(No Model.)

W. H. LEWIS.

COMBINED STEREOSCOPE AND GRAPHOSCOPE.

No. 265,110. Patented Sept. 26, 1882.

Fig. 1.

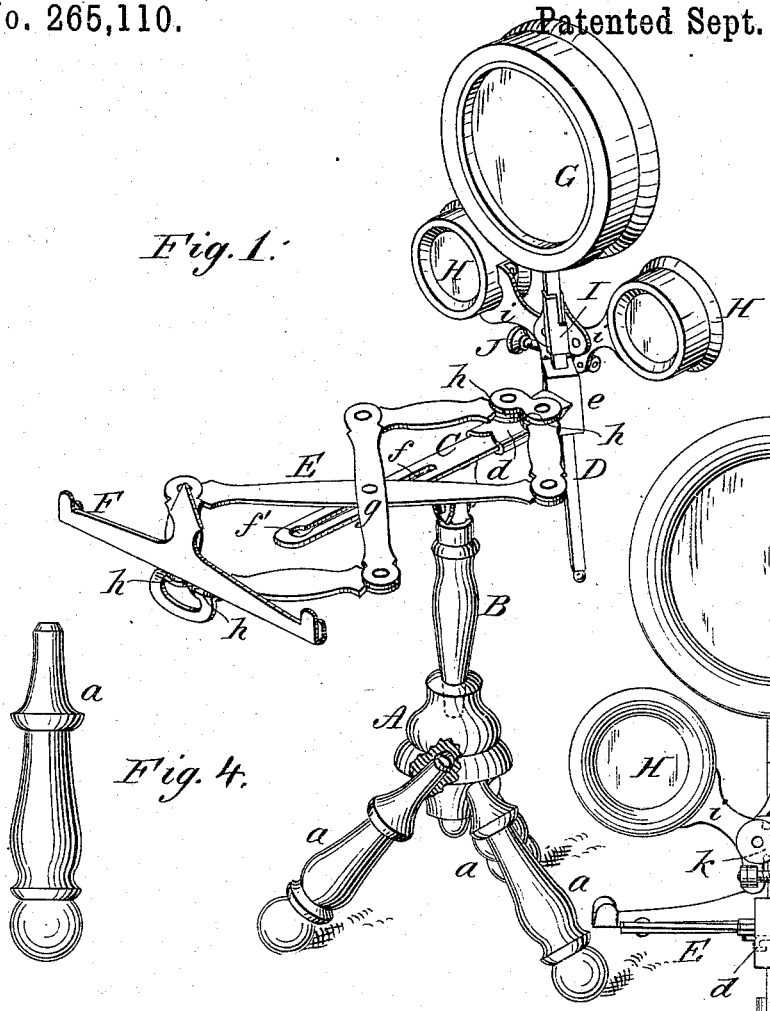


Fig. 2.

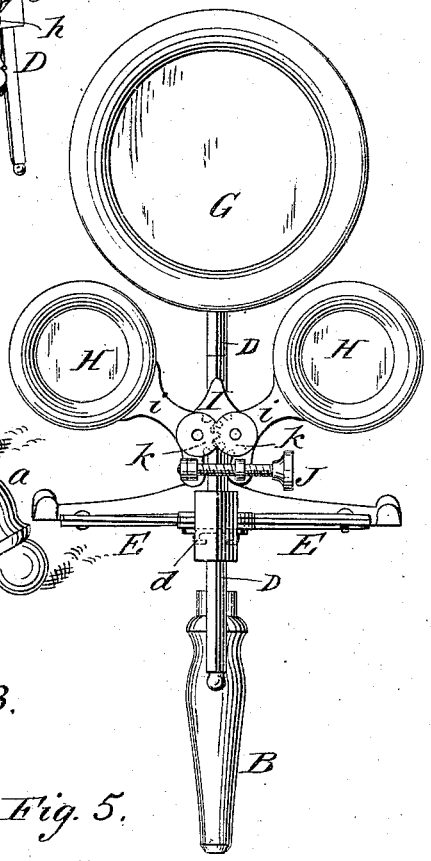


Fig. 4.

Fig. 3.

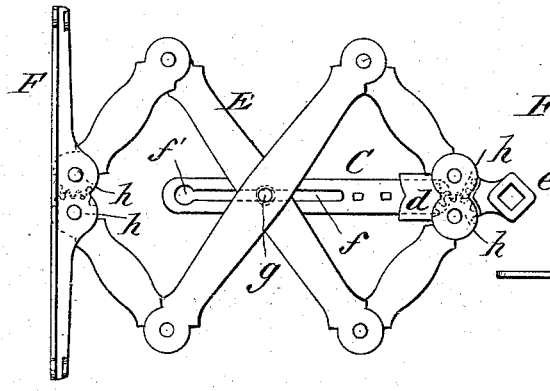
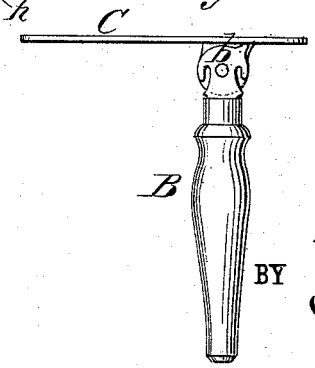


Fig. 5.



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COMBINED STEREOSCOPE AND GRAPHOSCOPE.

SPECIFICATION forming part of Letters Patent No. 265,110, dated September 26, 1882.

