

(No Model.)

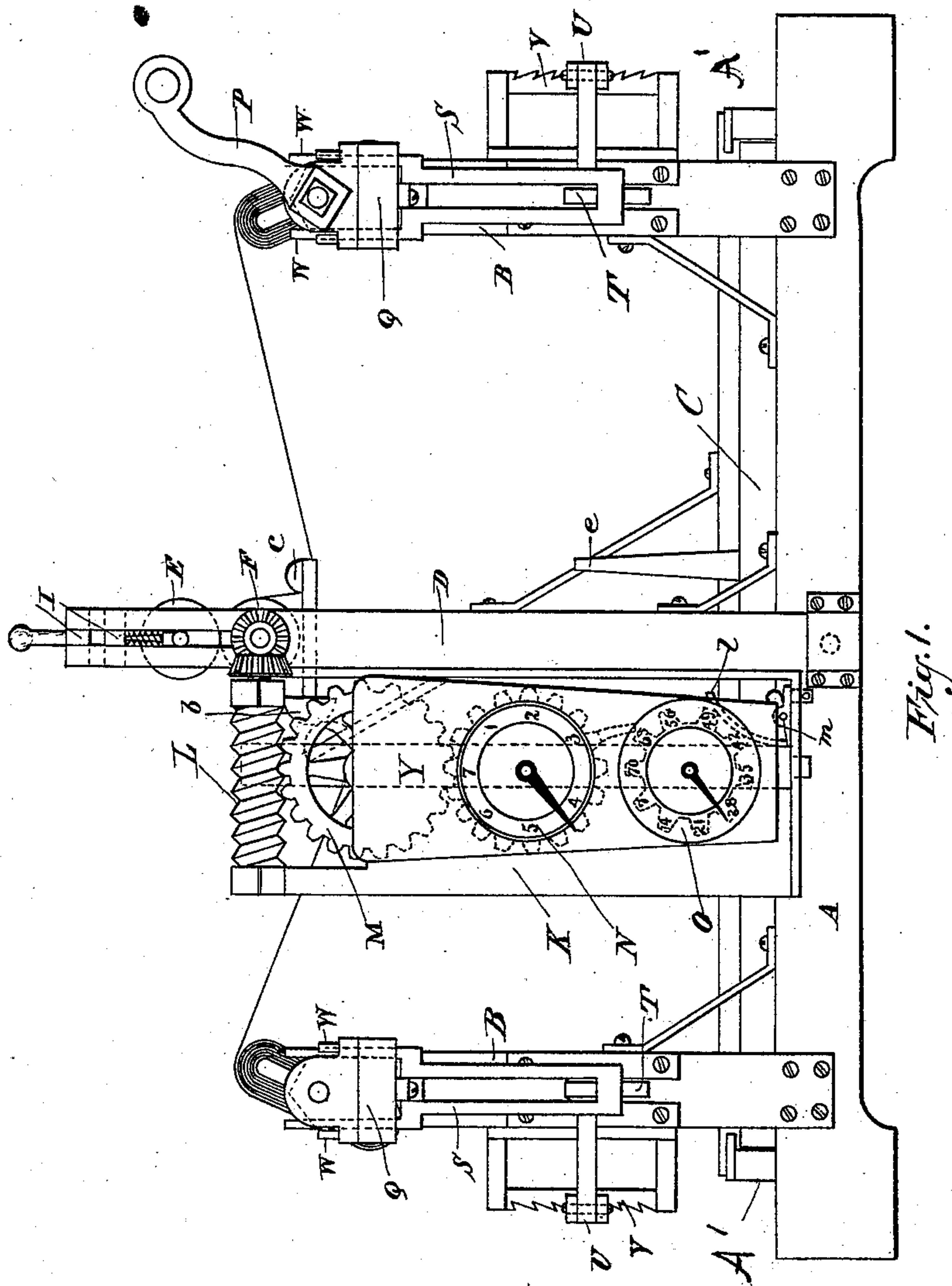
3 Sheets—Sheet 1.

J. W. KRUGER.

FABRIC MEASURING APPARATUS.

No. 381,842.

