G. P. BAKER.

CLOTH-MEASURING MACHINE.

No. 192,962. Patented July 10, 1877.

Fig. 1.

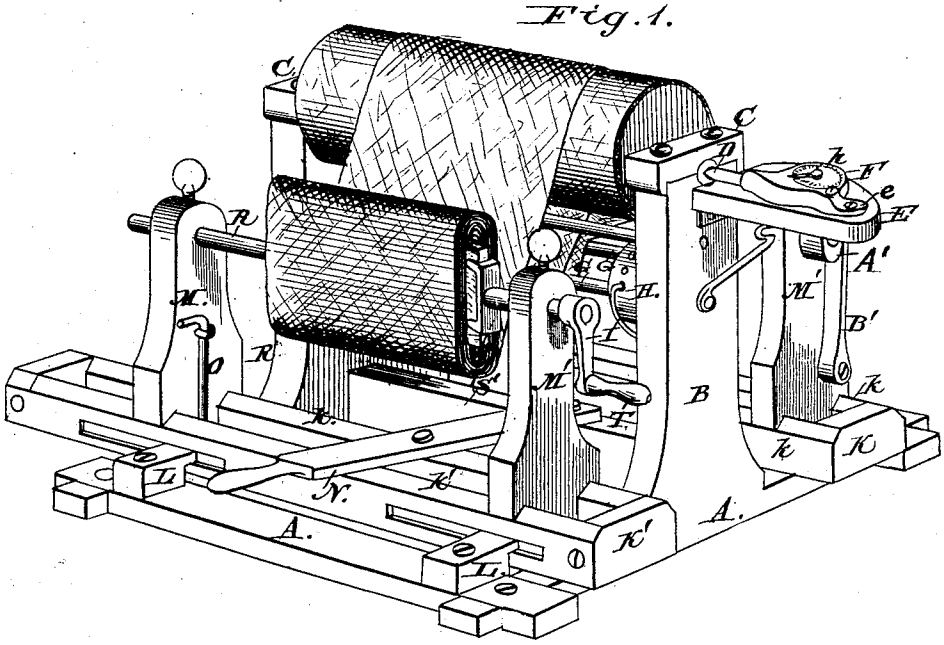


Fig. 3.

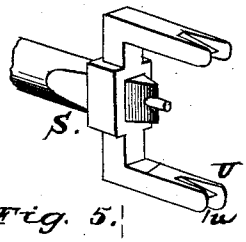


Fig. 4.

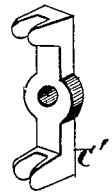


Fig. 2.

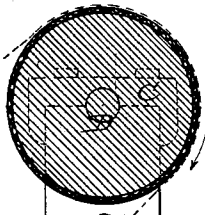
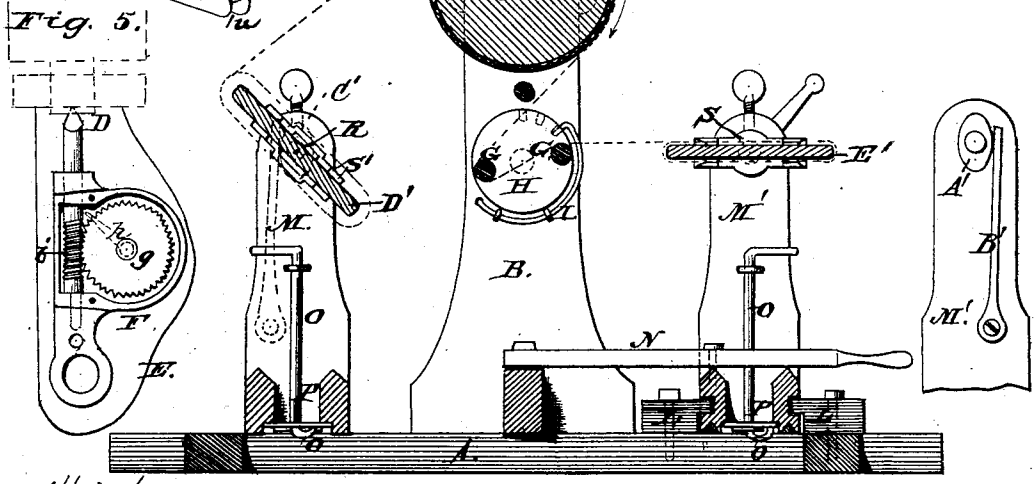


Fig. 5.



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UNITED STATES PATENT OFFICE.

GEORGE P. BAKER, OF EAST AURORA, NEW YORK, ASSIGNOR OF ONE-HALF HIS RIGHT TO SYLVANUS B. THOMSON, OF SAME PLACE.

IMPROVEMENT IN CLOTH-MEASURING MACHINES.

Specification forming part of Letters Patent No. **192,962**, dated July 10, 1877; application filed May 1, 1877.

To all whom it may concern:

Be it known that I, GEORGE P. BAKER, of East Aurora, in the county of Erie and State of New York, have invented certain new and useful Improvements in Cloth Measuring and Winding Machine, of which the following is a specification:

This invention relates to certain improved apparatus for winding and measuring fabrics of various descriptions, and is intended particularly for general use in dry-goods stores and other like establishments.

This invention consists, essentially, in the combination, in a cloth-measuring machine, of a movable bed provided with puppets having centers for supporting the winding-board of the cloth with a lever for operating the bed and enabling the operator to wind the cloth truly upon said board, as will be more fully hereinafter described.

The invention also consists of certain other features, which will be fully hereinafter described, and pointed out in the claims. A preliminary explanation is deemed unnecessary.

