

(No Model.)

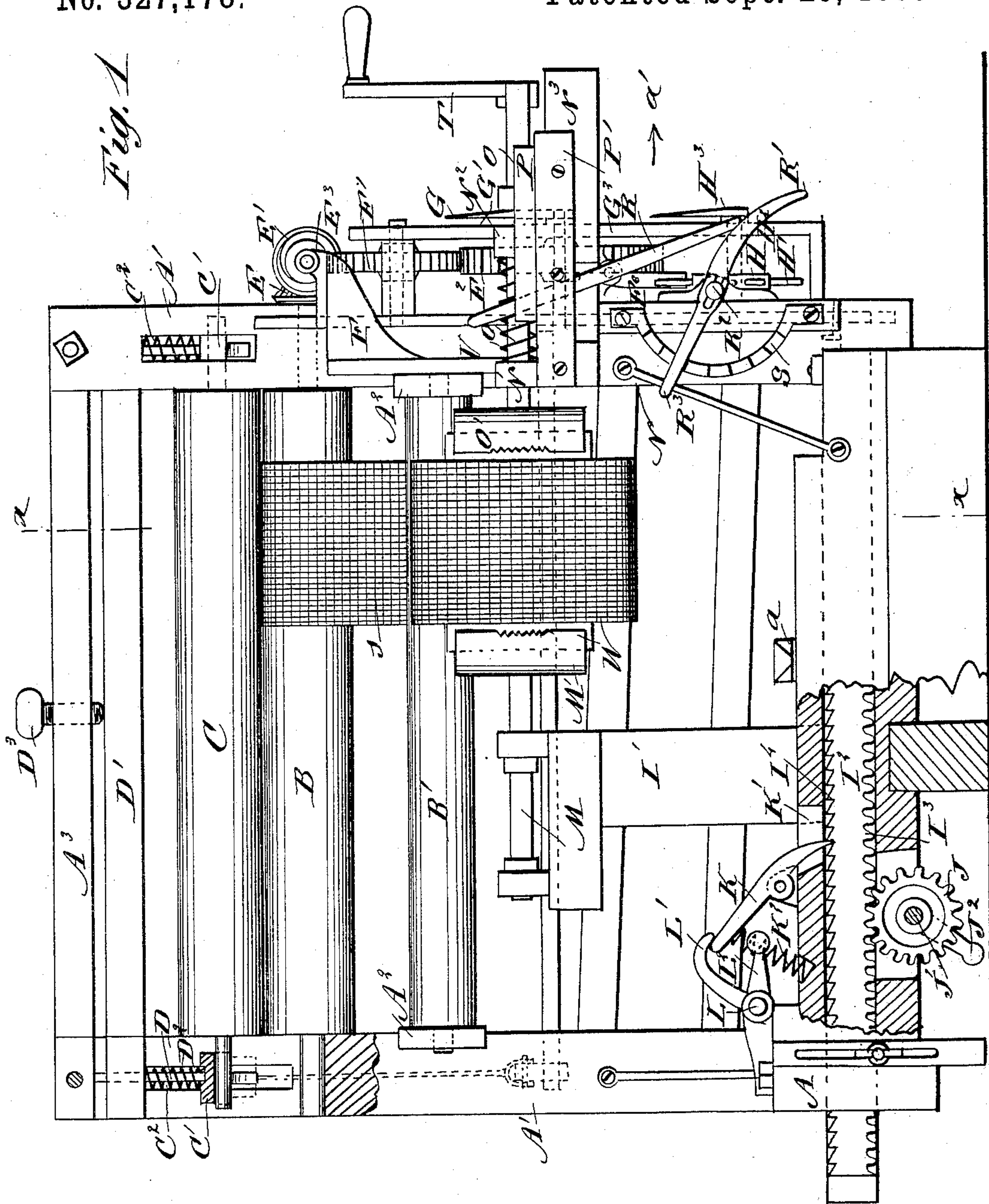
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J. W. KRUGER.

FABRIC MEASURING MACHINE.

No. 327,178.

Patented Sept. 29, 1885.



WITNESSES:

*C. Nèveux*  
*L. Sedgwick*

INVENTOR:

*J. W. Kruger*  
BY *Munn & Co*  
ATTORNEYS.