Patented Apr. 24, 1888.



WITNESSES:

C. W. Benjamin
Jas. W. Van Deventer.

INVENTOR.

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ATTORNEYS.

(No Model.)

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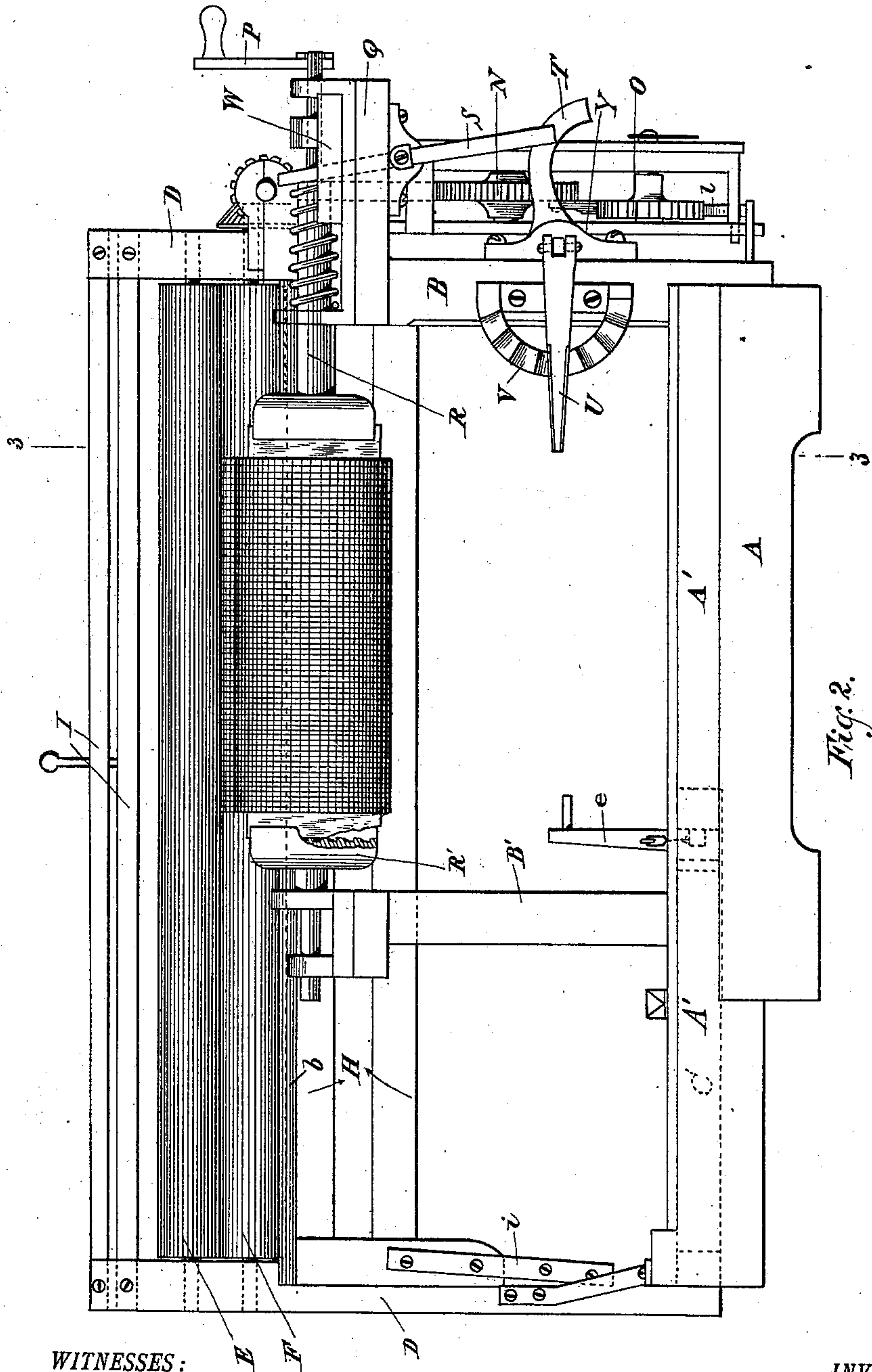


Fig. 2.

