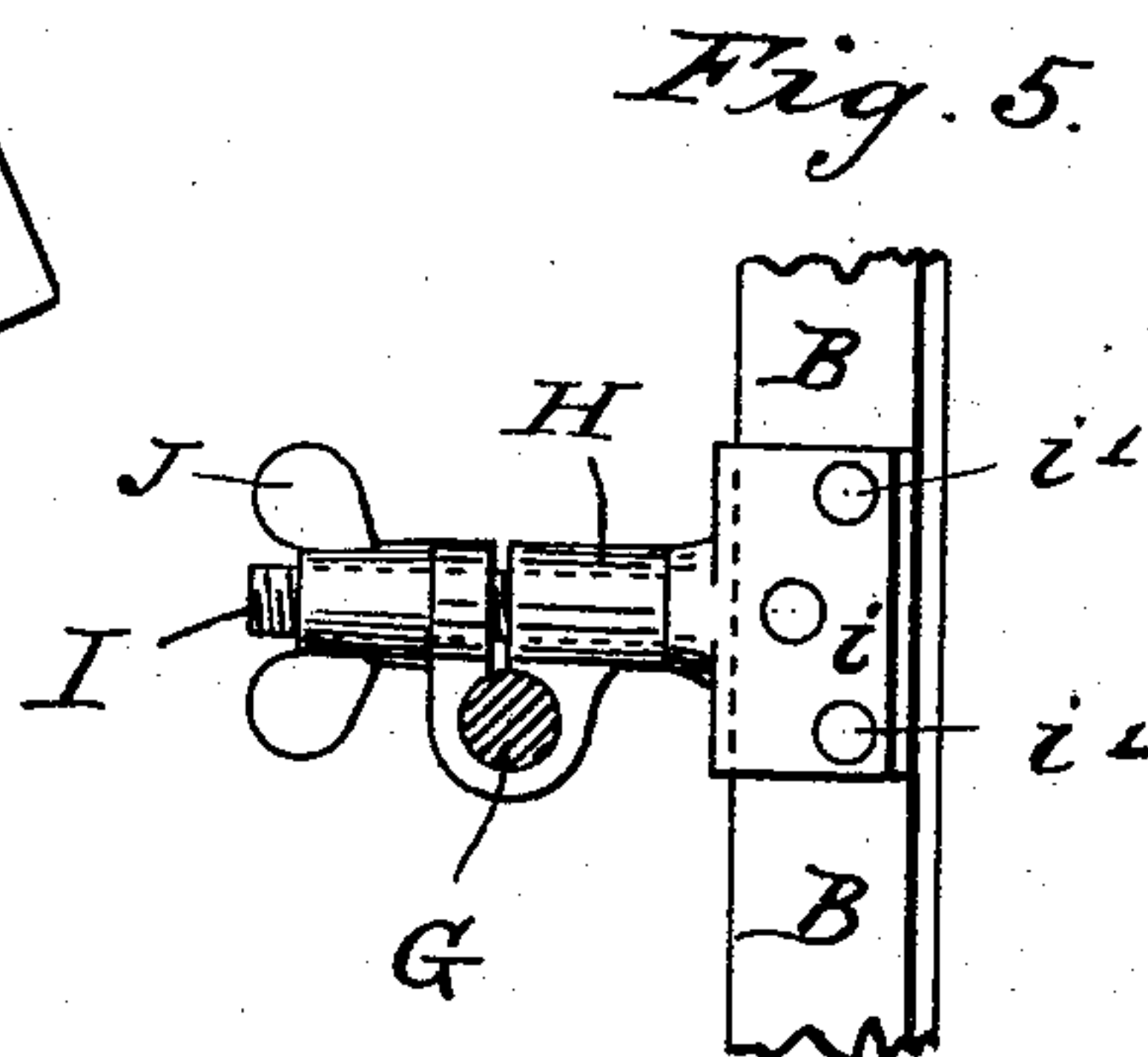