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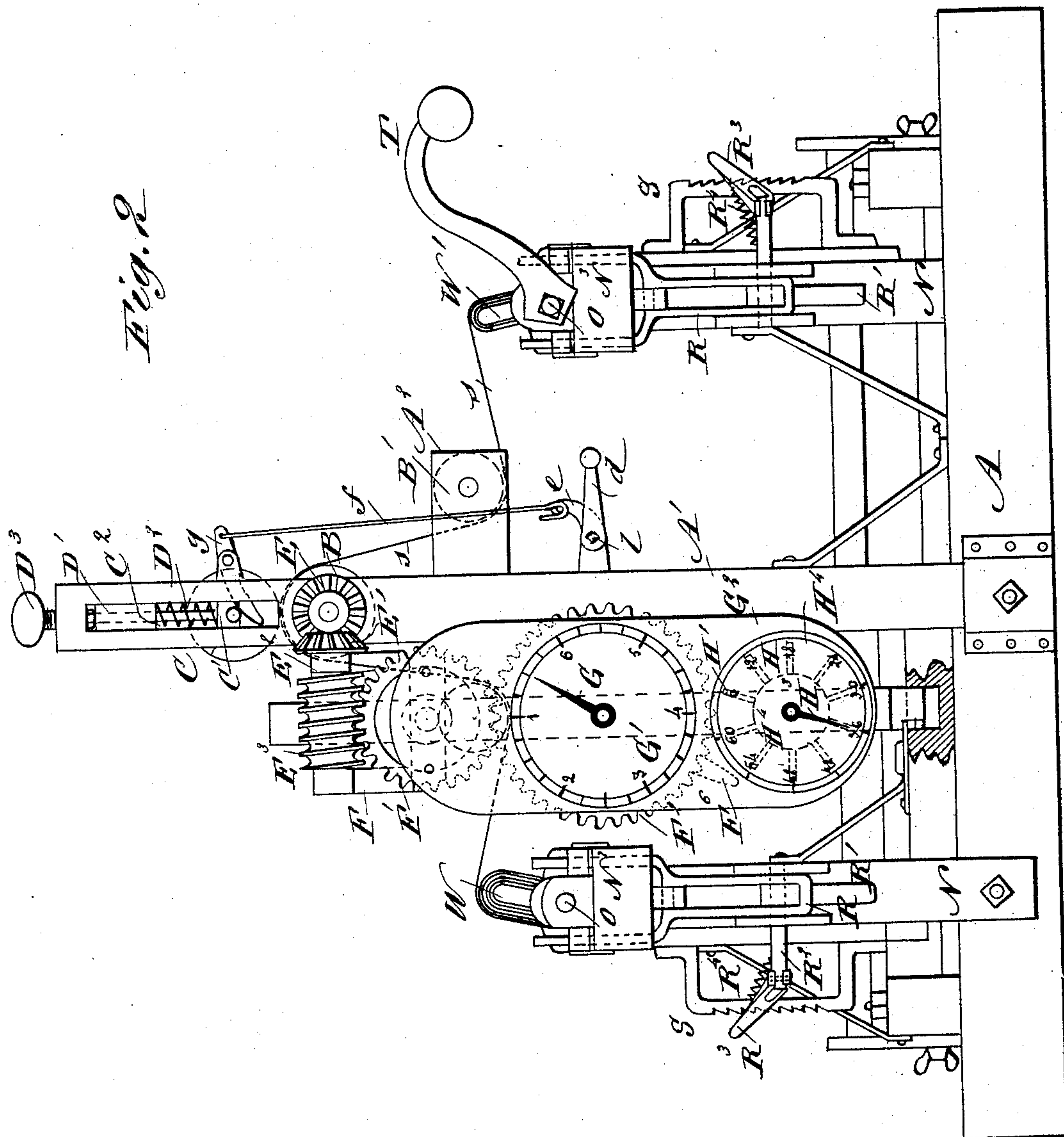
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