

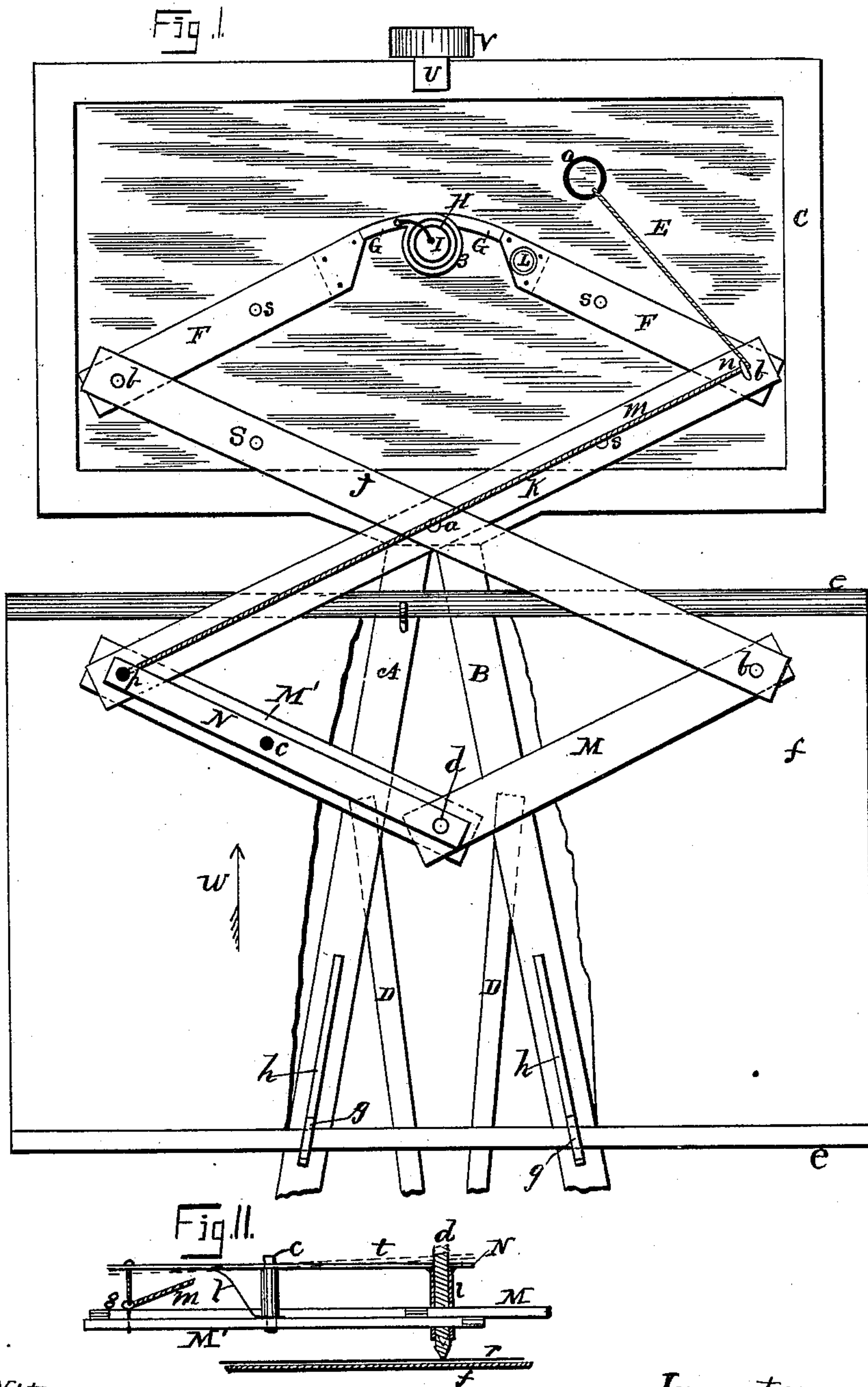
(No Model.)

2 Sheets—Sheet 1.

D. M. HARTSAUGH.
SKETCHING APPARATUS.

No. 424,111.

Patented Mar. 25, 1890.



