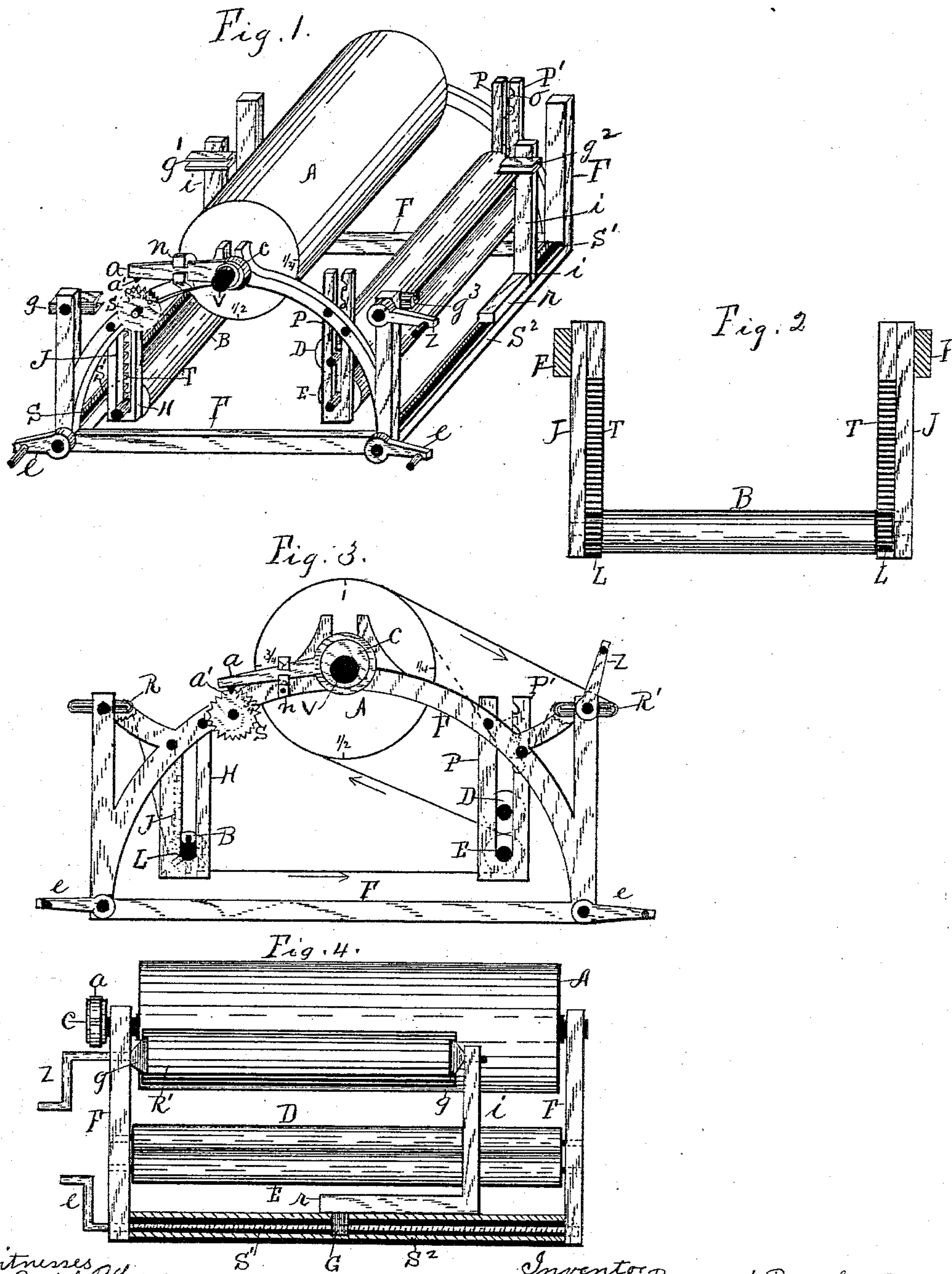


(No Model.)

B. A. ROATH.
CLOTH MEASURING MACHINE.

No. 411,874.

Patented Oct. 1, 1889.



Witnesses
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UNITED STATES PATENT OFFICE.

BYRON A. ROATH, OF MARSEILLES, ILLINOIS.

CLOTH-MEASURING MACHINE.

SPECIFICATION forming part of Letters Patent No. 411,874, dated October 1, 1889.

Application filed June 6, 1889. Serial No. 313,415. (No model.)

To all whom it may concern:

Be it known that I, BYRON A. ROATH, a citizen of the United States of America, residing at Marseilles, in the county of La Salle and State of Illinois, have invented certain new and useful Improvements in Cloth-Measuring Machines, of which the following is a specification, reference being had therein to the accompanying drawings and the letters and figures of reference thereon, forming a part of this specification, in which—

Figure 1 is a perspective view of the cloth-measuring machine. Fig. 2 is a side view of one of its tension-rolls having pinions at either end and vertical racks for engaging said pinions. Fig. 3 is a side elevation of the machine, and Fig. 4 is an end elevation of the machine looking at its delivery end.

This invention relates to certain improvements in machines for measuring piece goods to ascertain the exact length or number of yards and fractions of a yard in a given piece of goods and is generally intended for use by a merchant to measure goods purchased or to take an inventory of a stock of goods capable of being thus measured.

Referring to the drawings, F represents the main frame of the machine.