Application filed May 20, 1882. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. LEWIS, of the city of Brooklyn, in the county of Kings and State of New York, have invented a new Improvement in Stereoscopic and Graphoscopic Instruments, of which the following is a full, clear, and exact description.

This invention relates to stereoscopes and graphoscopes, or the two instruments combined; and it consists in certain novel constructions and combinations of parts, whereby increased facility is afforded for dismembering and closely packing the instrument for converting it from a standing instrument into one which can be conveniently held in the hand, for supporting and steadying the lazy-tongs frame of the instrument, and for insuring a uniform motion of opposite ends of said frame; likewise for utilizing the bar which carries the graphoscopic lens as an adjustable holder of the stereoscopic lenses, also made adjustable thereon, and for adjusting the stereoscopic lenses to different distances apart.

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

Figure 1 represents a view in perspective of a combined stereoscope and graphoscope constructed in accordance with my invention; Fig. 2, an end elevation of the same; Fig. 3, a plan of the lazy-tongs frame with its attachments. Fig. 4 is a side view of one of the legs of the standard detached, and Fig. 5 a side view of the handle of the instrument, with a slotted bar or slide attached.

In the drawings, A indicates the standard or base of either a stereoscope or graphoscope, or both combined. Said standard has its legs *a a* made of circular taper form at their upper ends, which fit in a detachable manner by simply pulling or turning and pulling of the legs within correspondingly-tapered recesses in the body of the standard. This facilitates close packing of and convenience in shipping the instrument. The center portion or body of the standard is also constructed with a taper socket in its top, within which the lower end of the stem B, that is of a similar taper, detachably fits, to similarly provide for a close packing or convenience in shipping, and to facilitate the hand use of the instrument, apart from the standard, by grasping the stem B as a handle. Furthermore, the handle B, which is adjustable at its top on a pivot, *b*, as a center, as in other instruments, for varying the angle of the upper portion of the instrument relatively to the handle, is also made detachable from said upper portion of the instrument, for convenience of packing, by attaching it at its joint on top, of which *b* is the pivot, to a slide, C, arranged to fit within a socket, *d*, that projects from the box *e*, through which the bar D, that carries the lenses, slides. This slide C has a longitudinal slot, *f*, which terminates at its outer end in an enlarged opening, *f'*, and serves to receive through it a joint pin or stud, *g*, arranged to project with its head downward from the under side of one of the bars of the lazy-tongs frame E of the instrument. This construction not only provides for the ready dismemberment of the handle B, with its attached slide C, by drawing said slide out of its socket *d* and manipulating it to pass the head of the pin *g* through the opening *f'*, but said slide acts as a guide for and serves to steady and support the lazy-tongs frame E, without interfering with its expansion and contraction, by reason of the provision which the slot *f* affords for the sliding of the pin *g* along it. To secure a uniform motion of both ends of the lazy-tongs frame E, which is necessary to a smooth and proper adjustment of the instrument, the opposite terminal bars at each end of said frame are geared together by toothed gears or sectors *h h*, which insures said bars working in unison.

F is the picture-holder at the outer end of the lazy-tongs frame E.

The bar D is the holder proper of the graphoscope-lens G, which is mounted thereon. This bar is adjustable up or down through the box *e*, to vary the height of said lens relatively to the picture, as in other graphoscopes; but in the present instance said bar is made to serve a double purpose. Thus it not only acts as a holder for and means of adjusting, as regards altitude, the graphoscopic lens G, but it also serves to carry and provide for the adjustment

up or down of the stereoscopic lenses H H, or frame I, which carries them, and which is fitted to slide on said bar D, that also, having an independent adjustment through its box *e*, gives a double adjustment of the stereoscopic lenses to vary their height relatively to the picture.

In stereoscopes it is usual, to prevent straining of the eyes, to provide means for adjusting the two lenses of the stereoscope apart in order that double pictures arranged at different distances one from the other may be properly centered. This is here accomplished in a very simple and perfect manner by connecting the two arms *i i* of the lenses H H, which are pivoted to the frame I, by toothed gears or partial gears *k k*, which insure the two lenses being adjusted in unison. Said lenses, being thus geared, may be adjusted nearer to or farther from each other, either directly by hand or by any suitable interposed means. A very convenient and accurate means for the purpose consists in a thumb-and-finger screw, J, arranged to fit a threaded box or projection on one of the geared arms *i*, and having a collared bearing in a box or projection on the other one of said arms *i*. In this way the adjustment apart of the lenses H H may be regulated to the greatest nicety.

When not required to use the instrument as a stereoscope, the frame I, carrying the stereoscopic lenses, may be readily removed from the bar D.

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

1. The detachable handle B, in combination with the slotted bar or slide C, to which it is jointed, the socket *d*, attached to the box *e*, and the lazy-tongs frame E, fitted to engage with and disengage from said slotted slide C, essentially as and for the purpose or purposes herein set forth.

2. In a stereoscope or graphoscope, the combination, with the holder of the lens or lenses and picture-holder, of a lazy-tongs frame having its opposite terminal bars at each of its ends geared together to work in unison, substantially as specified.

3. The combination, with the adjustable bar D of the graphoscopic lens, of the frame I and a pair of stereoscopic lenses, also made adjustable up or down said bar, essentially as herein described.

4. The combination, with the adjustable bar D of the graphoscopic lens, of the adjustable frame I and the stereoscopic lenses H, provided with toothed gears *k*, substantially as and for the purpose set forth.

5. The combination of the adjusting-screw J with pivoted arms *i i* of the lenses H H and toothed gears *k k*, connecting said arms, to insure their working in unison, essentially as shown and described.

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