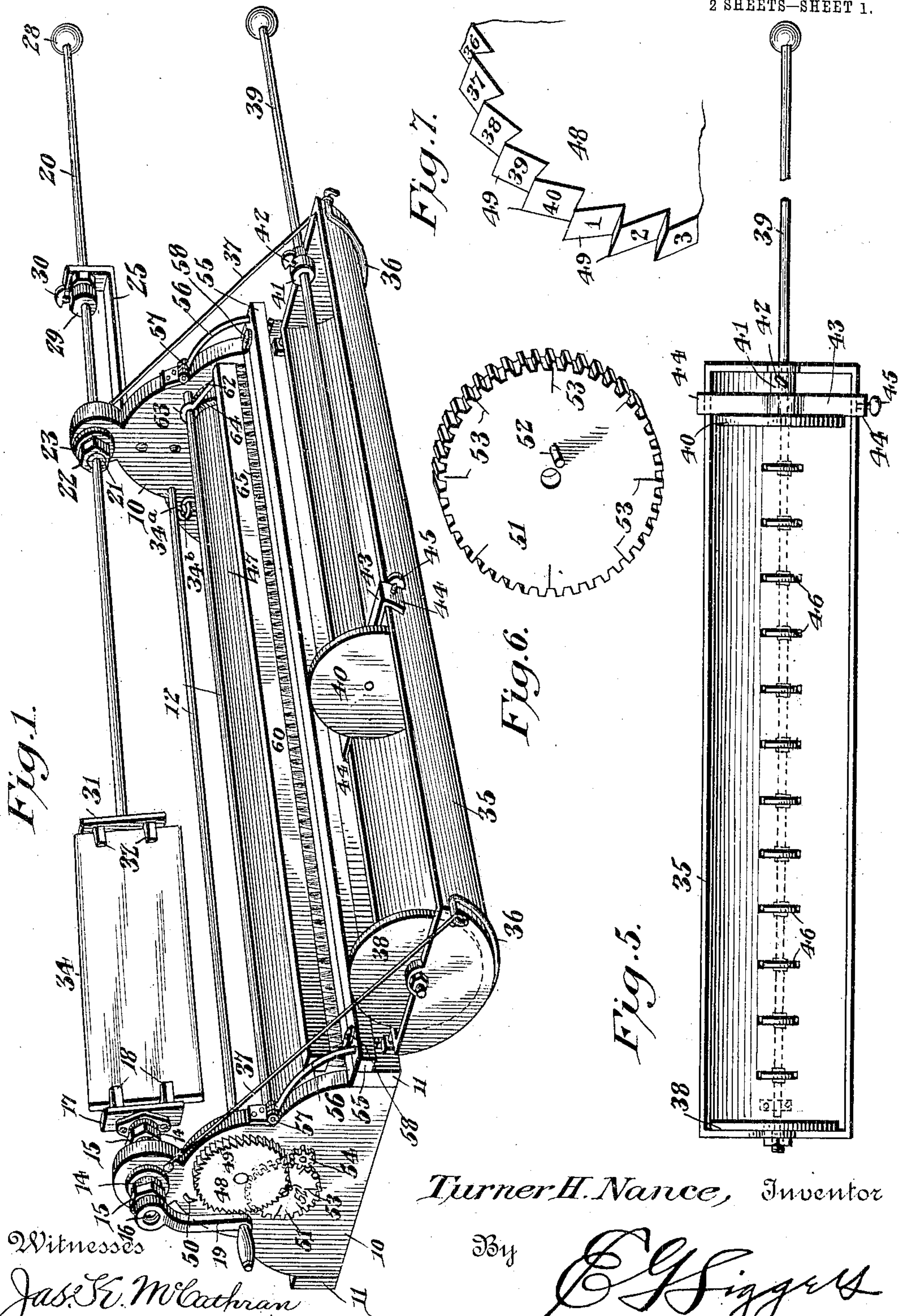


No. 844,739.

PATENTED FEB. 19, 1907.