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Fig. 5.

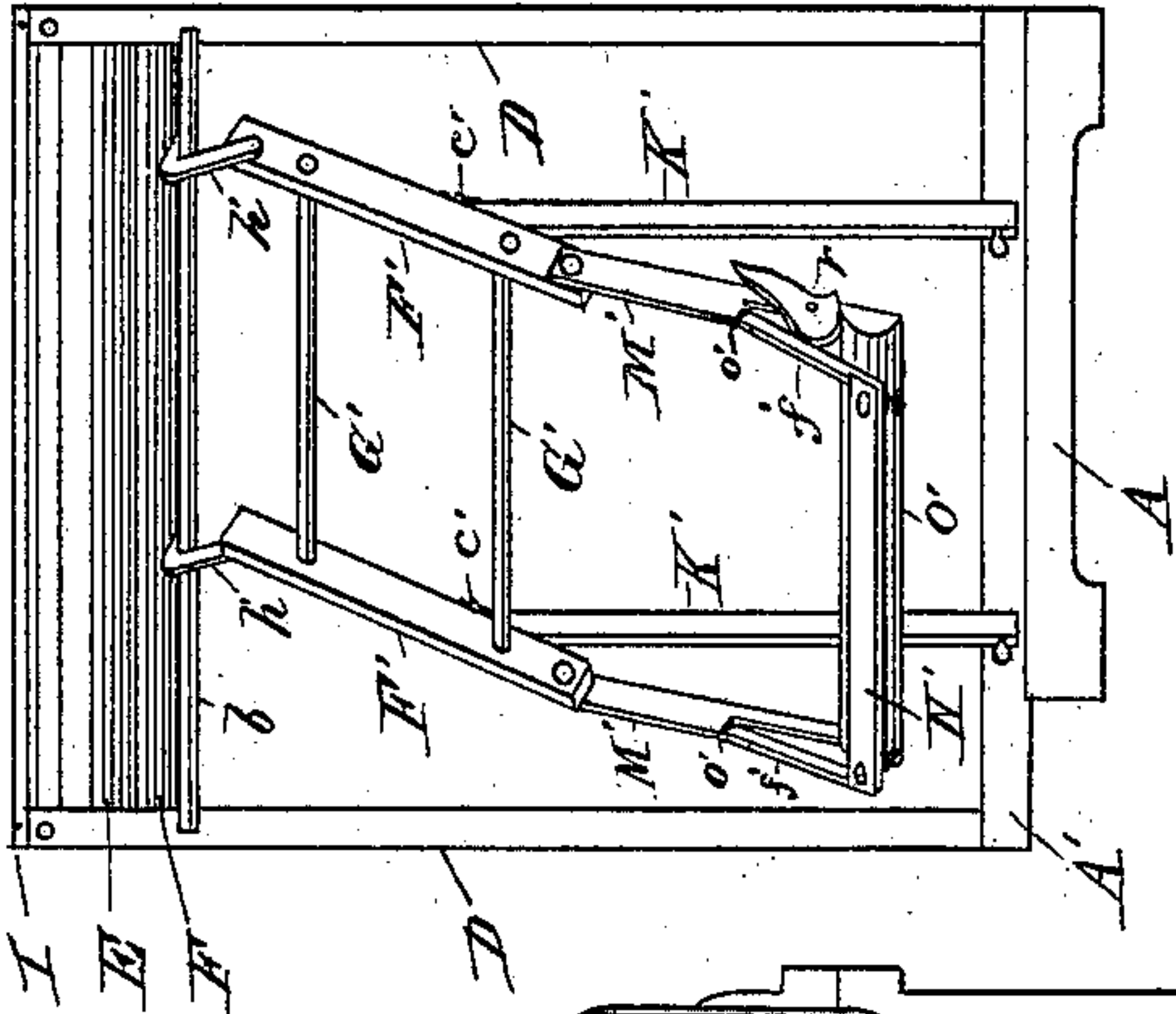


Fig. 4.

