perspective view of a device of somewhat modified construction. Fig. 3 is a section through the line 3 3 of Fig. 1 and drawn on an enlarged scale. Fig. 4 is a plan view showing another modification. Fig. 5 is a section through the line 5 5 of Fig. 4; and Fig. 6 is a section on the line 6 6 of Fig. 4, showing a camera-holder employed.

Referring first to the example of my improvement shown in Figs. 1 and 3, 1 designates a platform mounted to rotate on the lower end of a hanger 2, the upper end of which is designed for connection with the kite-string 3. From the lower end of the hanger 2 and below the platform 1 a boom 4 extends at right angles and has its end connected to the kite-string. This boom 4 extends forward underneath the platform 1, and to its forward end is attached a cross-bar 5, from the ends of which brace-cords 6 extend upward to a connection with the upper end of the hanger 2.

Mounted on the platform 1 is a camera-holder 7. As here shown, this camera-holder has a hinge connection at its front end with the platform 1, and at its rear end it is provided with a lug 8, having a screw-threaded aperture through which an adjusting-screw 9 may pass and impinge upon the platform. Obviously by means of this screw 9 any de-

sired angle may be given to the camera-holder. The platform 1 may be rotated to face the camera in any desired direction and held as adjusted by means of a screw-operated clamp 10 on the boom 4. Of course this adjustment will be made before the kite is set free.

In the example shown in Fig. 2 the platform 11 is rigidly attached to the boom 4, but to hold said platform in a desired position for pointing the camera I employ a brace-bar 12, attached at one end to the end of the boom and at the other end to the kite-string 3.

The devices as so far described are intended to support one camera only. In Figs. 4 and 5, however, I have shown a series of camera-holders mounted on a single platform, and of course variously pointed. In this example the platform 13 is rigidly mounted on the boom 4, and the several camera-holders 7 are pivoted at their front ends to said platform. Pivotaly connected to the rear end of each camera-holder is a curved bar 14, projected through an opening in the platform and movable between cheek-pieces 15, through a tapped hole in one of which a set-screw 16 extends and is designed to impinge upon the curved bar 14 to hold the camera-holder as adjusted. By this arrangement the camera-holders may be so adjusted as to point a camera directly downward, as indicated in dotted lines in Fig. 5. The camera-holder is of a box-like construction and of a size to snugly receive the camera 16. The front of the holder 7 has an opening through which the lens-tube 17 may project.

The means here shown for operating the camera-shutter button consists of an arm 18, hinged at one end to the top of the camera-holder and extended across said holder and over the shutter-operating button 19, extended upward through an opening in the top of the holder. The arm 18 is held normally out of engagement with the button 19 by means of a spring 20, secured at one end to the top of the holder 7 and at the other end connected with the arm. From the free end of the arm 18 a pull-string 21 extends downward through a central opening in the platform. Of course this string 21 will be of sufficient length to reach the ground, either directly under the device or to the point occupied by the person operating the kite. Of

course where there are a series of camera-holders on a platform the several strings 21 extended therefrom will be connected together and attached to a single cord or string 22.

In operation, when a kite shall have reached the desired elevation, by drawing downward on the pull-string 21 the shutter of the camera will be operated so as to make the exposure, and obviously with the device shown in Fig. 4 the several camera-shutters will be simultaneously operated. It will be seen that this arrangement will be of great utility in taking pictures of the surrounding territory, and it may also be used on shipboard for locating vessels beyond the horizon or that cannot be seen from the deck of a vessel or from its lookout.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. In aerial photography, the combination with a kite and kite-string, of a photographic camera supported by the string below the kite, and means for holding the camera to point in any desired direction relatively to the sailing direction of the kite, substantially as specified.

2. The combination with a kite and kite-string, of a hanger depending from the kite-string, a boom extended from the lower portion of said hanger to the kite-string, a platform supported by the hanger, and means for supporting a camera on the platform, substantially as specified.

3. An aerial photographic apparatus, comprising a hanger adapted to be secured to a kite-string, a boom extended from said hanger and adapted for connection to a kite-string, a platform mounted to rotate relatively to the hanger, means for securing the platform as adjusted, and a camera held adjustably mounted on the platform, substantially as specified.

4. An aerial photographic apparatus, comprising a hanger adapted for connection with a kite-string, a boom extended from the lower portion of said hanger and adapted for connection with a kite-string, a platform supported by the hanger, a camera-holder mounted on said platform, and means for operating

the shutter of a camera in the holder, substantially as specified.

5. An aerial photographic apparatus, comprising a hanger adapted to be attached to a kite-string, a boom extended from the lower portion of said hanger and adapted for connection with the kite-string, a platform supported by said hanger, a camera-holder of box-like construction having a hinge connection at its front end with the platform, means for vertically adjusting the rear end of the holder, and means for operating the shutter of a camera in the holder, substantially as specified.

6. An aerial photographic apparatus, comprising a hanger adapted for connection with a kite-string, a boom extended from the lower end of said hanger and adapted for connection with the kite-string, a platform supported by the hanger, a camera-holder of box-like construction having hinge connection with the platform, means for elevating the rear end of the camera-holder, a hinged arm extended over said camera-holder and adapted to engage the shutter-operating button of a camera in the holder, and a string extended from said arm, substantially as specified.

7. An aerial photographic apparatus, comprising a hanger adapted for engagement with a kite-string, a platform supported by said hanger, a series of camera-holders mounted on said platform and pointed in various directions, and means for simultaneously operating the shutters of the cameras in the several holders, substantially as specified.

8. An aerial photographic apparatus, comprising a hanger adapted to be secured to a kite-string, a boom extended from the lower end of said hanger and adapted for connection with the kite-string, a cross-bar on the front end of said boom, braces extended from the ends of said cross-bar to a connection with the hanger, a platform supported by the hanger, and a camera-holder on the said platform, substantially as specified.

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Witnesses:

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