T. H. NANCE.
CLOTH MEASURING MACHINE.
APPLICATION FILED JUNE 22, 1906.

2 SHEETS—SHEET 1.



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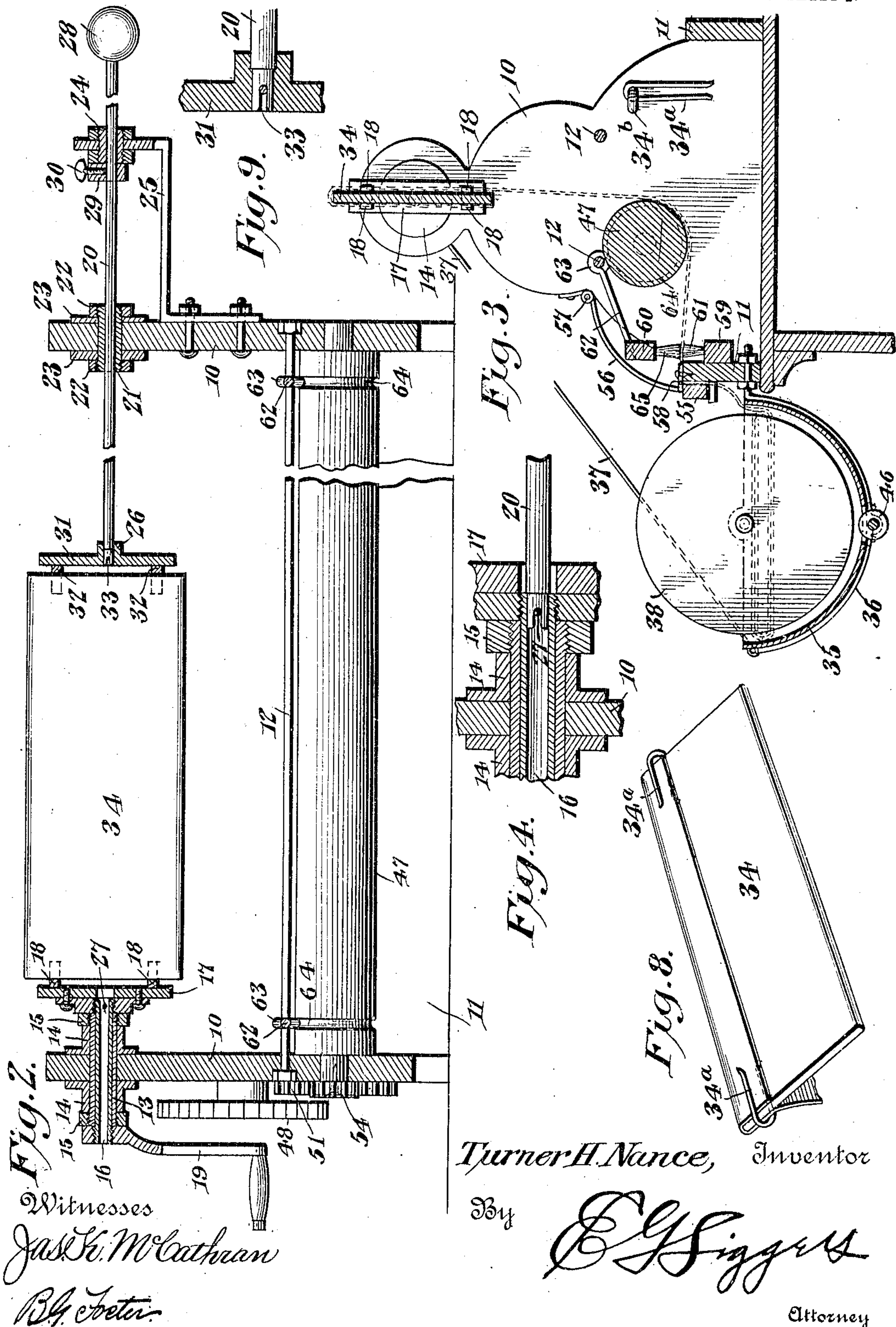


Fig. 2.

Fig. 3.

Fig. 4.

Fig. 8.

Fig. 9.

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UNITED STATES PATENT OFFICE.

TURNER HUNT NANCE, OF TALLADEGA, ALABAMA.

CLOTH-MEASURING MACHINE.

No. 844,739.

Specification of Letters Patent.

Patented Feb. 19, 1907.