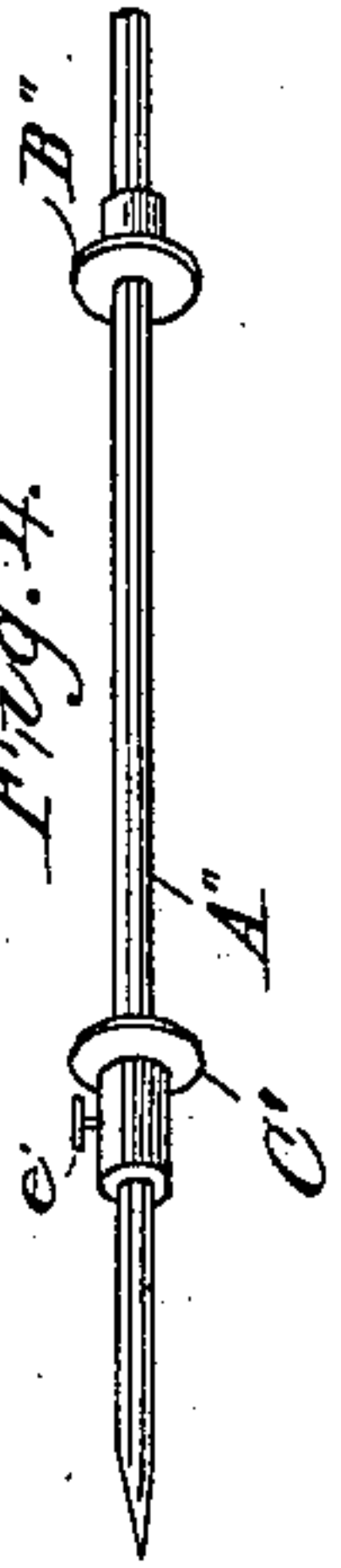
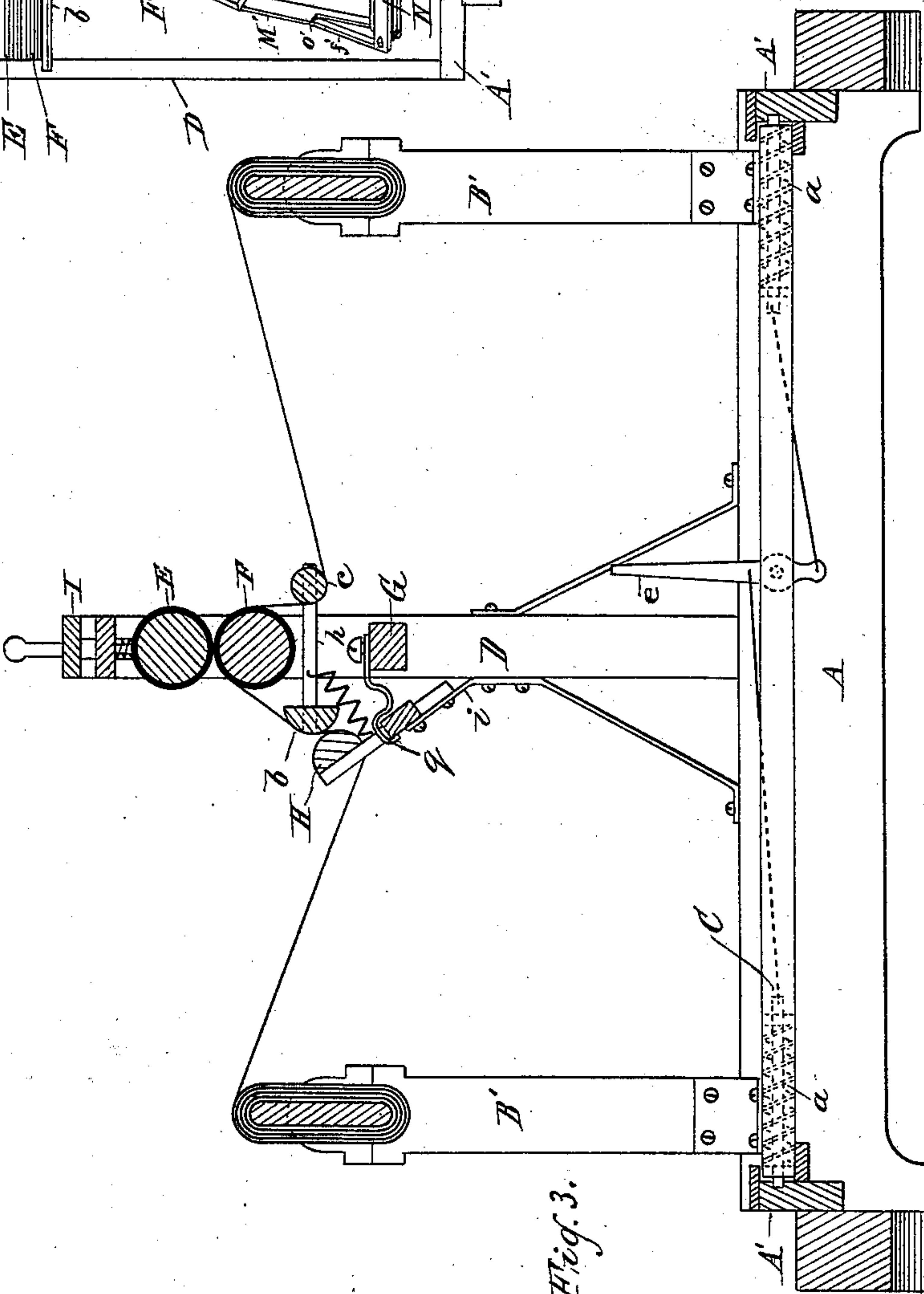


