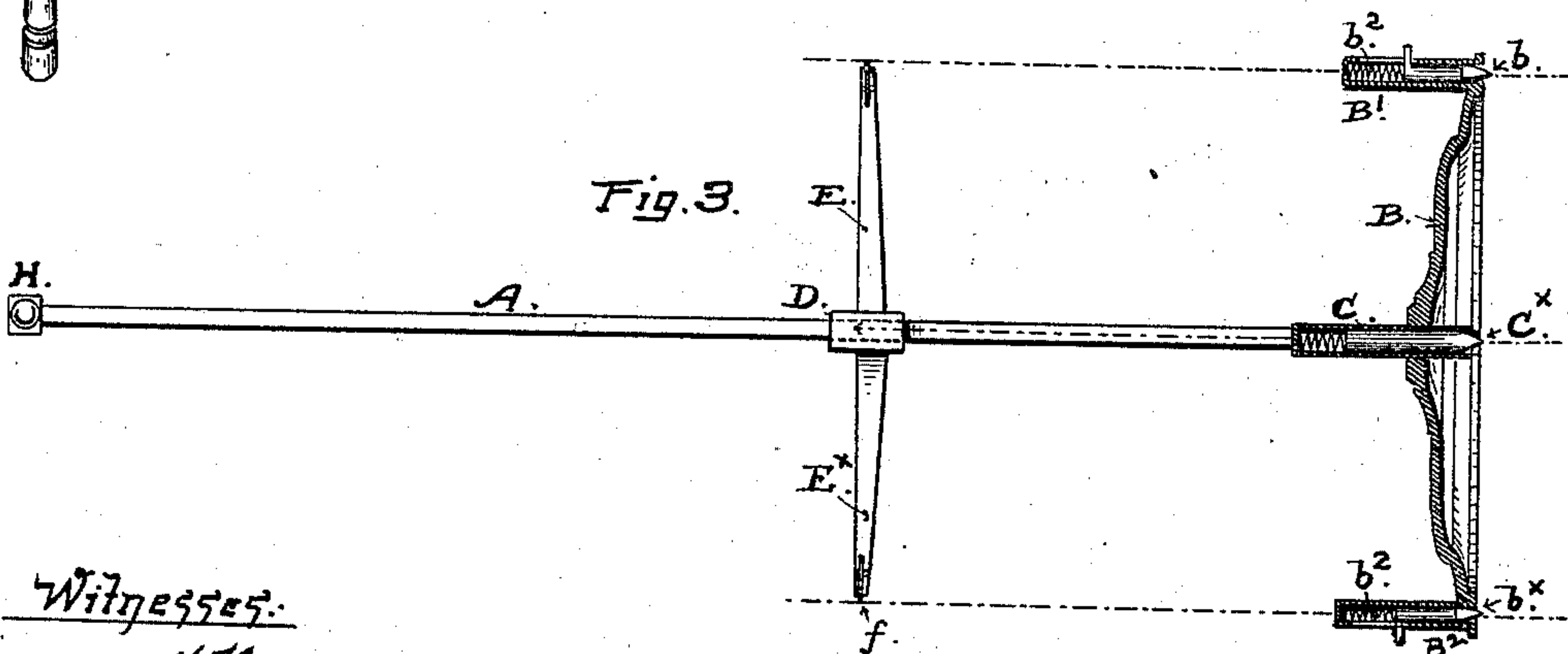