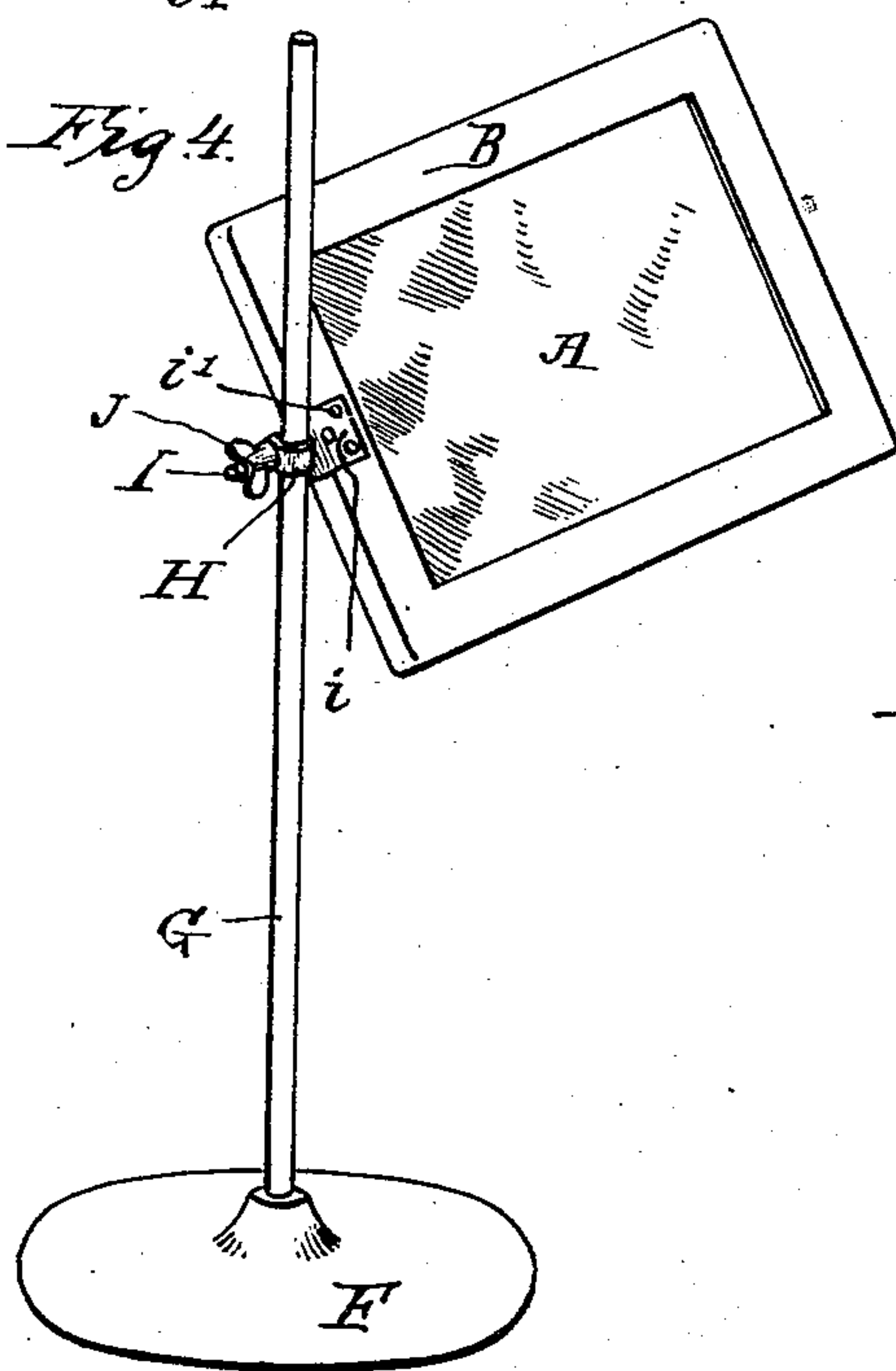
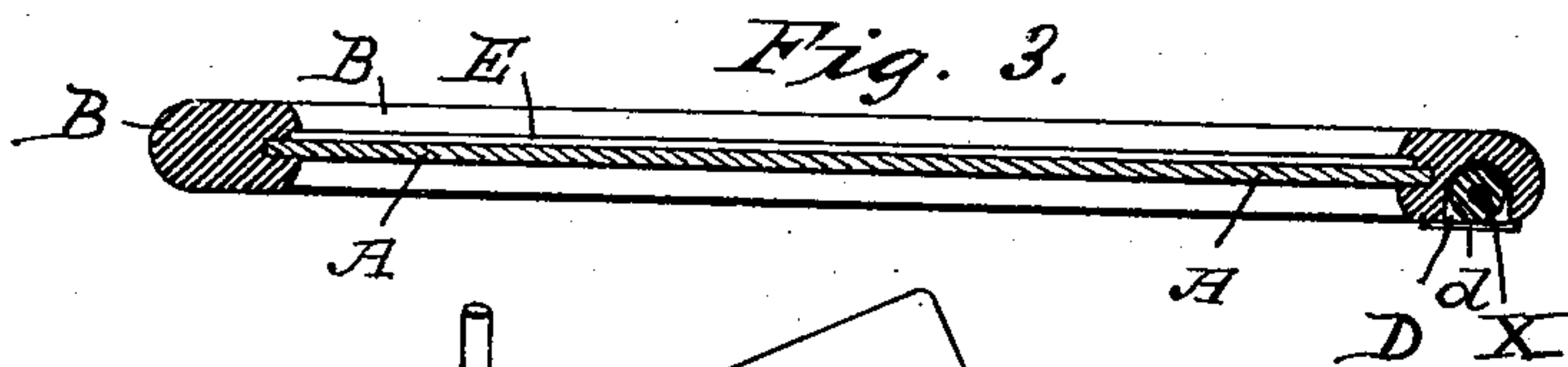