Witnesses:
G. L. Chapin
C. M. Long

Inventor.
D. Maurice Hartsough

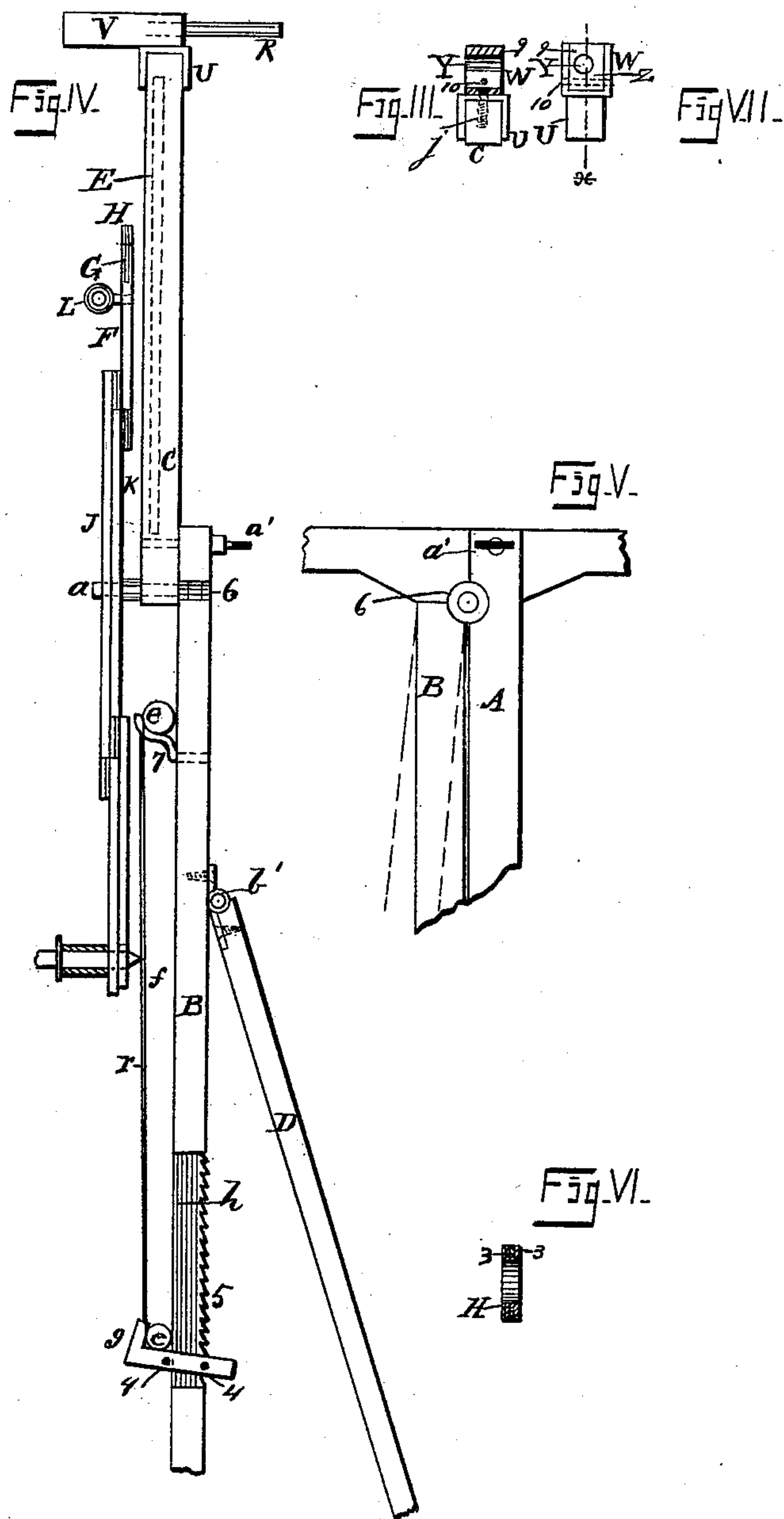
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UNITED STATES PATENT OFFICE.

D. MAURICE HARTSAUGH, OF MASON CITY, ASSIGNOR TO HIMSELF, AND
J. K. POWERS, OF CEDAR RAPIDS, IOWA.

SKETCHING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 424,111, dated March 25, 1890.

Application filed August 2, 1889. Serial No. 319,597. (No model.)