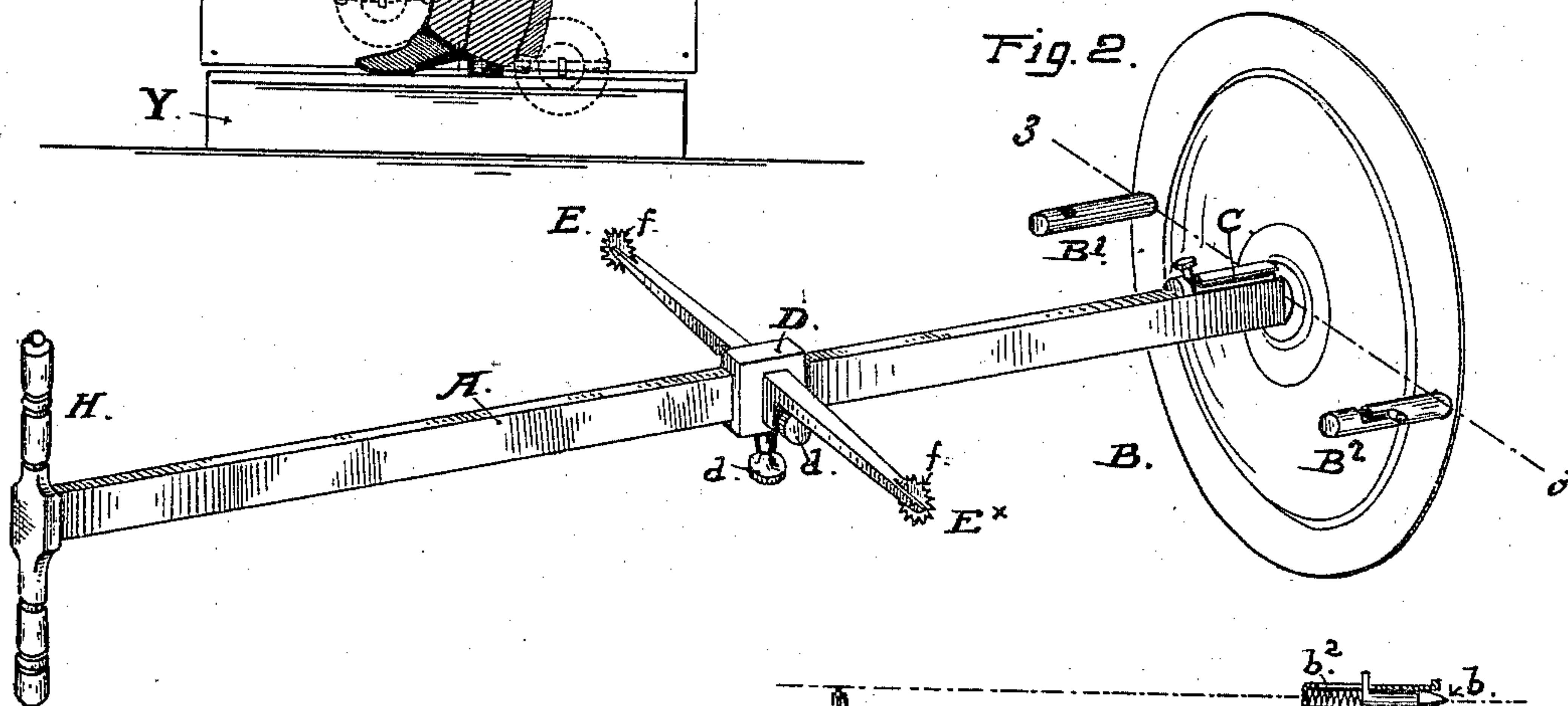