Fig. 3.



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UNITED STATES PATENT OFFICE.

JOHN W. KRUGER, OF LITCHFIELD, MINNESOTA.

FABRIC-MEASURING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 381,842, dated April 24, 1888.

Application filed December 15, 1886. Serial No. 221,661. (No model.)

To all whom it may concern:

Be it known that I, JOHN W. KRUGER, a citizen of the United States, and a resident of Litchfield, in the county of Meeker and State of Minnesota, have invented new and useful Improvements in Fabric-Measuring Apparatus, of which the following is such a full, clear, and exact description as will enable any one skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings and the letters of reference marked thereon.

My invention is designed as an improvement on an apparatus patented to me September 29, 1885, No. 327,178.

The object of my invention is to simplify and improve certain parts of the patented apparatus just referred to.

The invention consists in a variation and improvement of certain details of said patented apparatus, which will be hereinafter described, and pointed out in the claims.

Figure 1 is a side elevation of my improved machine. Fig. 2 is an end elevation at right angles to the plane of Fig. 1. Fig. 3 is a section of my apparatus on the plane 3 3 of Fig. 2. Fig. 4 is an attachment to the machine for measuring fabric without any board, and Fig. 5 an attachment for folded cloth.

The same letters of reference indicate the same parts in the five figures of the drawings.

A represents a rectangular bed-frame, on which is mounted another bed-frame, A', within which slides an adjustable frame, C, in ways upon this frame, as will be clearly seen by Fig. 3. Into the bed A' take spring-bolts, which can be manipulated by handle e, pivoted to a cross-piece of the sliding frame C, the said handle being connected with the bolts by rods, all of which will be clearly seen by reference to Fig. 3. This portion of the apparatus is different from that of the patented machine above referred to, and is one of the features of the present invention. When the handle e is manipulated, the frame C, carrying the standard B' B', Figs. 2 and 3, can be adjusted to any position, depending upon the width of the cloth to be measured. (See Fig. 2.)

Uprights D D are fastened to the beds A and A', and are joined by transverse pieces G and I, constituting a vertical frame, within which are mounted two rollers, E and F, between

which the cloth to be measured is passed. The lower roller, F, has connected with its journal a bevel gear-wheel, which meshes with another bevel gear-wheel connected with a worm, L, whose outer end is supported by an upright piece, K, affixed to the base-frame A. The worm L controls a worm-wheel, M, which in turn governs a wheel, N, having a finger upon it for rotating the wheel O one tooth for each complete revolution of the wheel N. The wheels N and O are provided with pointers and dials, so as to indicate the number of rotations of each.

