(No Model.)

L. E. HICKOK.

BEAM COMPASSES.

No. 328,031. Patented Oct. 13, 1885.

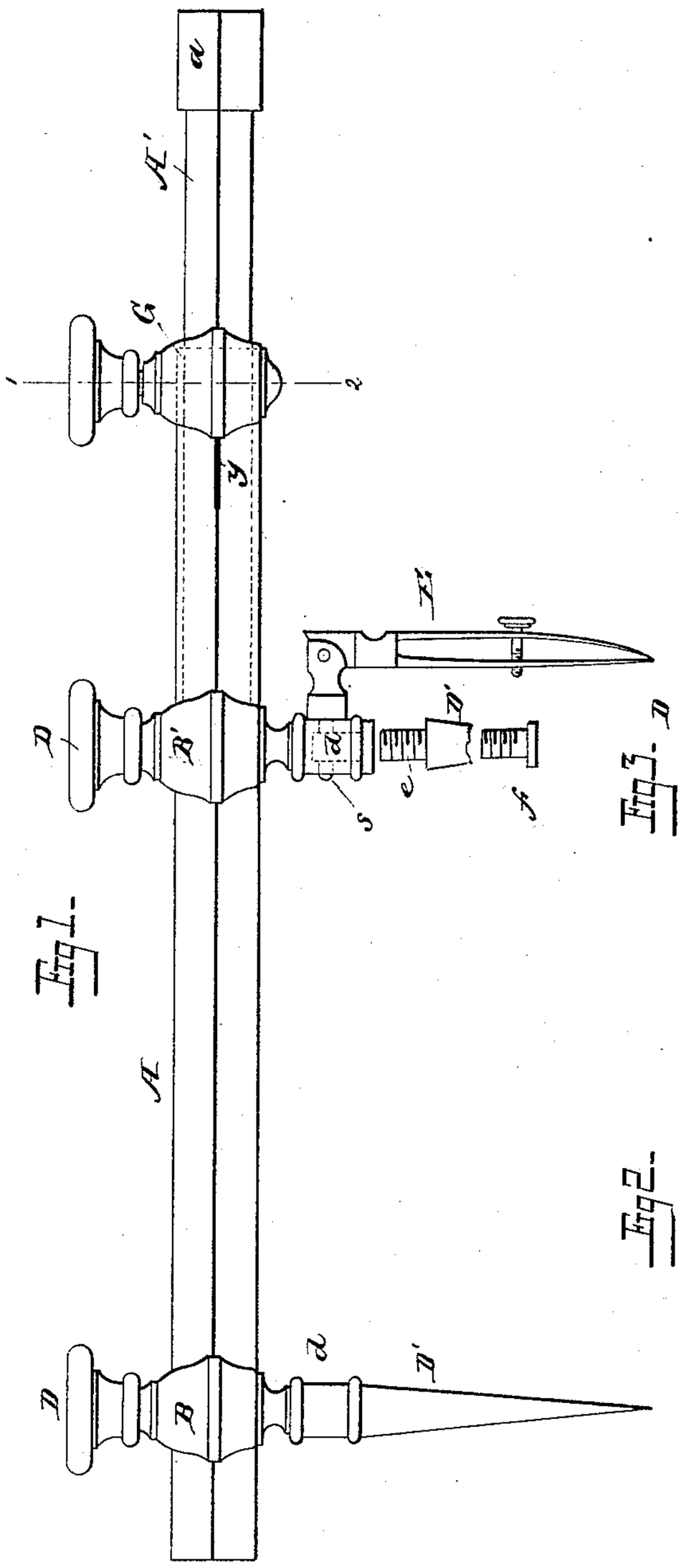

Fig. 1.

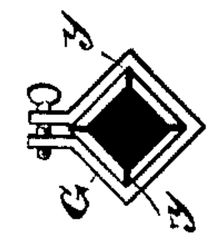

Fig. 4.

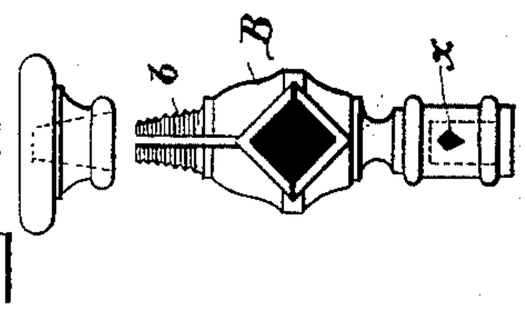

Fig. 3.

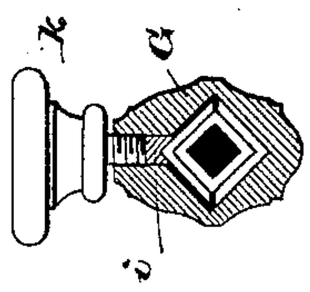

Fig. 2.

