Van Bunschoten, Woodbridge & Mann,

Daguerreotype Apparatus.

No. 6,357. Fig. 2. Patented Apr. 17, 1849.

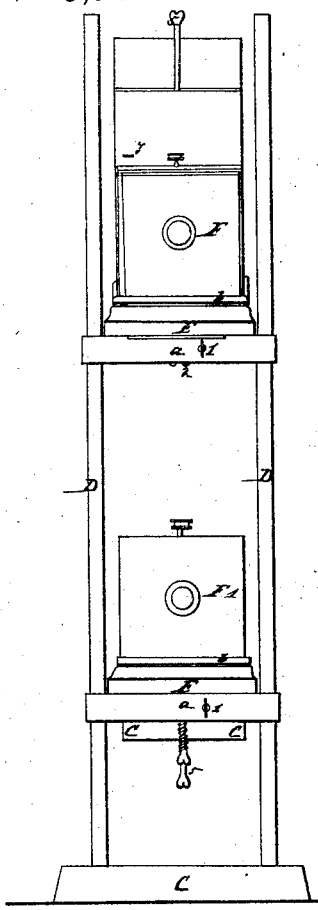

Fig. 1.

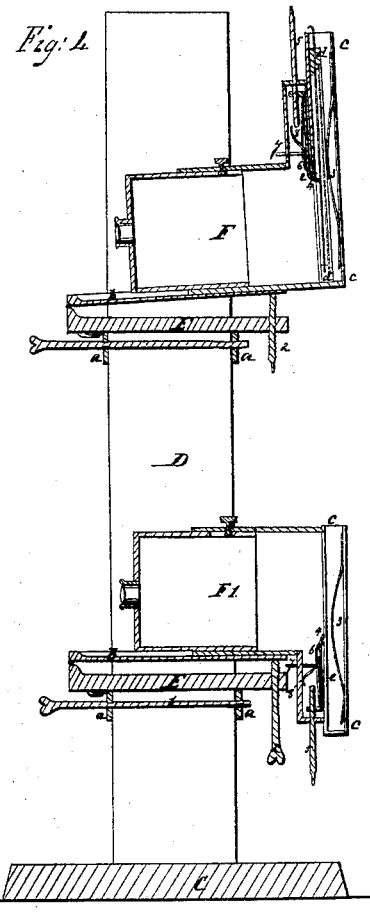

Fig. 3.

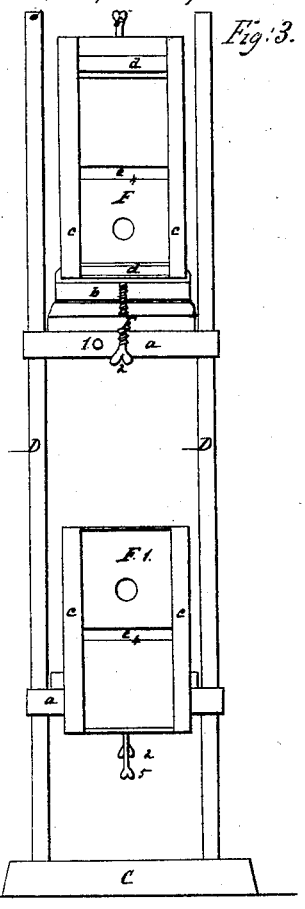

Fig. 4.

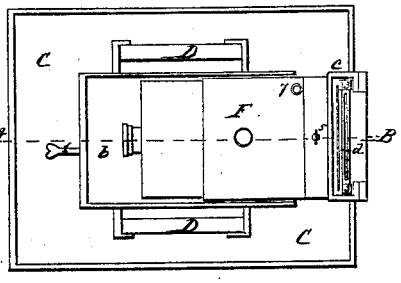

Fig. 6.

Fig. 5.

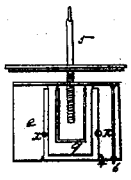

Fig. 7.

Witnesses:

W. S. Sewell

Samuel W. Dr

Inventors:

Isaac Van Bunschoten

John J. Woodbridge

William C. Mann

UNITED STATES PATENT OFFICE.