The mechanism just described is precisely similar to that shown in my patent before alluded to, except that I provide the wheel O with a spring, l, bearing upon the teeth for preventing it from rotating more than one tooth at a time. Another difference over the patented device lies in the little pawl m, which locks the standard Y, carrying the train of gearing just described into engagement with the worm-wheel L. This standard has a reduced end, which takes in a hole in a shelf connected with the standard K. The standard Y, carrying the train of gearing, has its reduced end slipped into a hole of the shelf. It is then raised and the little pawl slipped under the shoulder at the reduced end, so as to throw the wheel M into engagement with the worm. (See Fig. 1.)

I will now proceed to describe some features of my improved apparatus which are not shown in my patented device, and which I desire to claim in this application. These consist of a pivoted rectangular frame-piece, H, which is fastened by means of elastic metal strips i to the uprights D, having spiral springs for drawing the same toward the vertical frame D I G D. Parallel with the roller F, I arrange two pieces, b c, (see Fig. 3,) which are supported from the standards D by means of transverse pieces h. These pieces are rounded, as shown in Fig. 3, the fabric to be measured being adapted to be passed over them. The upper member of the spring-mounted frame H is also rounded, as shown in the figure, for the fabric to travel over. The frame H by means of the spiral spring will clamp the fabric to the piece b. A wire piece, q, is pivoted to the piece G and swings horizontally. It has a shoulder upon it, which, as it is drawn against the lower

piece of the frame H, overcomes the tension of the spiral springs and removes the frame H from the piece *b*, so that the fabric can be slipped between the same. By the mechanism described the cloth can be made to produce sufficient friction upon the roller F to rotate it by the clamping action of the frame H independently of the upper roller, E.

Having explained and described the registering part of my apparatus, the clamping and the sliding frame, I will proceed now to describe the mechanism that holds the cloth before and after it passes through the rollers to be measured. Upon each side of the central vertical frame, D I G D are mounted two standards, B B' and B B', each set being adapted to support the fabric. This portion of the mechanism is substantially the same as that covered in my patent referred to above and operates precisely upon the same principle. The standards B' are mounted upon the adjustable frame C, and may be moved toward or from the standards B, which are securely fastened to the bed-frame A. These standards have a key journaled in them at the top, which key has a groove in it, as shown in Fig. 2, for receiving the end of the board upon which the bolt of cloth or fabric is wound. The frame C, carrying the standards B', is made adjustable in order to allow the apparatus to be adjusted to any width of fabric. The standards B are also provided with keys R, which, by means of the devices now to be described, may be moved toward or from the bolt of cloth. These standards B are each provided with a bed-piece, Q, at the top, upon which is a sliding piece or cross-head, W, through which projects a forked piece, S, pivoted on an extension of the bed Q. The keys R have a spiral spring surrounding them, which may be compressed or extended by moving the part W through the instrumentality of the forked piece S, so that when the distance between the keys R and R' has been set to correspond with the width of the board upon which the fabric is wound the keys R can be moved toward the keys R' to take up the distance corresponding to the depth of the groove in the key-heads, and thus clamp the board in position. One of the standards B is provided with a crank, P, by which means the fabric can be wound from one board onto the other. (See Fig. 1.)

For the purpose of manipulating the bifurcated piece S, cams T are provided, and are hinged to an extension of the standards B, being furnished with handles U, for manual operation. These handles can be locked by means of circular ratchets attached to the standards B in any desired position, and thus throw the cams T and keep them in any position required.

In case the fabric to be measured is not wound upon a board, I journal in the heads of the standards B and B' the ends of a rod, A'', Fig. 4, of any suitable material, pointed at one end, thus dispensing with the keys R R'. This rod has near the one end a fixed piece of iron

or other suitable device, B'', with a round disk, against which, when the rod A'' is run through the roll of fabric, one end of such roll will rest. The rod A'' has at the other end another similar piece of iron or other suitable device, C', which is movable and can be put over the pointed end of the rod A'' and slid up against the fabric, where it is secured by the thumb-screw *e'* to hold the fabric firmly on the rod A''. The adjustable frame C is then moved so as to hold said rod A'' with the roll of fabric thereon in place.