A is a measuring-roll located in the upper part of the machine about centrally across it and having its shaft V boxed at either end in the frame F. At one side of said measuring-roll and on a lower plane is located a pair of parallel smaller rolls D and E, the shafts of which rolls extend through a slot-box between posts P and P', secured to frame F, the post P' having its side toward said rolls provided with notch-boxes O for adjustably supporting the roll D.

B is a tension-roll located on the opposite side of measuring-roll A from rolls D and E and on about the same plane with roll E, and has its shaft journaled at each end in a slot-box between posts H and J. Said roll is provided at each end with pinions L L, which mesh with the vertical racks T T, arranged on the side of posts J J, as shown particularly in Fig. 2. Said roll does not revolve except when carried up and down by the cloth passing through the machine, when it is rotated in either direction by said rack and pinions,

the object of said racks and pinions being to preserve a horizontal position to said roll.

One outer end of the shaft V of measuring-roll A is provided with a cam c. The eccentric strap surrounding said cam projects to one side and forms the arm a, which is supported about centrally in the fulcrum-box n, attached to frame F, so that when roll A rotates it will through the medium of said cam oscillate and reciprocate arm a.

S is a wheel having its periphery notched to form a spur-wheel journaled on a stud secured to frame F immediately under the outer end of arm a, so that when said arm is operated as stated the lug a' on its under side will engage one of the notches of wheel S and rotate it forward one notch at each revolution of roll A, said notches being numbered, beginning with 1 and running up to any number of notches it is desired to place on said wheel compared with the size of roll A. Said roll A is intended to measure one yard around its circumference and having one or both ends divided up into fractions of a yard, as shown, or divided in any other way to suit the fancy or as it may be necessary to operate the machine properly.

The roll of cloth to be measured is intended to be held between the holding-chucks g g', having cross-grooves for receiving the ends of the board on which the cloth is wound, and the similarly-arranged chucks g² g³ at the opposite side of the machine are for holding the board upon which the cloth is to be wound off of the opposite board. All of these chucks are provided with rearwardly-extending shafts journaled in the posts to which they attach, so the chucks may rotate.

The chucks g and g³ are journaled in a corner-post of frame F near their upper end, and chuck g³ is provided with crank Z, by turning which the cloth is drawn through the machine and wound on the board engaged by said chuck.

The chucks g' and g² are journaled in posts i. The posts i are provided at their lower ends each with a horizontal foot r, which lies on the upper side of the cross-beams S² of frame F. These cross-beams are channeled on their upper side, in which channel is arranged a screw-threaded rod S', journaled at

each end in the frame and bearing the nut G, attached to the lower side of foot *r*. One end of each of said screws *S'* projects in the form of cranks *e*, by means of which they are turned to move posts *i* in line with beams *S*² for the purpose of causing the chucks to engage and hold the boards of different lengths of cloth and for rendering it easy to secure the boards upon which the cloth is rolled in their proper places in order to operate the machine.

In operation, the roll of cloth *R* to be measured is placed between and held by the chucks *g* and *g'* in such manner that it may rotate and permit the cloth to be unwound from it, and finally wound on a board to form roll *R'*. Fig. 2 shows the line of the cloth as it passes from the roll *R* to a board held between the opposite chucks *g*² *g*³ to form the new roll *R'*. The cloth passes from roll *R* under roll *B*, from said roll under and around roll *E* to its upper side, from thence over measuring-roll *A*, and from thence to the board between chucks *g*² and *g*³, which are driven by crank *Z* to wind up the cloth as it comes from measuring-roll *A*. Each revolution of said measuring-roll will rotate the spur-wheel *S* a notch, and thus indicate that a yard of cloth has passed over said roll and been wound on roll *R'*. The roll *B* rests on the cloth as it is passing through the machine and is for the purpose of giving a yielding tension to the cloth, so it will not be torn or stretched in case it does not unwind readily from roll *R*, as said roll being flattened causes the cloth to unwind with uneven tension and sometimes refuse to unwind on account of pulling at times from near the axis of the roll. Said roll *B* does not rotate except when moved up or down by means of the tension of the cloth brought to bear under it, and when it does move it is caused to rotate by means of its pinions *L L* being in mesh with

the vertical rack *T' T*, so that the horizontal position of said roll will be maintained and not rest at one end on the cloth more than at the other end, and thus stretch or injure one edge of the cloth. Sometimes the cloth is folded lengthwise, so as to be double throughout its length, and when thus doubled is inclined to run to one side and not wind evenly on the new roll. In order to prevent such difficulty when the cloth is thus folded, the roll *D* is elevated so its shafts lie in one of the notch-boxes *O* in posts *P'* and the cloth passed under it, so that the weight of said roll will be on the upperside of the cloth, as shown in broken lines in Fig. 3. Such pressure of said roll on the upper side of the cloth between roll *A* and the roll *R'* being formed will obviate the difficulty of the cloth running or drawing to one side and cause it to roll straight on the roll *R'*. Said roll *D* may be arranged to be supported in any one of the notch-boxes *O* to give more or less pressure to the cloth, as may be necessary and according to the character of the cloth.

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

In combination with the frame *F*, the measuring-roll *A*, having the cam *c* and cam-strap forming arm *a*, provided with lug *a'*, roll *B*, having the pinions *L L*, racks *T T*, for engaging said pinions, rolls *D* and *E*, the roll *E* being adapted to be vertically adjusted in boxes *O*, rotatable chucks *g*, *g'*, *g*², and *g*³, having crank *Z*, adjustable posts *i*, and screw-rods *S'*, having cranks *e*, substantially as and for the purpose set forth.

BYRON A. ROATH.

Witnesses:

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