(No Model.)

G. W. MELVILLE.

ARTIFICIAL HORIZON.

No. 294,653. Patented Mar. 4, 1884.

Fig. 1.

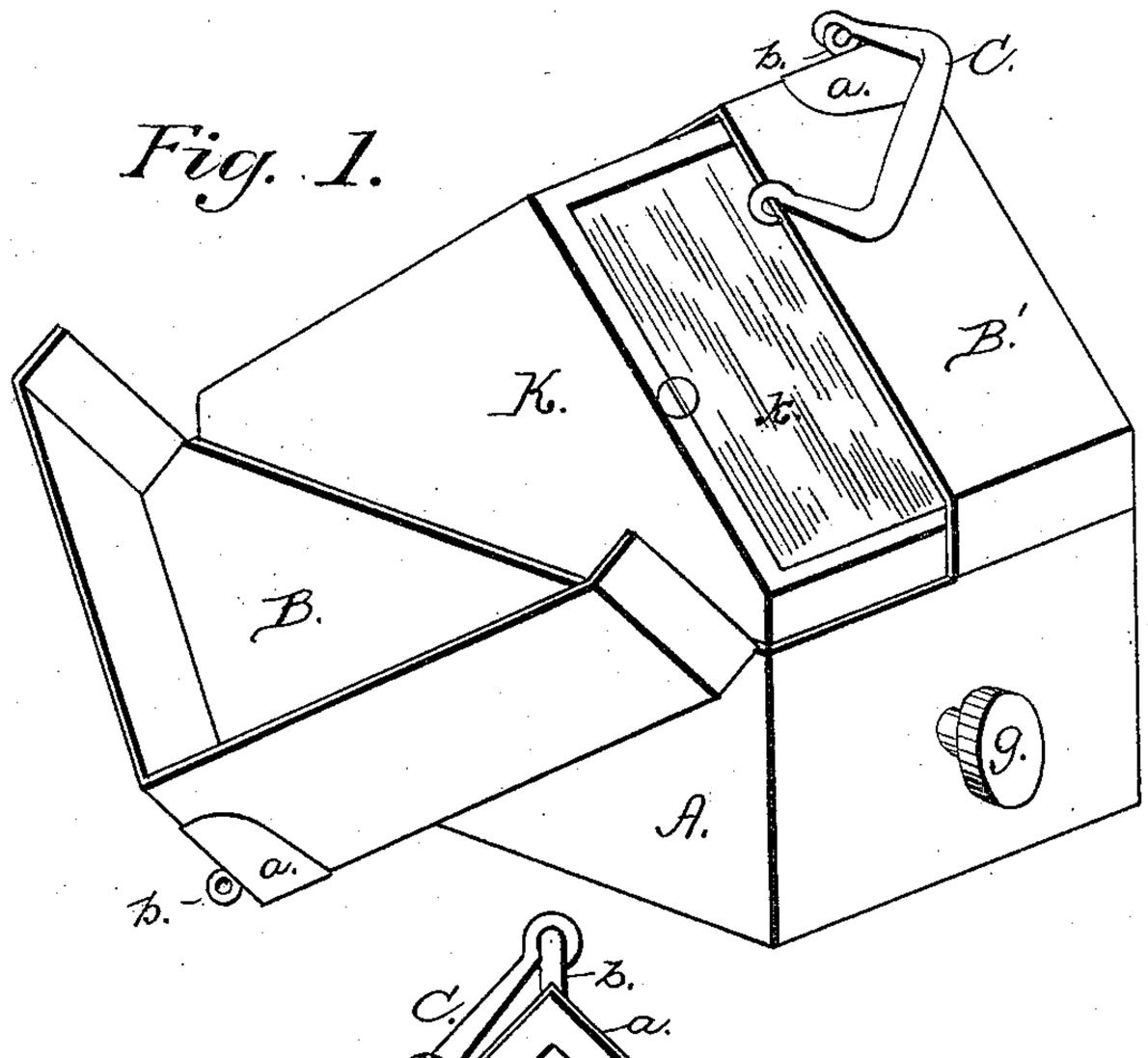
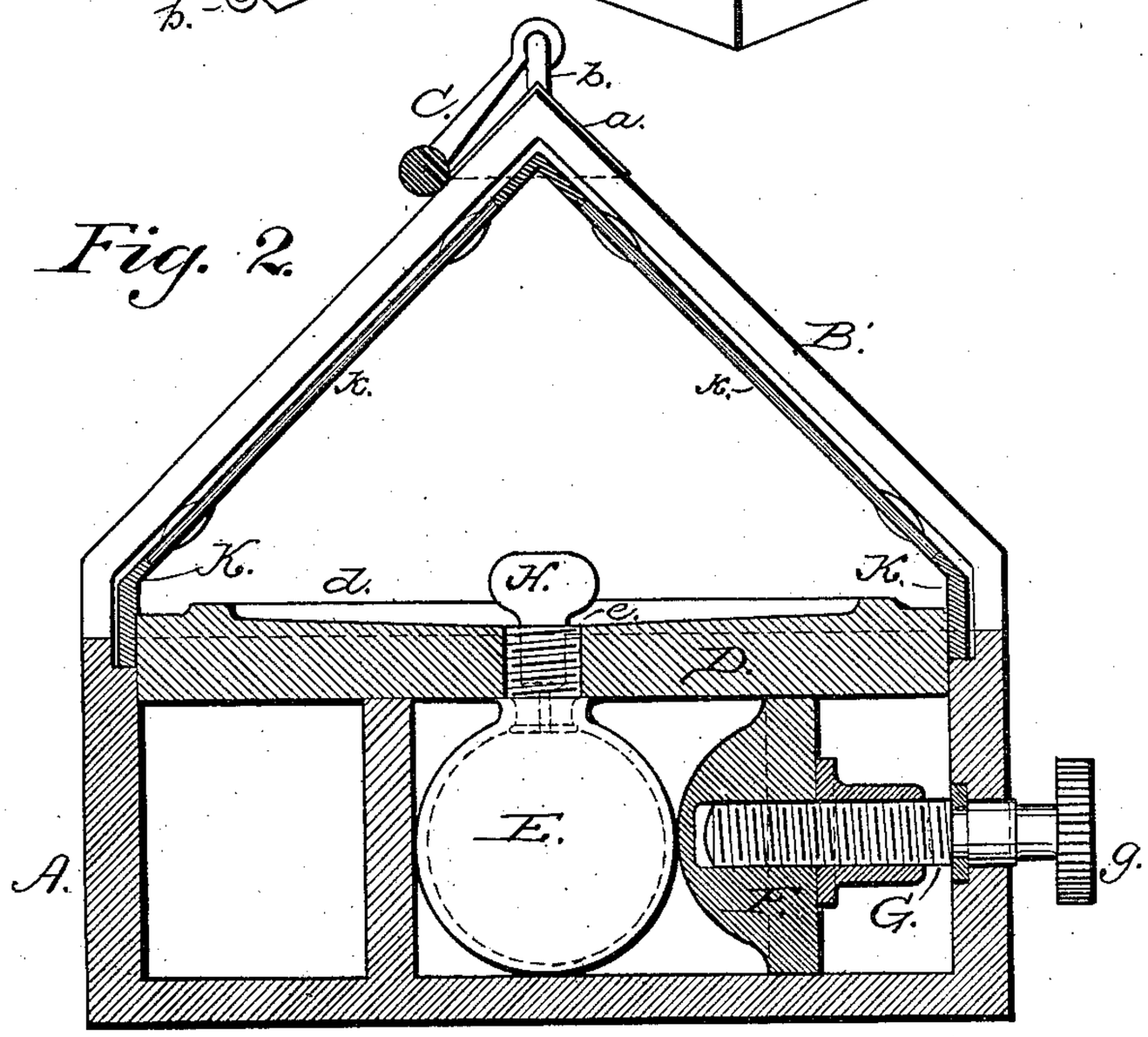


Fig. 2.