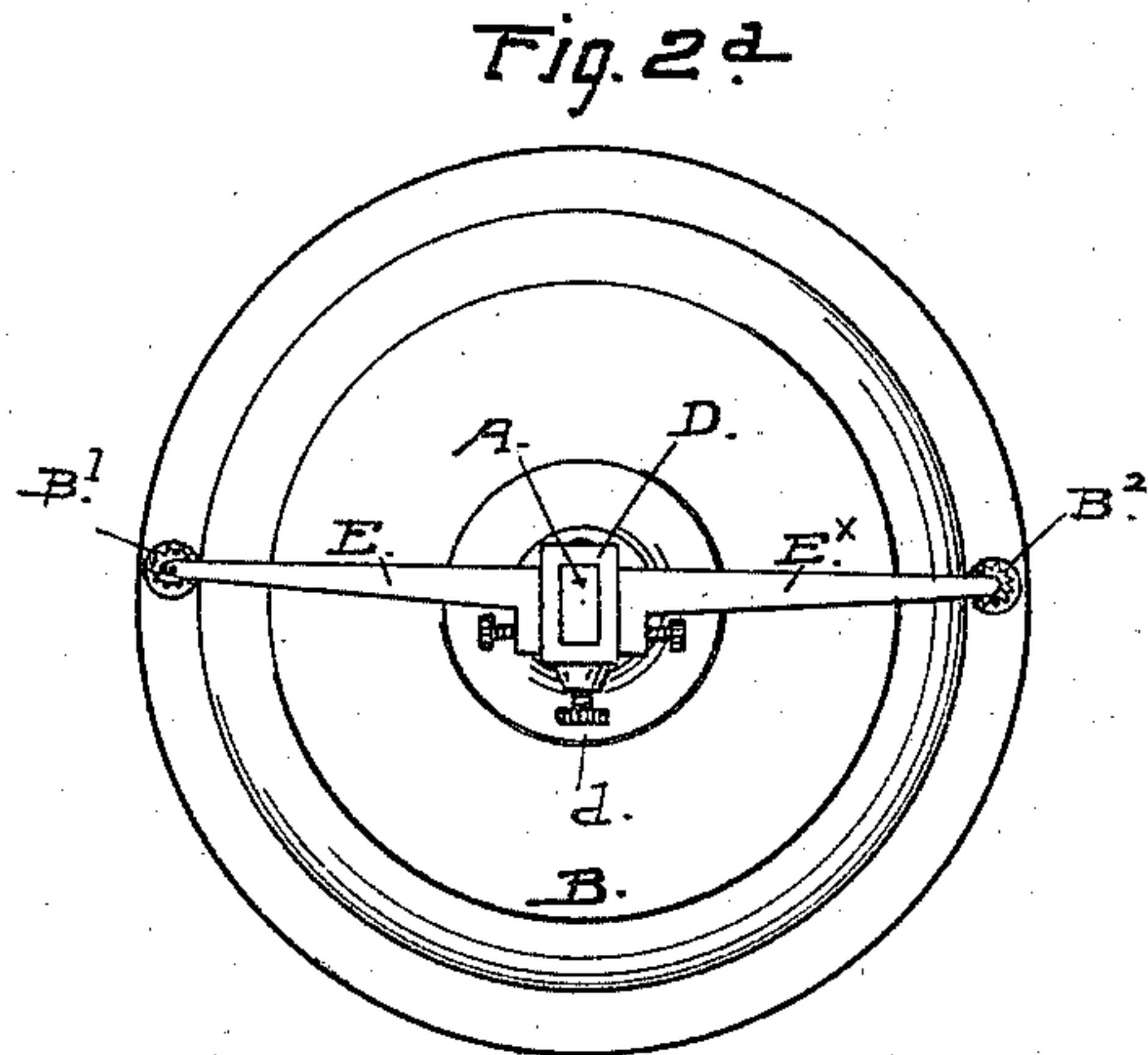