Should the fabric be folded instead of rolled, the same may be placed upon a table or frame composed of the pieces F' F', Fig. 5, and G' G', the former provided with hooks *h' h'* to engage the piece *b*, and hinged to uprights K' K' by means of hinges *c' c'*. The lower ends of the uprights K' K' are pierced by pins, which pass into holes in the bed-frame A', so as to attach the same to the bed-frame. The pieces G' G' are designed in practice to be as long as the pieces *b* and *c*. To the lower ends of the pieces F' F' are pivoted the pieces M' M', the opposite ends of which are connected by the rounded cross-piece O', forming the frame M' M' O', which passes the fabric through and over the pieces G' G'. The pieces *f' f'* are secured to the pieces M' M' by the hinges *o' o'*, and their ends connected by the cross-piece N', which presses down upon the piece O' to hold the fabric securely as it passes between the pieces O' and N'. Upon the piece M' is a cam, *r*, to raise the piece N' to admit the passage of the fabric between the pieces O' and N'. The mechanism just described is designed to dispense with the frame H, before described, when the cloth is folded.

The operation of my apparatus will be sufficiently evident from the above description, and therefore needs no further explanation.

Having now fully set forth my invention, I desire to have it known that I do not wish to limit myself to the exact construction of the improvements shown in this case, as the same may be varied in many ways without departing from the spirit of my invention, and I reserve the right in practice to make all those changes that fall within the scope of what I now desire to claim and secure by Letters Patent, which is—

1. The combination, in a fabric-measuring machine, of the sliding frame C, the bed-frame supporting the same, a handle pivoted to said sliding frame, spring-actuated bolts carried thereby, adapted to take into the bed-frame, rods connecting said handle with the aforesaid bolts, standards B' B', carried by said movable frame, having means thereon for holding the fabric to be measured, standards B B, also having devices thereon for holding the fabric to be measured, and means for adjusting the latter devices toward or from the aforesaid means upon the standards B' B' for holding the fabric independently of the adjustment of the sliding frame carrying said standards B' B'.

2. The combination, in a cloth-measuring

machine, of the fixed rod *b*, an upright frame, D I G D, supporting the same, a movable clamping-frame, H, elastically mounted upon the latter, and a roller, as F, over which the
5 fabric passes, and with which the registering mechanism is attached, for the purpose described.

3. The combination, in a fabric-measuring machine, of the fixed rods *b* and *c*, mounted
10 upon transverse pieces *h*, secured to an upright frame, D I G D, a spring-actuating clamping-frame H, movably attached to the said upright frame, and the roller F, journaled in the upright frame D I G D and suitably
15 connected with registering mechanism, for the purpose set forth.

4. The combination, in a fabric measuring apparatus having a roller, F, suitably geared to the registering apparatus, of a rod, *b*, sub-
20 stantially parallel therewith, a clamping-frame, H, movably attached to an upright frame, springs for holding said clamping-frame against said rod, and a device, as *q*, for manual operation, separating the part H from the part *b*
25 when operated, as and for the purpose set forth.

5. The combination, in a fabric-measuring machine, of a sliding frame, C, mounted in a bed-frame, spring-actuated bolts, and a handle for manipulating the same, mounted upon said
sliding frame, standards B' and B', having
30 means for holding the fabric, said standards being mounted on the aforesaid sliding frame, standards B B, having means for also holding the fabric, and devices thereon for adjusting
35 said means independently of the adjustment of the sliding frame carrying the standards B' B', an upright frame, as D I G D, carrying rollers between which the fabric is adapted to be passed, registering apparatus geared to the lower roller, and a clamp-frame, as H, sub-
40 stantially as and for the purpose set forth.

In testimony whereof I have hereunto set my hand and seal this 10th day of November, 1886, in the presence of the two subscribing witnesses.

JOHN W. KRUGER. [L. S.]

Witnesses:

N. C. MARTIN,
WILHELM ROHL.