ISAAC VAN BUNSCHOTEN, JOHN J. WOODBRIDGE, AND WILLIAM E. MANN, OF NEW YORK, N. Y.; SAID VAN BUNSCHOTEN, WOODBRIDGE, AND MANN ASSIGNORS TO SAID ISAAC VAN BUNSCHOTEN.

IMPROVEMENT IN DAGUERREOTYPE APPARATUS FOR PANORAMIC VIEWS.

Specification forming part of Letters Patent No. **6,357**, dated April 17, 1849.

To all whom it may concern:

Be it known that we, ISAAC VAN BUNSCHOTEN and JOHN J. WOODBRIDGE, daguerreotypists, and WILLIAM E. MANN, tinman, all of the city of New York, have invented and made and applied to use certain new and useful Improvements in the Application of Mechanical Means to the Camera Used with the Daguerreotype Apparatus, such improvements effecting the taking representations of figures, buildings, scenery, or other objects of any kind in successive parts, each of which parts matches the precedent part on one plate, thereby avoiding distortion or disproportion of the parts (now caused in plates of more than certain sizes) by the divergent rays of the reflected light as they spread on the surface of the plate itself and place portions of the objects represented either out of their true shape or proportionate position or show them with a blurred or faulty appearance; that our said improvements furnish means to use several cameras in succession or one in a variety of elevations, so as to take a representation of a whole figure, building, scenery, or other object by means for which we seek Letters Patent of the United States to be issued to the said ISAAC VAN BUNSCHOTEN, as the assignee of us, the said ISAAC VAN BUNSCHOTEN, JOHN J. WOODBRIDGE, and WILLIAM E. MANN, and that the said improvements are collectively, constructively, operatively, and substantially set forth and shown in the following description and in the drawings annexed to and making part of this specification of our said improvements, wherein—

Figure 1 is a plan. Fig. 2 is an elevation of the front or that part where the camera-lenses are placed. Fig. 3 is an elevation of the back of these parts, wherein the plates are adjusted for the required reflection to be received on them; and Fig. 4 is a sectional elevation taken through the line A B of Fig. 1.

The detached figures are separately referred to, and the same letters and numbers as marks of reference apply throughout to the like parts in all the several figures.

In these C is a pedestal for two standards D D, which are made of a sufficient height to receive between them two or more carriages E E. These are fixed on slide-clamps *a a*, having returned ends at the angles of the standards, and a screw 1 taking from one clamp through the other to adjust them at any required vertical position. A hinge at the front end of each carriage sustains that end of the platens *b b*, and a screw 2, acting through the carriage E, adjusts the platens *b b* to any proper angle for the proper use of the camera-boxes F F′. The fronts of these cameras are made as is now usual. The backs have slides *c* to receive a slide-frame *d*, whose length must be more in proportion to the width than is now commonly used, but, as a general rule, equal to all the collective height of all the camera-boxes intended to be used—that is, if two cameras are to be used, the slides *c* and frame *d* are to be twice as long as one box. If three cameras are used, the length of the slide and frame is to be equal to three heights of boxes and a like increase of length for each additional camera-box, as the frame *d* carries the usual intermediate slide between the object and the daguerreotype-plate and is intended to receive in a rabbet a plate of sufficient length to receive impressions in successive sections from each camera used in any given operation and be kept in place by springs 3 within the slide *c*, as shown in the sectional elevation, Fig. 4. In this mode of arranging the camera-boxes the attached slides for the daguerreotype-plate in the upper box F are made of an extra length upward above the box to pass the plate in, so that the upper portion of the object to be represented is reflected on some given extent of the lowest portion of the plate. Below this box F a camera-box, fitted either in the ordinary manner or with slides extending both above and below the camera-box, may be used to reflect the middle portion of the object on the corresponding part of the plate; but whether this be so done or not the box F′ is made with the attached slides *c* and springs 3 prolonged downward below the camera-box proper, so that the opposite end of the plate to that used in the box F can be put in to take the reflection of the lower part of the object in front of the camera.