Application filed June 22, 1906. Serial No. 322,886.

To all whom it may concern:

Be it known that I, TURNER HUNT NANCE, a citizen of the United States, residing at Talladega, in the county of Talladega and State of Alabama, have invented a new and useful Cloth-Measuring Machine, of which the following is a specification.

The invention relates to means for measuring cloth or any similar material that is flexible and is in the form of sheets, strips, or the like.

One of the principal objects is to provide novel mechanism of the above character that will unwind cloth, ribbons, or the like, accurately measure and register the measurements of the same, and rewind the material so measured without wrinkling or otherwise injuring or disfiguring it.

A further and important object is to provide a novel structure that is readily adaptable for measuring cloth, ribbons, or other fabric of different widths and reeling the same either into circular form or into bolts of the usual flat shape.

An embodiment of the invention that is at present considered the preferable one is illustrated in the accompanying drawings and is described in the following specification.

In said drawings, Figure 1 is a perspective view of the machine, showing a bolt-core in place therein. Fig. 2 is a vertical longitudinal sectional view through the same. Fig. 3 is a cross-sectional view. Fig. 4 is a detail sectional view through the reel members, showing the same in interlocked relation. Fig. 5 is a top plan view of the cloth-holding trough. Fig. 6 is a detail perspective view of one of the wheels of the registering mechanism. Fig. 7 is a detail perspective view of a portion of the indicator-wheel of said mechanism. Fig. 8 is a detail perspective view of a bolt-core, showing the means temporarily attaching the cloth thereto. Fig. 9 is a detail sectional view, on an enlarged scale, showing the manner of attaching the core-engaging device to the stem of the reeling mechanism.

Similar reference-numerals designate corresponding parts in all the figures of the drawings.

In the embodiment illustrated a frame is employed comprising end pieces 10, connected by bars 11 and tie-rods 12. Journaled in the upper ends of one of the end pieces 10 is a driving member constituting a part of the reeling mechanism. A journal-bearing for this driving member, as shown in Fig. 2, con-

sists of a sleeve 13, that passes through the end piece 10, and has collars 14 arranged on it on opposite sides of said end piece. Nuts 15, threaded upon the sleeve, are abutted against the collars 14. In the sleeve is rotatably mounted the said driving member, consisting of a tubular shaft 16, on the inner end of which is secured a core-engaging device in the form of a head 17, having inwardly-extending core-embracing lugs 18. Any suitable means may be employed for rotating the shaft, and while in the present embodiment a handle-crank 19 is disclosed it will be evident that power-operated means may be employed, if desired. A stem 20 is journaled in the other end piece 10 of the frame, the bearing consisting of a sleeve 21, that passes through said end piece and is secured in place by nuts 22 and washers 23. This stem 20 also has a bearing 24 in the outer end of a bracket 25, secured to the end piece. The stem is longitudinally slidable, as well as rotatable, in the bearings 21 and 24, its inner end being provided with a socket 26, that detachably receives a cross-pin 27, located in the inner end of the tubular shaft 16 of the driving member. (See Fig. 4.) A handle 28 is carried by the outer end of the stem.

In order to hold the stem 20 against its outward longitudinal movement, a collar 29 is mounted thereon between the bearings 21 and 24 and is adapted to be secured to said stem by a suitable set-screw 30. It will thus be apparent that the stem 20 can be interlocked with the driving member and held against outward movement with respect thereto by means of the collar and set-screw. When the inner end of the stem is out of interlocking engagement with the driving member, it is adapted to support another core-engaging device 31, that is arranged in opposing relation to the core-engaging device 17 and is in the form of a head having inwardly-extending core-embracing lugs 32. The head or core-engaging device 31 is provided with a socket in which the inner end of the stem 20 fits, and, furthermore, has a cross-pin 33, that detachably engages in the socket 26 of said stem. It will be thus apparent that the bolt-cores, one of which is shown at 34, may be held between and by the core-engaging devices 17 and 31, so that when the driving member is rotated the bolt-core will be rotated therewith. It will also be clear that if the core-engaging device 31 is detached from the stem said stem may be moved into inter-

locking engagement with the driving member, so that it will rotate therewith.