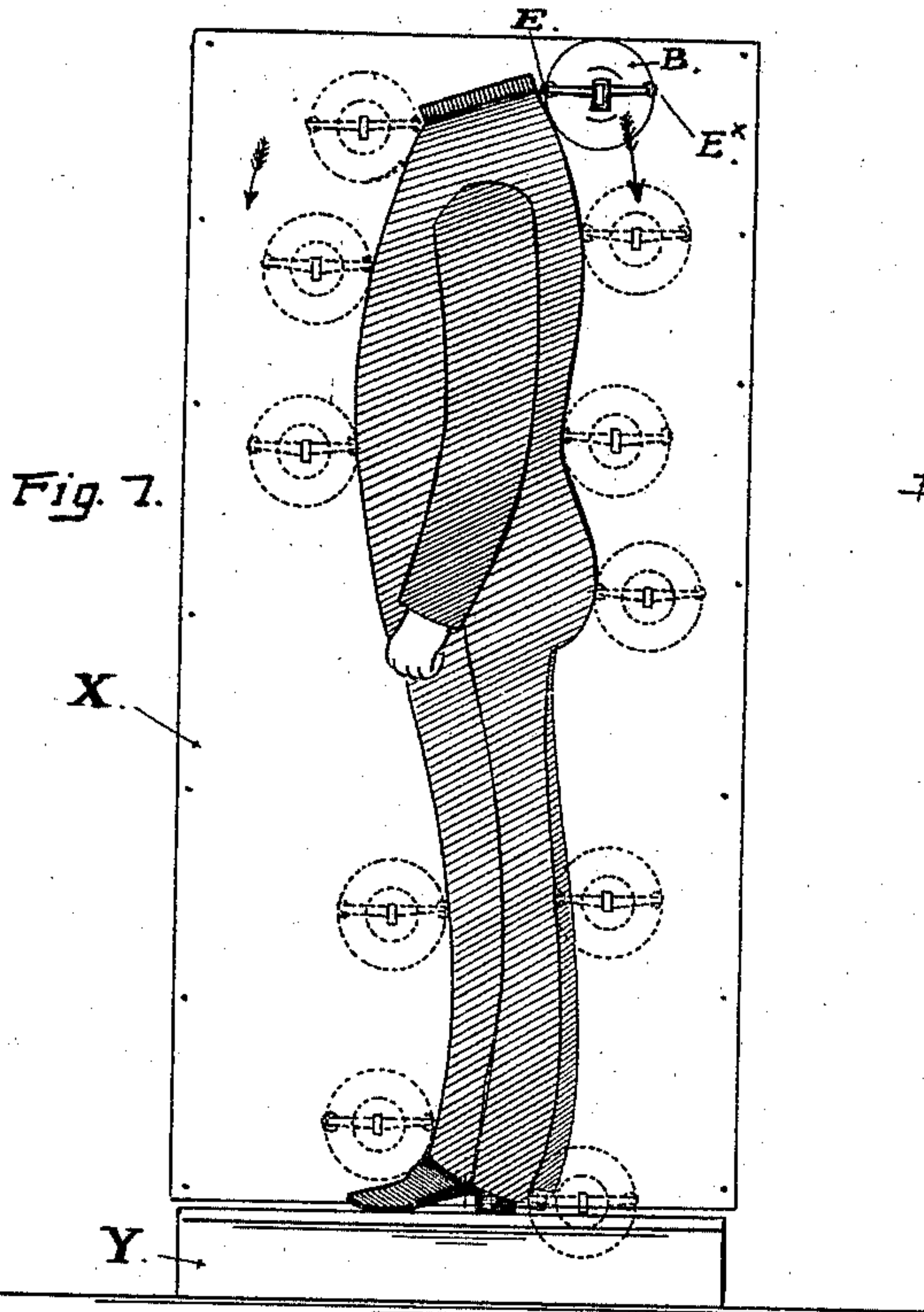