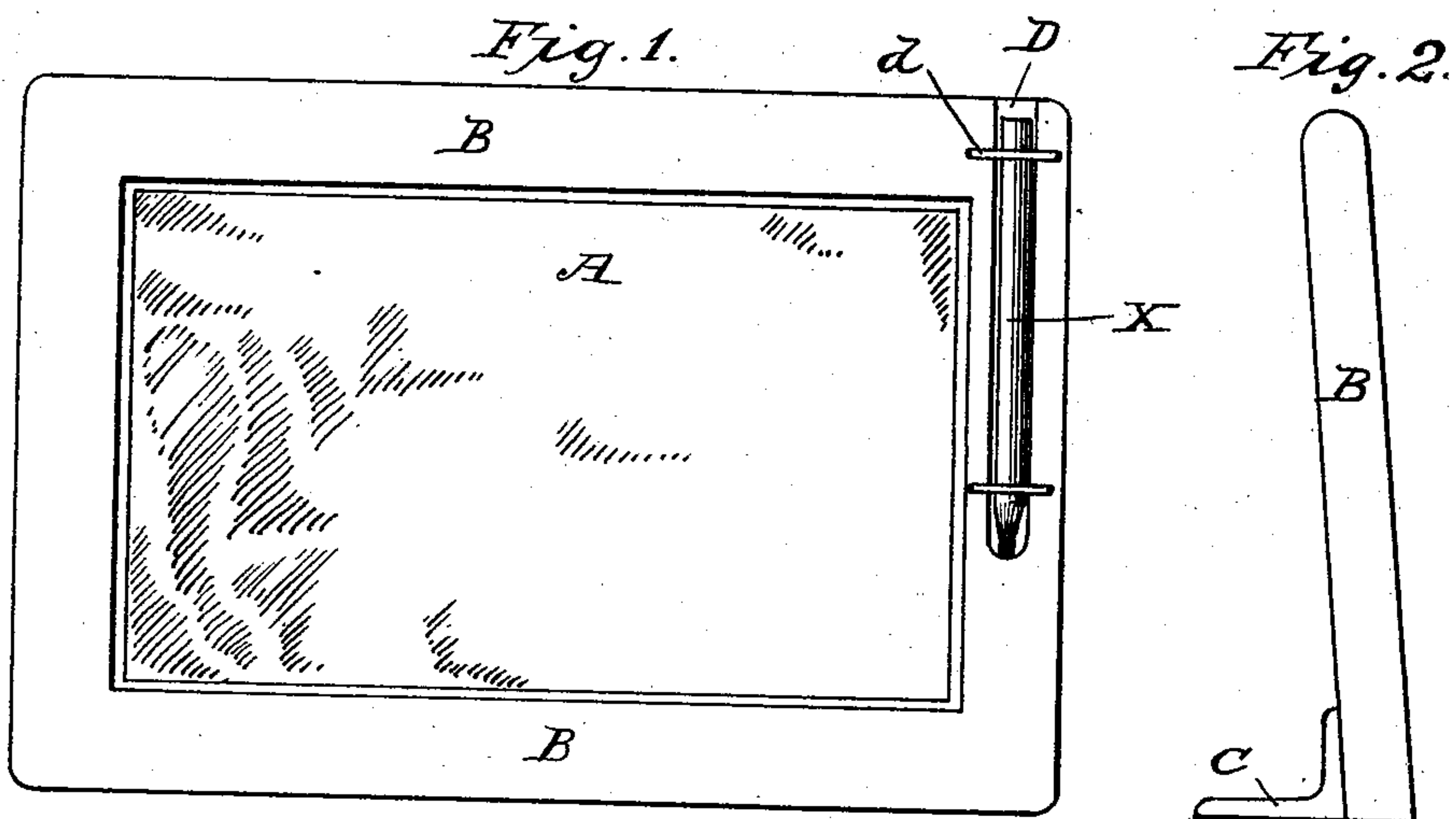