Carried by the rear side of the frame is a cloth-holding trough 35, supported on suitable brackets 36, secured to said frame, the outer ends of said bracket being reinforced by braces 37. Rotatably mounted in one end of the trough is a disk-head 38, and a stem 39 is slidably mounted in the other end of said trough. The inner end of said stem carries another rotatable disk-head 40, which is thus adjustable toward and from the disk-head 38, being held against movement away from the same by a collar 41 and set-screw 42, carried by the stem and engaging the inner side of the end of the trough. A cross-bar 43 extends across the trough and has depending terminals 44 engaging over the outer side thereof. One of these terminals has a set-screw 45, by means of which the cross-bar can be secured against movement to the trough. The stem 39 has a bearing in this cross-bar. The bottom of said trough may, if desired, be provided with a series of rollers 46, though the same are not essential to the operativeness of the structure. By the arrangement described it will be evident that the trough can be contracted to the length of the bolt or other roll of material placed therein and that any endwise movement of the material in said trough can be thus prevented.

Journaled in the end piece 10 of the frame between the trough and reeling mechanism above described is a cloth-engaged roller 47, that constitutes actuating means for the registering mechanism. This registering mechanism is mounted on the end piece 10, which carries the driving member. In the present embodiment the registering mechanism consists of a number-wheel 48, having a peripheral series of teeth 49, certain of the faces of which are provided with consecutive numbers. A suitable pointer 50 (shown in Fig. 1) coöperates with these numbers. An idler-wheel 51, journaled on the end piece, has a tooth 52, that is located at one side of its axis of rotation and consecutively engages the teeth 49 of the wheel 48 on the rotation of said wheel 51. The marginal portion of the exposed face of the wheel 51 is preferably provided with indicating-marks 53. The wheel 51 is a gear-wheel and is in mesh with a pinion 54, carried by the roller 47. The roller 47 is preferably nine inches in circumference, and the proportions of the pinion 54 and wheel 51 is such that four revolutions of the pinion are required to effect one revolution of the idler-wheel. On the other hand, one revolution of the idler-wheel effects the movement of the number-wheel 48 one tooth. As a result it will be evident that each revolution of the pinion 54 represents the passage of a quarter of a yard of cloth past the roller 47, and one revolution of the idler-wheel rep-

resents the passage of one yard. In like manner a movement of one tooth by the number-wheel also represents the passage of one yard.

Located between the cloth-engaged roller 47 and the cloth-holding trough is tensioning means. This means consists, in part, of an adjacent frame-bar 11, with which a movable tension-bar 55 coöperates. The tension-bar 55 is carried by arms 56, hinged, as shown at 57, to the end pieces 10 of the frame. This bar swings alongside the outer face of the bar 11 and is arranged to be held in such position by suitable turn-buttons or latches 58.

Cleaning and smoothing brushes 59 and 60 are arranged between the tensioning means and the cloth-engaging roller 47. The brush 59 is fixed to the inner side of the adjacent frame-bar 11 and has upstanding bristles 61. The brush 60 is carried by swinging arms 62, that are pivoted on one of the tie-rods 12. The pivotal portion 63 preferably engages in grooves 64 in the cloth-engaging roller 47. The brush 60 has depending bristles 65, that are disposed in opposing relation to the bristles 61 and are arranged directly thereover. The brush 60, however, is capable of swinging away from the brush 59, as will be apparent.

The operation of the machine may be briefly described as follows: If a bolt of cloth is to be measured, a core, as 34, is engaged in the reeling mechanism, as shown in Figs. 1 and 2. The bolt of cloth to be measured is placed in the cloth-holding trough 35, and the head 40 is placed close to the end of the stem. The tension-bar 55 and brush 60 are raised and the cloth is passed over the bar which has the brush 59 and beneath the roller 47, the end being carried upwardly and lapped over the core-bolt 34. This end is then temporarily fastened by spring-clips 34^a, as shown in Fig. 8, which clips when not in use are held in eyes 34^b carried by the end pieces 10 of the frame. When the cloth has thus been positioned, the brush 60 is dropped upon the same and over the brush 59, and the tension-bar 55 is placed over the cloth and locked by the devices 58. If the driving member is now rotated, it will be apparent that the core will be revolved and the cloth wound thereupon. This cloth passing about the roller 47 causes the same to revolve, and thereby actuate the registering or indicating mechanism. The necessary tension to secure the action of the roller is obtained by the tension-bars, and the brushes are important in the combination not only for cleaning the cloth, but for eliminating wrinkles caused by the strain upon the cloth. In case a roll of goods is to be measured the flat cores 34 are dispensed with, the core-engaging device 31 is disengaged from the stem 20, and the said stem is moved inwardly until its inner end is interlocked in the driving member. The ma-