To all whom it may concern:

Be it known that I, D. MAURICE HARTSAUGH, a citizen of the United States, and a resident of Mason City, in the county of Cerro Gordo and State of Iowa, have invented new and useful Improvements in Sketching Apparatus, of which the following is a specification, reference being had to the accompanying drawings, illustrating the invention, in which—

Figure I, Sheet 1, is an elevation of my improved sketching apparatus with a portion of the canvas-support broken away to show the mechanism back of it. Fig. II is an elevation of a detail thereof, looking in the direction indicated by dart *w*; Fig. IV, Sheet 2, is an edge view of Fig. I; Fig. V, a view of a portion of the back of the apparatus, showing how the stand is connected with the frame above. Fig. VI is a vertical sectional elevation of the ring sight-support. Fig. VII is a front elevation of the support to the head-rest removed from its supporting-frame. Fig. III is a cross-section of Fig. VII on line *x*.

This invention relates to the novel construction of a pantograph, and it is combined with a stand, a glass, and canvas, whereby bringing a sight-point over the object in a field a pencil will correctly mark the lines of such object on a paper, as will be fully understood by the following description:

A represents one main leg of the stand or support, which has a connection with the frame C by means of a screw and nut *a'*. The other main leg B to the stand is hinged to leg A at 6, so as to be swung out from it. D D are the back legs hinged to legs A B at *b'*, so that a firm support may be had for the frame C on all ordinary ground. Should the ground be very uneven, the frame C may be brought level by means of set-screw *a'*.

F J K M M' represent the levers to the pantograph. The ends of levers F are pivoted, respectively, at *b b* to levers J K, which are centrally pivoted to the frame C at *a*, so as freely to swing in a plane parallel with the frame C. The ends of levers J K are pivoted at *b* to the outer ends of short levers M M', and the inner ends of the latter are pivoted together by a tube *i*, Fig. II, which supports a pencil *d*. The inner ends of levers F are

jointed together by two rings 3 and a collar H engaging them, the rings having shanks G riveted to the said levers F. The joint thus formed has a hollow center, and a pointer I attached to one of the shanks serves as a sight for the eye looking upon a field or figure to be sketched. A tilting plate N is supported on lever M' by means of a post *c*, and its inner end is attached to the pencil in tube *i*. A spring *l*, secured by post *c*, is intended to hold said plate level. A cord *m* is attached to its outer end at *p*, runs through an eye on lever K, through an eye *n* on the opposite end of said lever, and is fastened to a ring *o*, whereby, when the thumb and finger are moving the sight-point I over a field or object and the pencil *d* is copying, the ring *o*, placed on another finger of the same hand, may be drawn on to raise the pencil from the paper as is required from time to time. This cord attachment is not unlike other means for raising the pencil from the paper, and is therefore not claimed.

A head-rest V is supported on the frame C by means of a clamp U and an inverted-U-shaped metal portion W, which are held in place by a single screw *j* to the frame. The top portion supports a block 9 by means of a pin 10, and the block is provided with a hole Y to receive the shank R of said head-rest, as more clearly shown at Figs. 3, 4, and 7. A suitable canvas *f* is secured at its ends to rollers *e e*, and the upper roller is fastened to a hook 7, and the lower one is secured by a latch *g* in a slot *h* in each leg A B. The back sides of the legs are toothed at 5, so that pins 4, put through the latches and projecting onto the sides of the legs, will hold the latches in place and the canvas in the position shown.

r represents a section-line of paper, which may be held by thumb-tacks or otherwise to the canvas. Only six levers are shown; but others may be employed to reach all portions of a large canvas, or the figure to be made may be enlarged by putting the pivots *b* of the upper set of levers in the holes *s s s*.

E is a glass in the frame C, which permits the object to be seen and governs the field to be sketched and supports the hand which has hold of the knob L. The frame C may be of wood; but the levers forming the pantograph

should preferably be made of spring-brass and pivoted so as to have no lost motion.

I claim as new and desire to secure by Letters Patent—

- 5 A sketching apparatus consisting of a suitable support, and a frame containing a glass pivoted to the top portion thereof, and the frame supporting a head-rest, in combination with a pantograph consisting of levers, as
10 shown, the central levers pivoted to the said

frame, the upper levers having an open eye-joint connection and the lower levers provided with a pencil-holder, a head-rest supported by said frame, and a removable canvas supported by the frame-support, as and for 15 the purpose specified.

D. MAURICE HARTSAUGH.

Witnesses:

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