To effect the "matching" of the successive reflected parts the clamps *a a* and screws 1 enable the operator to adjust the heights of

the carriages E, and the screws 2 and platens *b* serve to adjust the cameras on them at the proper horizontal angle to effect the operations intended.

To prevent the effect of any stray reflection upon the parts not intended to be first operated on, and also to prevent more reflection upon the parts of the representation already executed, there is placed behind the fixed and extra length of each back plate of the slides *c* a slide-plate *e*. The end of this at the opening into the camera-box is made as a lip 4, that lies against and barely touching the slide-plate in the frame *d*, as seen best in Fig. 4, and the top or bottom of the box in which this slide-plate *e* moves is fitted to pass a screw 5 into a nut on the slide *e* to fix it accurately at the intended junction of the matching reflected parts on the plate in use, so as to cut off the light from the other part of the plate.

On the back of the slide-plate *e* a set-spring 8, operating against the back side of the box, forces the front of the plate *e* against the fixed upper back plate of the slides *c*, so as to retain the plate *e* at the proper position in that direction, and on the back of the slide-plate *e*, at one or both sides, a small vertical spring 6 is so attached that the point turning under the plate at one or both lower corners comes out at either or each end of the lip to serve as a gage-point, entering ratchet-notches on the frame *d*, that carries the daguerreotype-plate. This furnishes an auxiliary or secondary means for adjusting the daguerreotype-plate, so that the successive reflections shall accurately match together. A small hook 7, lying behind the ratchet-spring 6, gives the means of drawing back the spring to move and adjust the frame *d*.

A variation in the mode of fitting the plate *e* is shown in the detached Figs. 5, 6, and 7. In these Fig. 5 is a back elevation, Fig. 6 is an end elevation on that side of Fig. 5, and Fig. 7 is an opposite end elevation. *e* is the plate and 4 the lip, as in the former description; but instead of being made solid as a part of the plate, as shown in Figs. 3 and 4, the lip is made narrower and may be varied in width to suit the object operated on, and is movable in a recess on the under edge of the plate *e*, with arms, one on each side the screw 5, and a notch on the outer side of each arm, taking a guide-stud *x* in each notch, and a two-part keeper-spring 9, with the lower end against the movable lip to keep that in place, so that it projects out toward the intermediate slide in the frame *d*. The points of the ratchet-springs 6, as in the former figures, set into notches on the face of the frame *d*, as before described, and the effects of these parts and the present-described variation are that when the operator is adjusting the machine by the focus-glass in the usual way the lip 4 in both cases projects to cut off any upward or downward action of the reflected light, and when the machine is properly adjusted the focus-glass is withdrawn and the frame *d* put in place, with the daguerreotype-plate behind the slide-plate, as usual. The top is then closed to shut off any light but that coming through the object-glass of the camera and the slide in the frame *d* withdrawn. The daguerreotype-plate then takes so much of the object to be represented as this part of the machine is adjusted for, after which the daguerreotype-plate is withdrawn and placed successively into the next or more camera boxes, to receive in successive sections the remaining parts of the objects to be represented.

We do not claim increasing the number of cameras as an invention; and we do not claim to have invented any of the parts described or used herein, irrespective of the particular manner in which we have so used them for these purposes, as all such parts taken separately are well known; but

We do claim as new and of our own invention, and desire to secure by Letters Patent of the United States—

The application of the lengthened slides *c c* either to act in opposite directions on one camera-box or on a plurality of camera-boxes for the purpose of taking daguerreotype representations in successive parts or sections, and effecting the junction or matching of successive sections by combining with the foregoing parts the adjustable lip 4 for the purpose of shutting off any stray reflections from the parts already operated on while the next successive part is operated on, or of shutting off the stray reflections at the commencement from that part of the daguerreotype-plate that is to be operated on after the first portion, substantially in the manner and for the purposes described and shown.

In witness whereof the parties to these presents have hereunto set their signatures this 30th day of June, in the year 1848.

ISAAC VAN BUNSCHOTEN.
JOHN J. WOODBRIDGE.
WILLIAM E. MANN.

Witnesses:
WM. SERRELL,
LEMUEL W. SERRELL.