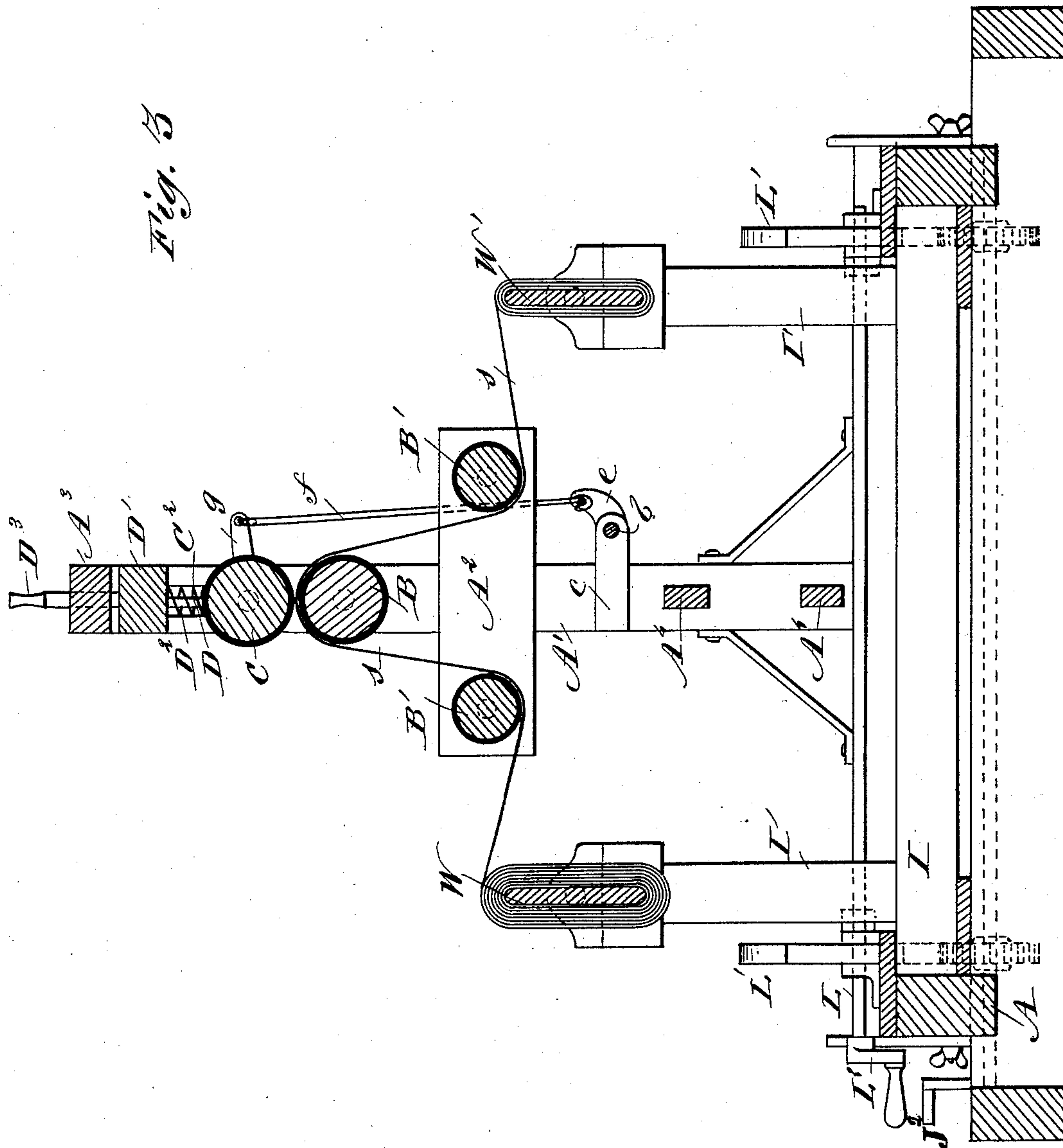
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# UNITED STATES PATENT OFFICE.