(No Model.)

J. S. HAND.  
TAILOR'S DRAFTING INSTRUMENT.

No. 542,443.

Patented July 9, 1895.



Witnesses:

M. Hegner  
E. Patten

Inventor:  
John S. Hand  
By Smith & Watson Attys.



# UNITED STATES PATENT OFFICE.

JOHN S. HAND, OF SAN FRANCISCO, CALIFORNIA, ASSIGNOR TO LILLIA HAND, OF SAME PLACE.

## TAILOR'S DRAFTING-INSTRUMENT.

SPECIFICATION forming part of Letters Patent No. 542,443, dated July 9, 1895.

Application filed November 5, 1894. Serial No. 527,960. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN S. HAND, a citizen of the United States, residing in the city and county of San Francisco and State of California, have invented a new and useful Tailor's Drafting-Instrument, of which the following is a specification.

My invention relates to devices or instruments for the use of tailors in laying off and drafting patterns for garments; and the same consists in certain novel parts and combination of parts, as hereinafter fully set forth, producing a tool or instrument of novel construction and operation.

This instrument is designed and produced for the purpose of obtaining different diameters of the body, the length and the outlines of the figure of a person from which to lay off and draft patterns for coats, waistcoats, trousers, and other garments according to certain determined and established planes and points thereon, and it is intended to be used in connection with a fixed vertical plane or surface on which a sheet of paper is stretched or temporarily fixed to receive the points and lines which are transferred to and marked on it by the instrument from the person being measured.

The device or instrument consists, essentially, of a straight bar or rod of proper stiffness to retain its form without alteration when used and handled, and carrying on one end a cross-head provided with a pencil or tracing-point and at the opposite end a handle. Between these two ends there is a slide carrying an arm that projects at right angles from the bar and is provided with a roller on the extreme end, the said slide being movable and adjustable along the bar and provided with means to clamp it on the bar at any desired point between the ends thereof. The said parts I proceed to construct and combine or arrange together for operation as follows, reference being had to the accompanying drawings, forming a part of this specification, in which—

Figure 1 illustrates the use and operation of the instrument in laying off and transferring different diameters and main lines and points from the figure of a customer directly upon a vertical plane. Fig. 2 is a perspective

view of the instrument, and Fig. 2<sup>a</sup> is a view looking toward the front face of the head. Fig. 3 is a top view of the instrument, the cross-head being shown in section, taken in a plane about on the line 3 3, Fig. 2.

A indicates a thin blade about twenty inches in length, constructed of metal of suitable stiffness to retain a true straight form without bending, and B is a circular plate of metal, in the center of which one end of the blade is fixed. This plate or circular head is finished with a true face on the back or outer side all around the margin and the blade is fixed in position standing out at a true right angle with the face of the circular head, so that when the head is placed against a plane surface the blade A will stand at a right angle to that surface.

B' B<sup>2</sup> are tubular sockets containing tracing points or pencils *b* and springs *b*<sup>2</sup> behind the pencil acting to press them outward with suitable degree of force to hold the point in working contact with the plane surface against which the circular head is placed. In each socket is a shorter tubular holder with a pin projecting through a bayonet-slot in the socket as a means of drawing the marking-point into the socket and holding it back out of action. The coil-spring is placed between the closed end of the socket and the back of the tubular holder. C is a socket of similar character, containing a marking-point C<sup>x</sup> in the middle of the circular head and directly in line with the top edge of the blade.

D is a slide fitted on the blade to move smoothly along it from end to end, and provided with set-screws *d d* for clamping it in position when set at any given point on the blade. From one side or face of the slide projects an arm E, fixed to that face and extending perpendicular thereto and consequently at a right angle to the face of the blade, the face of the slide being parallel with the blade. On the opposite side or face of the slide is a similar arm E<sup>x</sup>, standing in the same relative position to the face of the blade on the side opposite to the arm E and also directly in line with that arm. The linear distance from the face of the blade outward to the end of the arm E or E<sup>x</sup> corresponds to the distance from the same face of the blade



at the head outward to the line on which is situated the marking-point on that side of the head, as illustrated in Fig. 3, and these relations of the outer ends of the arms and the marking-points are preserved under all conditions of adjustment of the slide D on the blade. On the end of each arm is a small rowel or toothed wheel *f*, pivoted in a slit to revolve freely. The extreme end of the arm should lie in a plane with the marking-point—that is, on the same side of the head—and the points of the wheel should project sufficiently beyond that end to engage the surface of the cloth or covering on the body and rotate as the instrument is moved. The end of the arm should be brought up to the surface with just enough pressure to make this wheel turn, but any excess of pressure would, of course, change the contour of the line drawn on the plane from what it really is on the garment worn by the customer at the time this measure is taken, and the same must be avoided.

The top edge of the blade is the working edge, and the outer ends of the arms and the points of the marker all lie in the same horizontal plane.