In the drawing, Figure 1 represents a perspective view of my improved apparatus; Fig. 2, a transverse vertical section of the same; Fig. 3, a detached perspective view of one of the centering devices with its carrier for supporting the end of the boards which support the fabric; and Fig. 4, a similar view of a modified form of the carrier; and Fig. 5, a detached view of the measuring device, showing the interior of the same.

The letter A represents a strong frame, having located on opposite sides the vertical standards B B, to the upper ends of which are secured the journal-boxes or bearings C C, in which the opposite ends of the journals D of the measuring-drum are journaled. Said measuring-drum is covered with woolen cloth or felt, in order that the cloth may not slip upon the measuring-drum, and thus insure its proper rotation.

To one of the standards which support the measuring-drum is secured a bracket, E, having a horizontal upper face, which is just on or about on a line with the axis of the measuring-drum. To the upper face of said bracket is secured the measuring device. Said measuring device consists of a flat cylindrical casing, F, with a tangential projection having a ring or handle, *e*, by means of which it can be conveniently handled, and an aperture for a screw, by means of which the device may be secured to the bracket, a suitable recess being formed on the upper face of said bracket. Said casing is provided with a toothed wheel, *g*, to the journal of which is attached an index, *h*, which travels within a circular dial on the upper face of the casing, having suitable graduations to register the revolutions of the wheel. Said wheel gears into a tangential worm, *i*, which projects at one side of the casing, its extremity being keyed into the shaft of the measuring-drum, so as to rotate therewith and transmit motion to the toothed wheel, and the index attached to its journal.

Immediately below the measuring-drum is located a tension device for regulating the tension of the fabric as it is drawn over said drum. Said tension device consists of two parallel rods, G G, secured at their ends to the disks H H, which are journaled to the standards which support the measuring-drum. One or both of said disks are provided with apertures in their peripheries, into which the end of a spring, I, secured at its other end to the supporting-standard, is adapted to be secured.

In the present instance, curved wire springs are represented, but in a full working machine spiral springs will be found preferable.

At each side of the supporting-standards, and parallel with the axis of the measuring-drum, is located a bed, K K′, provided with parallel shears *k k′*, similar to the shears of an ordinary lathe-bed. The bed K is permanently fastened to the base of the apparatus; but the bed K′ is capable of a longitudinal motion thereon, being arranged to travel back and forth between the guides L, and operated by means of a lever, N, pivoted at one end to the base of the apparatus.

The beds are each provided with puppets or heads M M′, which rest and are adapted to move upon the shears, each being provided with an upright rod, O, extending below through a clamping-plate, P, the lower end of each rod being provided with a cam, *o*, and the upper end with a lever, by means of which the cams can

be turned so as either to bind the cams against the plates and fasten the puppets in any desired position, or loosen the cams to allow the puppets to be moved. The puppets M are each provided with an adjustable center, R, and the puppets M′ with revolving mandrels S S′.

The mandrel S is provided at one end with a handle, T, by means of which it may be rotated, and the other end with a bifurcated chuck, U, having recesses *u* at the ends, which embrace the board upon which the cloth is to be wound.

The mandrel S′ is provided at its outer end with a cam, A′, against the periphery of which bears one end of a flat spring, B′, attached to the puppet. The inner end of said mandrel is formed in the shape of the strut-chuck of an ordinary lathe, the relative positions of said chuck and the aforementioned cam being such that when the board, properly chucked, is parallel to the line of draft of the cloth the spring will bear lightly against the cam, or will not bear against it at all, allowing the board to revolve freely, and as it passes away from said position the spring will bear with gradually-increasing force against the cam until the board is at right angles to the line of draft of the cloth, when the pressure will be at its maximum, thus making the draft of the cloth uniform throughout the changes of the position of the board.

The letter C′ represents a bifurcated chuck, similar to the chuck U, which may be secured to the end of the mandrel S′, and is intended to be employed when the board carrying the cloth is less in length than the width of the cloth, to prevent the edges of the same from coming into contact with the working parts of the apparatus.

The operation of my invention is as follows: The board D′, upon which the cloth is wound in the bolt, is properly centered between the center R and mandrel S′, or the chuck thereon, after which the free end is carried first over the upper bar of the tension device; then under the lower bar; from thence over the measuring-drum, and is finally carried down and secured to one edge of the board E′, upon which the cloth is to be finally wound, said board being properly centered between the mandrel S and the center R. The mandrel S is then rotated in proper direction by means of its handle carrying the board and winding the cloth or fabric upon it. The cloth or fabric passes over the measuring-drum, the circumference of which corresponds to a known measure, and as the drum revolves its revolutions are registered by the registering device, recording exactly the quantity of cloth or fabric drawn over the drum.

The tension device below the drum, and over which the cloth passes, insures a uniform draft of the fabric, and compensates for any inequalities in the same, while the cam or mandrel S provides against any irregularity of draft caused by the varying position of the board D′, thus rendering the apparatus perfectly accurate in its operation.

What I claim, and desire to secure by Letters Patent, is—

1. The combination, in a cloth-measuring machine, of a movable bed provided with puppets, having centers for supporting the winding-board of the cloth with a lever for the purpose of enabling the operator to wind the cloth truly upon said board, substantially as set forth.

2. In combination with the mandrel S and its chuck, the cam on its rear end, and spring-bearing against the same to regulate the draft of the cloth, substantially as set forth.

3. The spring I, secured at one end to the supporting-standard of the winding-drum, and having its free end bent and adapted to engage with one of the disks H carrying the parallel rods G, the whole being constructed and combined substantially as and for the purpose described.

In testimony that I claim the foregoing I have hereunto set my hand in the presence of the subscribing witnesses.

GEORGE P. BAKER.

Witnesses:

CHAS. E. LAMB,

W. D. JONES.