JOHN W. KRUGER, OF LITCHFIELD, MINNESOTA.

## FABRIC-MEASURING MACHINE.

SPECIFICATION forming part of Letters Patent No. 327,178, dated September 29, 1885.

Application filed June 2, 1885. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN W. KRUGER, of Litchfield, in the county of Meeker and State of Minnesota, have invented a new and Improved Fabric-Measuring Machine, of which the following is a full, clear, and exact description.

The object of my invention is to provide a new and improved machine for measuring all kinds of fabric.

The invention consists in the construction and combination of measuring-rollers, fabric-holding devices, and other parts and details, as will be fully described and set forth herein after.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a front view of my improved cloth-measuring machine. Fig. 2 is a side view of the same. Fig. 3 is a cross-sectional elevation of the same on the line *x x*, Fig. 1.

On a base-frame, A, two standards, A', are held, on which cross-pieces A<sup>2</sup> are secured.

A felt-covered roller, B, is journaled in the uprights A', and two guide-rollers, B', are journaled in the ends of the cross-pieces A<sup>2</sup>.

A felt-covered roller, C, is mounted above the roller B in journal-boxes C', mounted to slide vertically in slots C<sup>2</sup>, in the upper ends of the standards A', and from the said journal-boxes rods D project upward and through a cross-piece, D', the ends of which are guided to move vertically in the slots C<sup>2</sup>, which rods D are surrounded by spiral springs D<sup>2</sup>, between the journal-boxes and the bar D'.

An adjusting-screw, D<sup>3</sup>, is screwed through the top cross-piece, A<sup>3</sup>, uniting the standards A', the lower end of the screw resting on the top of the bar D'.

On the end of the roller B a bevel cog-wheel, E, is mounted, which engages with a bevel cog-wheel, E', on a shaft, E<sup>2</sup>, journaled in a frame, F, secured to one standard A', on which shaft E<sup>2</sup> the worm E<sup>3</sup> is formed, which engages with a worm-wheel, F', engaging with a cog-wheel, F<sup>2</sup>, mounted on the same shaft with a hand, G, which revolves over a dial, G', formed on the face of a plate, G<sup>2</sup>, held on the frame F. The tooth F<sup>6</sup> on the cog-wheel F<sup>2</sup> engages with pins H', mounted on a disk,

H, on a shaft, H<sup>2</sup>, provided at its end with a counter, H<sup>3</sup>, which revolves over a dial, H<sup>4</sup>, formed on the lower part of the plate G<sup>2</sup>. The hand G moves over one subdivision of its dial for each quarter of a yard; but it takes more than one revolution of the roller B to measure one-quarter of a yard. For every revolution of the shaft B, equal to six yards, the hand H<sup>3</sup> moves over one subdivision of its dial H<sup>4</sup>. The fabric is thus measured, the quantity being shown by means of the above-mentioned dials.

A sliding frame, I, is mounted in the base-frame A and carries two standards, I', one at each side of the frame formed by the uprights A', and the top bar, A<sup>3</sup>, and bottom bars, A<sup>4</sup>, uniting them. The longitudinal bars I<sup>2</sup> each have an ordinary rack, I<sup>3</sup>, formed on the bottom edge and a ratchet-rack, I<sup>4</sup>, on the top edge, the bottom racks engaging with pinions J, mounted on a transverse shaft, J', having a crank, J<sup>2</sup>, at one end.

On the base-frame A two pawls, K, are pivoted, the lower ends of which are in slots K' in those parts of the base-frame in which the bars I<sup>2</sup> slide, the opposite ends of said pawls being pressed upward by the springs K<sup>2</sup>, so as to press the pawls against the ratchet-teeth on the bars I<sup>2</sup>.

On a shaft, L, journaled on the base-frame, curved arms L' are mounted, the upper ends of which are above the raised ends of the pawls or dogs K, and the said shaft L is provided at one end with a crank-handle, L<sup>2</sup>, for turning it in such a manner as to press the arms L' on the raised ends of the dogs K and disengage the other ends of the dogs from the ratchet-teeth in the tops of the bars I<sup>2</sup>. The bars I<sup>2</sup> are united by suitable cross-bars to form a solid and rigid frame.

In the upper end of each standard I' of the sliding frame a shaft, M, is journaled, on the end of which a fork, M', is formed, parts of the edges of the prongs of the fork being beveled.