(No Model.)

A. K. CROSS.
PROCESS OF TESTING AND CORRECTING FREE HAND DRAWING.
No. 491,160.
Patented Feb. 7, 1893.



Witnesses.
J. H. Adams
J. F. Abbott

Inventor.
A. K. Cross
By his Attorney J. B. Thurston

UNITED STATES PATENT OFFICE.

ANSON K. CROSS, OF BOSTON, MASSACHUSETTS.

PROCESS OF TESTING AND CORRECTING FREE-HAND DRAWING.

SPECIFICATION forming part of Letters Patent No. 491,160, dated February 7, 1893.

Application filed April 19, 1892. Serial No. 429,730. (No specimens.)

To all whom it may concern:

Be it known that I, ANSON K. CROSS, a citizen of the United States, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented a certain new and useful Improved Process for Testing and Correcting Free-Hand Drawings; and I do hereby 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.

The invention relates to the art of free hand drawing and has for its object to provide a practicable method of making such drawings and testing or proving their correctness; and it consists in the improvement in the art of teaching free hand drawing herein-after described and particularly pointed out.

In the accompanying drawings: Figure 1 is a front elevation of a piece of clear glass mounted in a frame having brackets for its support and a groove containing the pencil; Fig. 2 is a side view; Fig. 3 is a sectional plan of said device; Fig. 4 represent the device in perspective as when adjustably mounted at one side upon a vertical spindle rising from a base plate; Fig. 5 is a sectional elevation of the triple clamp whereby the frame may be adjustably mounted upon an upright spindle.

The glass A I place in a frame B, similar to that of a common slate. This frame may have brackets C for supporting it in an upright position on a desk. A groove D is also provided in one side of the frame to hold the pencil or crayon X, which may be inserted in wood or used in the form of a crayon. Metallic arms *d* may be employed to retain the crayon or pencil X in its groove D. A groove E is provided in the frame adjacent to the back of the glass either in two opposite sides or in both of the sides and ends, for holding a piece of paper so that the student sees the paper through the glass. The style of support shown in Fig. 4 will also be found convenient. This consists of a suitable base plate F, in which is mounted the upright spindle G, carrying the slide H, which is perforated at right angles with the spindle G, for the reception of a stud I, formed upon the yoke plate *i*, fitted upon one side of the frame B, and secured thereto by screws or rivets *i'* as in Figs. 4 and 5. The stud I is screw threaded a portion of

its length and is fitted with a thumb nut J. The portion of the slide H which is perforated is sawed open at one side into the perforation or opening for the spindle G, which enables the frame B to be adjusted and secured at any desired angle with the spindle G by tightening the nut J, which at the same time secures the slide H at the desired elevation upon the spindle G.

The transparent slate may be made of any substantially clear material, as celluloid, or glass through which objects may be seen sharply even at a great distance. On account of its superior transparency and its durable surface clear glass is the best material on which to make the drawing.

The pencil may be made in various ways and of different material. I prefer however, to make the pencil of a soapy, or greasy material, hard enough to be used as lead in an ordinary pencil and containing coloring matter so that the mark upon the glass may be readily seen.

The transparent slate may be used in several ways:—

First,—the drawing may be made upon the slate as upon paper; the slate being rendered non-transparent by means of a sheet of paper held in the grooves provided for this purpose. This drawing should be made by eye alone, the student putting down what he thinks he sees. The drawing having been made he may test it by removing the paper at the back of the slate and holding the slate up in front of the object and at practically right angles to the line of vision when if the drawing is correct its lines will coincide with those of the object; if incorrect the difference between the drawing and the appearance of the object can be noted and the student try again.

Secondly,—the drawing may be made upon the regular drawing paper and when the student thinks it is correct he may place the slate over the drawing and trace it upon the slate and compare it with the actual appearance of the object by holding it in front of the latter as in the first case.

Having thus described my invention what I claim and desire to secure by Letters-Patent is:

1. In the art of teaching free hand drawing the improvement which consists in making a

drawing upon a transparent slate, then holding the slate between the object and the eye in a position substantially perpendicular to the line of vision and moving said slate back and forth until, to the eye, the drawing will, as nearly as practicable, cover the object, whereby the inaccuracies of the drawing may be discovered, substantially as set forth.

2. In the art of teaching free hand drawing the improvement which consists in placing an opaque sheet or object behind a transparent slate, making a drawing upon said transparent slate, then holding the slate separated from the opaque sheet between the object to

be represented and the eye in a position substantially perpendicular to the line of vision, and moving said slate back and forth until, to the eye, the drawing will, as nearly as practicable, cover the object, whereby the inaccuracies of the drawing may be discovered, substantially as set forth.

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

ANSON K. CROSS.

Witnesses:

O. M. SHAW,
KATHARINE DUFFEE.