For the convenient and ready manipulation of the instrument a handle H is fixed on the outer end of the blade.

The instrument thus constructed is used in the following manner: Against a smooth stationary vertical plane of suitable height and breadth is spread and temporarily attached a sheet of paper, (indicated at X, Fig. 1.) The person from whom the patterns are to be drafted then takes his position in front of the plane X, usually standing on a low platform Y and with one side presented to the plane. Placing the instrument with its circular head flat and closely pressed against the plane and with the blade extending perpendicularly outward therefrom in close relation to the back of the person, the slide D is moved along the blade until the end of the arm E is brought directly opposite and in the same vertical plane with the middle line of the back, and when thus adjusted the set-screws of the slide are turned up to clamp that part tightly on the blade. Afterward the pencil *b* is released, allowing the spring behind it to act, and then the instrument, being held against the vertical plane, as before mentioned, is moved slowly down the plane, the operator taking pains to guide and hold the point of the arm E in contact with the surface in front of it during the movement. It will be seen, therefore, that the pencil-point in the tube marks upon the vertical plane the outline of the surface against which the end of the arm is in contact in such movement of the instrument. Beginning at the nape of the neck at the top of the middle seam of the coat, for example, the instrument is moved from that position regularly downward along the back and then downward along the back of the leg

to the bottom of the trousers. Several positions of the instrument in this movement downward are indicated by the dotted lines in Fig. 1. After operating in this manner at the back, the instrument is shifted to the front and the opposite arm *E*<sup>x</sup> and pencil-point *b*<sup>x</sup> are brought into play, while the pencil *b* is set back into its tube. From the lines thus transferred to the paper on the vertical plane are obtained the contour of the front, back, and legs, and also the principal diameters through the body, and from this are drafted the patterns of coat, vest, or trousers.

The marking-point C in line with the top edge of the blade is useful for transferring to the plane certain points not obtained in the before-described movements of the instrument, such, for instance, as the height of the crotch and the point of the arm-pit. These are obtained by placing the person in position with his back to the vertical plane and then introducing the blade under the arm or in the crotch, taking care to maintain a true horizontal position of the blade by holding the circular head flat against the vertical plane and then releasing the marking-point in the tube C, allowing it to strike the paper.

This is the manner of using and operating the instrument: The arm or tracing-point on the blade and the pencil or marker on the head is duplicated, so that there is a set on each side of the instrument. The object of this construction is chiefly to allow the instrument to be shifted from one side to the other of the person being measured without turning the instrument over, and in the arrangement herein shown and described the several acting-points mentioned are all situated in a horizontal plane with the top edge of the blade, so that the instrument could not be turned over without changing the relation of that part to the vertical plane.

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

1. The herein described instrument for drafting patterns comprising a straight blade a fixed head on one end thereof, the outer face of which is at a right angle to the blade, an adjustable slide on the blade carrying arms that project on opposite sides of the blade and at a right angle thereto, and fixed sockets on the head having pencil-points and means for projecting said points beyond the face of the head and for drawing them within the same; the said pencil-points being located in line with the outer ends of the projecting arms on the blade and in planes parallel with the blade.

2. The combination with the straight blade —A— and the fixed cross-head —B— thereon, of the adjustable slide on the blade carrying an arm projecting outward at a right angle to the blade, and the marking-point on the head



in line with the outer end of the said arm and in a plane parallel with the blade.

3. The combination with the blade —A— and the cross-head —B— fixed thereon, of the adjustable slide —D— arms —E—E<sup>x</sup>— thereon, the sockets —B'—B<sup>2</sup>— on the head carrying pencil-points —b—b<sup>x</sup>— and the marking-point —C<sup>x</sup>— on the center of the head,

constructed for operation substantially as hereinbefore described.

In testimony that I claim the foregoing I have hereunto set my hand and seal.

JOHN S. HAND. [L. s.]

Witnesses:

EDWARD E. OSBORN,  
C. W. M. SMITH.