A standard, N, is provided in front of and behind the frame formed of the uprights A' and the bars uniting them, and a rod, O, having a fork, O', on its end, is mounted on a top piece, N', of the standard and in a bearing, N<sup>2</sup>, in such a manner that the said rod O can move in the direction of its length and turn on its longitudinal axis. The bearing N<sup>2</sup> is



formed between two bars, P, mounted to slide in the direction of their length on the top plate, N<sup>3</sup>, of the standard N, which bars P are suitably guided by plates P', secured on the sides of the top plate, N<sup>3</sup>.

A forked rod, R, is pivoted in the underside of the top plate, N<sup>3</sup>, and its prongs are passed through slots in the bars P, the lower end of the forked rod R resting against the cam-arm R' of a shaft, R<sup>2</sup>, mounted to turn in the standard or upright N, to the end of which shaft R<sup>2</sup> a crank, R<sup>3</sup>, is pivoted, which has a sharp edge formed on its inner side, the said sharp edge being drawn by a powerful spring, R<sup>4</sup>, against a semicircular toothed bar, S, secured on the standard or upright.

One of the shafts O is provided with a crank-handle, T, for turning it. A pointer, a, is secured on the sliding frame I, and projects over that part of the frame A in which the toothed bars I<sup>2</sup> can slide.

A shaft, b, journaled in arms c of the standards A', is provided at one end with a crank-handle, d, for turning it. The shaft b has arms e, which are connected by rods f with levers g, pivoted in jaws projecting from the standards A' and extending below the pivots of the top roller, C, whereby by pressing down the crank-arm d the outer ends of the levers g are swung down and the inner ends raise the upper roller, C, sufficiently to permit of passing the cloth under it.

The board W, from which the fabric to be measured is wound, is to be held between the forks M' and O' on one side of the machine, and the board W', upon which the fabric is to be wound, is held in a like manner on the other side.

According to the width of the boards and of the piece of fabric on the same, the standards I' must be adjusted a greater or less distance from the standards N, carrying the shafts O. To adjust said standards, the shaft L is turned by means of its crank-handle L<sup>2</sup> in such a manner that the arms L' press on the upper ends of the pawl levers or dogs K and disengage their lower ends from the racks on the bars I<sup>2</sup>, and then the shaft J' is turned by means of its crank-handle J<sup>2</sup> in such a manner as to cause the cog-wheels J, engaging with the racks I<sup>3</sup> on the bottom edges of the bars I<sup>2</sup>, to move the said racks, and the standards I' on them, toward or from the standards N. The pointer a facilitates the adjustment of the movable frame according to the class of goods to be wound.

On the movable frame a strip is secured, on which the names of the various kinds of fabrics are written or otherwise produced in the order of their width, so that by adjusting the apparatus so that the pointer is above the name of a certain kind of goods the device will be adjusted to hold the board on which said goods are wound. The arms R<sup>3</sup> are raised, whereby the cam-arms R' are swung down, permitting the springs V, surrounding the rods O, to push the bearing N<sup>2</sup>, and the rod

O, mounted in the same, in the direction of the arrow a'—that is, from the fork M'. The boards W and W' are then placed between the forked pieces M' and O', on opposite sides of the upright frame, and the levers R<sup>3</sup> are pressed down, whereby the cam-levers R' are raised, and, acting on the lower ends of the pivoted bars R, throw the said lower ends in the direction of the arrow a' and the upper ends in the inverse direction of the arrow a', and force the sliding bars P and the rod or shaft O in the inverse direction of the arrow a', whereby the spring V is compressed and the forked piece O' pressed against the end of the board. The spring R<sup>4</sup> presses the inner edge of the lever R<sup>3</sup> in one of the recesses of the semicircular rack S, thus locking the lever R and the other parts connected with the same in place. The fabric s is then passed under one roller B', over the roller B, and under the other roller B', and secured on the board W', which is held in the manner set forth. By pressing down on the handle d the levers g raise the pressure-roller C, to permit of passing the fabric s between the rollers B and C. The machine is now ready for operation.

By means of the crank-handle T that rod O on which the empty board is held is revolved, and the fabric is wound on the same and unwound from the board W. As the fabric passes over the roller B it revolves the same, and from said roller the counting-wheel F<sup>2</sup> and its pointer G are revolved. The projecting tooth F<sup>6</sup> of the wheel F<sup>2</sup>, engaging with the pins H', revolves the same and the pointer H<sup>3</sup>, the said pointers G and H<sup>3</sup> thus showing the number of yards that have been unwound. The cloth or other fabric can thus be wound and unwound accurately, and by the same operation it is measured, and the machine can be used for measuring goods of different widths.