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BEAM-COMPASSES.

SPECIFICATION forming part of Letters Patent No. 328,031, dated October 13, 1885.

Application filed April 13, 1885. Serial No. 162,087. (No model.)

To all whom it may concern:

Be it known that I, LESTER E. HICKOK, a citizen of the United States, residing at Birmingham, in the county of New Haven and State of Connecticut, have invented certain new and useful Improvements in Drafting-Tools, of which the following is a specification.

My invention relates to that class of drawing-instruments in which the points or tools are carried by a horizontal staff; and my invention consists in providing a staff with adjustable heads having peculiar clamping appliances, and adapted for the ready attachment of any of the ordinary tools of different sizes, and in the combination with the said staff, of an extension-bar adapted to carry either of said heads and means for securing said extension-bars in any position to which they may be adjusted.

In the drawings, Figure 1 is a side view illustrating my improved drawing-instrument. Fig. 2 is a cross-section of the line 1 2, Fig. 1. Fig. 3 is a detached view of one of the drawing-heads and clamping-nuts, the lower portion of the head being in section. Fig. 4 is a view illustrating a modification.

The staff A of the instrument may be solid or hollow, and either round or angular. When and extension-staff is required, the portion A should be hollow, to receive the extension or portion A′. As shown, the staff is a square metallic tube, and the extension portion A′ is of similar shape, and slides therein, and has a head or enlargement, *a*, of the same size exteriorally as the staff A.

To the staff are fitted, so as to slide freely, two heads, B B′, each of which is prolonged at the upper end to form a tapering threaded projection, *b*, split vertically, as shown in Fig. 3, and adapted to receive a nut with a corresponding tapering socket. From the lower end of each head extends an arm or lug, *d*, having a vertical-threaded socket, to receive corresponding threaded projections *e*, upon the usual steel points D′ D′, and also to receive the threaded projection of the set-screw *f*; and in each lug *d* is a transverse opening, *x*, adapted to receive the stem *s*, at the end of the joint of a drawing-pen, E, or other drawing-tool. By this construction I am enabled to use either the steel point D or the drawing-pen *e*, and the latter may be secured in place by the screw *f*. Either head B B′, after being moved upon the staff to any desired position, may be securely clamped in place by turning the nut D so as to draw together the two sides of the projection *b*, thereby binding the heads upon the staff. By turning the nut in the opposite direction the head is then unclamped, and will slide freely upon the staff.

The pointers are secured to the heads by inserting the projections *e* in the threaded sockets of the head; but when a drawing-tool other than the pointer is required, the said point may be detached, the stem *s* of the drawing-tool is inserted in the socket *s*, and is clamped in place by means of the thumb-screw *f*.

To secure the extension-rod A′ in any position to which it is adjusted, I use a clamp-ring, G, having a recess, within which slides a block, *i*, the under surface of which is fitted to that of the staff, and a set-screw, *k*, turns in the projection of the said ring, and may be brought upon the top of the block *i*, so as to force it firmly down upon the adjacent face of the staff. In the end of the staff are one or more longitudinal slits *y*, so that when the screw *k* is turned to force down the block *i* the diameter of the staff will be contracted and the extension portion will be clamped securely in place, but may be readily released by removing the pressure upon the block *i*.

It will be obvious that a cam or other device may be used for compressing the slit end of the staff.

When it is desired to carry one of the heads over the extension portion A′, the screw *k* is raised to loosen the ring, and the latter is slipped off from the staff and its extension. The adjacent head is also then slipped off. The ring G is then returned to its place, and the head is placed upon and secured to the enlargement *a*, and may be then moved to and from the other head by shoving the extension-bar in or out until the heads are the desired distance apart.

Other means than those shown may be used for contracting the ring G—for instance, it may be provided with upturned ends, through which extends a screw serving to draw them together or separate them, to expand or contract the ring, as shown in Fig. 4.

Without limiting myself to the precise arrangement and construction of parts shown, I claim—

1. The combination, with the staff A, of heads constructed to support either the points or drawing-instruments, and to slide upon the staff, and provided with split tapering and threaded projections, adapted to nuts having tapering threaded sockets, substantially as specified.

2. The head sliding upon the rod and provided with a threaded socket and with a transverse socket or opening, whereby either the point or pen may be secured thereto, substantially as and for the purpose set forth.

3. The combination of the staff provided with adjustable heads and slit, as set forth, the extension-bar, and a ring, G, constructed to be contracted upon the slit end of the staff, substantially as described.

4. The combination of the hollow slit staff, sliding bar and clamping-ring, provided with a block, *i*, and set-screw *k*, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

LESTER E. HICKOK.

Witnesses:
FRANK E. WILCOX,
J. TOMLINSON.