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ARTIFICIAL HORIZON.

SPECIFICATION forming part of Letters Patent No. 294,653, dated March 4, 1884.

Application filed January 29, 1884. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. MELVILLE, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Artificial Horizons; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

My invention relates to improvements in artificial horizons, having for its object to facilitate and assist the measuring of the altitude of the celestial bodies; and it consists, essentially, of an ornamental box or receptacle provided with a bag of mercury, and a compression-screw and slide which is adapted to compress the bag containing the mercury and force a portion of its contents into an upper reservoir or receptacle of novel construction, which is provided with an inclosing glass frame, to prevent the surface of the mercury from being disturbed by currents of air, all as will be hereinafter more fully described, and specifically designated in the claim.

In the accompanying drawings, Figure 1 represents a perspective view of my complete invention, and Fig. 2 a vertical longitudinal section thereof.

Similar letters of reference indicate like parts in both figures.

In carrying out my invention the box or receptacle A is preferably of a rectangular shape, and provided with a lid or cover of pyramidic form, which is composed of two hinged sections, B B′, which abut against each other when closed. At the upper and outer end of each of the sections B B′ is provided an overlapping metallic shield or plate, *a*, having an upwardly-projecting ring, *b*, as shown, the one end of a suitable handle, C, being securely attached to one of the said rings on one section, while the opposite end of the handle is provided with an open loop or hook to adjust in the ring upon the opposite section, to hold the two sections together when closed, as also to afford a convenient means for carrying the complete apparatus.

In the upper part of the box or receptacle A is adjusted a block or plate, D, having a cup-shaped cavity or reservoir, *d*, upon its upper surface, and is provided with a central hole or opening, *e*, in which is fitted a screw-threaded tube, the lower end of which projects below the bottom of the block or plate D, and around which the mouth of the rubber or leather bag E, containing the mercury, is securely fitted.

Beneath the block or plate D, and at one end of the box or receptacle A, is arranged a slide, F, which is adapted to be moved by the compression-screw G, which is journaled in one end of the box or receptacle A, and provided with a milled disk or thumb-piece, *g*, upon the outer end thereof, as shown. A screw-plug, H, is adapted to fit within the central opening, *e*, to prevent the escape of the mercury when the apparatus is not in use. Above the block or plate D, and fitting within a recess or groove around the same, is provided a removable metallic frame, K, of a shape corresponding to that of the lid or cover, and which is provided upon its two sloping sides with glass panels *k*, as shown.

The construction of my invention being as described, it will be observed that in the operation of the same the double lid or cover is thrown open, the glass frame K lifted off, and the screw-plug H removed. The glass frame K is then adjusted in its former position, and the compression-screw G, being turned in a given direction, causes the slide F to move forward and compress the bag E, thereby discharging the mercury contained therein up through the central opening, *e*, into the cup-shaped cavity or reservoir *d* upon the upper surface of the block or plate D, to form a mirror for the measurement of the altitude of the celestial bodies, in the usual manner, the glass frame K preventing the disturbance of the surface of the mercury by currents of air. After the apparatus has been used for the purpose stated, the compression-screw is turned in the opposite direction, causing the slide F to recede from the bag E and allow the mercury to return to the same through the

central opening, *c*. The screw-plug H may then be adjusted in place and the apparatus be closed for future use.

Having thus described my invention, what I claim as new and useful is—

An artificial horizon consisting of a suitable box or receptacle, A, provided with a bag of mercury, a plate having a reservoir upon its upper surface, and a central opening communicating with said bag containing the mercury, a compression-screw and slide, glass frame K, and screw-plug H, all substantially as and for the purpose specified.

In testimony whereof I affix my signature in presence of two witnesses.

GEORGE W. MELVILLE.

Witnesses:
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