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

1. In a fabric-measuring machine, the combination, with an upright frame, of a measuring-roller journaled in the same, a pressure-roller resting on the measuring-roller, levers below the pivots of the pressure-roller, and rods and levers for pressing down the ends of the said levers below the pivots of the pressure-roller for the purpose of raising the said pressure-roller to permit of passing the fabric between the said pressure-roller and the measuring-roller, substantially as herein shown and described.

2. In a fabric-measuring machine, the combination, with the uprights A', of the measuring-roller B, the pressure-roller C, springs for pressing the pressure-roller C upon the measuring-roller B, the levers g, below the pivots of the roller C, the rods f, the arms e, projecting from a shaft, b, and the crank d, for turning the said shaft, substantially as herein shown and described.

3. In a fabric-measuring machine, the combination, with two standards, of rods mounted



to turn on the standards, and having forked ends, a sliding frame in which one of the rods is journaled, a lever pivoted below and extending through a groove in the sliding frame and operating it, and a cam-arm acting on the said lever, substantially as herein shown and described.

4. In a fabric-measuring machine, the combination, with two standards, of rods mounted to turn on their longitudinal axis in the standards and having their adjacent ends forked, a sliding piece in which one of the rods is journaled, a lever pivoted below and extending through a groove in the sliding frame and operating it, a shaft having a cam-arm acting on the lower end of the said lever, and a handle, spring, and curved rack for locking the said shaft in place, substantially as herein shown and described.

5. In a fabric-measuring machine, the combination, with two standards, of rods journaled in the same to revolve on their longitudinal axes and having the adjacent ends forked, a sliding frame in which one of the rods is journaled, a spring surrounding the rod and acting on the same, a lever pivoted below and extending through a groove in the sliding frame and operating it, a shaft provided with a cam-arm acting on the lower end of the pivoted lever, a handle-lever for turning the shaft, a semicircular rack, and a spring for pressing the handle-lever against the said rack, substantially as herein shown and described.

6. In a fabric-measuring machine, the combination, with a base-frame, of an upright frame carrying measuring-rollers, a movable frame in the base-frame, standards on the base-frame and on the movable frame, rods mounted on the standards and having their adjacent ends provided with forks for receiving the ends of the boards on which the fabric is wound, mechanism for shifting the movable frame, and a pointer projecting from the movable frame, substantially as herein shown and described.

7. In a fabric-measuring machine, the combination, with a base-frame, of an upright frame carrying measuring-rollers, a sliding frame in the base-frame, rods on the base-frame and on the movable frame for holding the boards on which the fabric is wound, pawls engaging with racks formed on the movable frame, and pinions or cog-wheels engaging with the racks on the movable frame, substantially as herein shown and described.

8. In a fabric-measuring machine, the combination, with a base-frame, of an upright frame carrying measuring-rollers, standards on the upright frame, a movable frame on the base-frame, which movable frame has racks formed on the top and bottom edges of the side bars, standards on the movable frame, rods in the standards on the base and movable frames for the purpose of holding boards on which fabric is wound, pawls pivoted on the base-frame and engaging with the top racks on the side bars of the movable frame, springs acting on the pawls, a shaft provided with curved arms above the upper ends of the pawls, and with a crank-handle for turning the shaft and pressing the cam-arms on the pawls, and of gearing on the movable frame, substantially as herein shown and described.

9. In a fabric-measuring machine, the combination, with a base-frame, of an upright frame carrying rollers, a movable frame on the base-frame, standards on the movable frame for holding one end of the boards on which the fabric is wound, racks formed on the side bars of the movable frame, the shaft J', the pinions or spur-wheels J on the same engaging with the racks on the side bars of the movable frame, the pawls K, the springs K<sup>2</sup>, the shaft L, the arms L', and the crank-handle L<sup>2</sup>, substantially as herein shown and described.

JOHN W. KRUGER.

Witnesses:

WILHELM ROEHL,  
JAMES M. RUSSELL.