terial is then passed through the machine in the manner already described and is wrapped directly upon the stem 20 or upon a tubular holder placed thereon. The stem being round permits the ready withdrawal of the roll after the same has been formed, and the mechanism accurately registers the material, as will be evident.

From the foregoing it is thought that the construction, operation, and many advantages of the herein-described invention will be apparent to those skilled in the art without further description, and it will be understood that various changes in the size, shape, proportion, and minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

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

1. In a cloth-measuring machine, the combination with reeling and measuring means, of cloth-holding means, a lower brush located between the reeling and holding means and having upstanding bristles, and an upper brush loosely movable toward and from the lower brush and having depending bristles movable into and out of engagement with the bristles of the lower brush, said brushes being separable to permit the passage of cloth between them.

2. In a cloth-measuring machine, the combination with reeling means, of registering mechanism associated therewith, cloth-holding means, and oppositely-disposed coacting brushes located between the holding and reeling means and adapted to have the cloth passed between and in frictional engagement with them, said brushes being relatively movable into and out of engagement with each other.

3. In a cloth-measuring machine, the combination with reeling means, of registering mechanism associated therewith, cloth-holding means, a fixed brush, and a pivotally-mounted brush disposed in opposing relation to the fixed brush and movable toward and from the same, said brushes being located between the holding and reeling means and adapted to have the cloth passed between them.

4. In a cloth-measuring machine, the combination with reeling means, of registering mechanism associated therewith, cloth-tensioning means, and oppositely-disposed coacting brushes located between the holding and reeling means and adapted to have the cloth passed between them, said brushes being relatively movable into and out of engagement with each other.

5. In a cloth-measuring machine, the combination with a frame, of rotatable reeling means journaled therein, registering mechanism including a rotatable cloth-engaged

roller, a cloth-holding trough arranged at one side of the frame, tensioning means comprising a fixed bar, a swinging bar pivotally mounted on the frame, and movable into and out of coaction with the fixed bar, a latch for holding the movable bar in coöperation with the fixed bar, a fixed brush secured to the frame, and a swinging brush mounted on the frame and movable into and out of coaction with the fixed brush, said brushes being disposed between the tensioning means and the reeling mechanism.

6. In a cloth-measuring machine, the combination with reeling and indicating mechanism, of a cloth-holder comprising a trough, and rotatable heads mounted in the trough.

7. In a cloth-measuring machine, the combination with reeling and indicating mechanism, of a cloth-holder comprising a trough, and rotatable heads mounted in the trough, said heads being relatively adjustable toward and from each other.

8. In a cloth-measuring machine, the combination with reeling and indicating mechanism, of a cloth-holder comprising a trough, a rotatable head mounted in one end of the trough, a stem longitudinally adjustable in the other end, and a rotatable head carried by the inner end of the stem and adjustable in the trough toward and from the first-mentioned head.

9. In a cloth-measuring machine, the combination with reeling and indicating mechanism, of a cloth-holder comprising a trough, a rotatable head mounted in one end of the trough, a cross-bar extending across the trough and adjustable longitudinally along the same, and a rotatable head having a bearing on the cross-bar and adjustable with the same.

10. In a cloth-measuring machine, the combination with reeling and indicating mechanism, of a cloth-holder comprising a trough, a rotatable head journaled in one end of the trough, a cross-bar extending across the trough and longitudinally adjustable thereon, a stem disposed longitudinally of the trough and having a bearing on the cross-bar and on the end opposite to the head, and another rotatable head carried by the inner end of the stem and adjustable therewith.

11. In a cloth-measuring machine, the combination with indicating mechanism, of reeling means comprising a rotatable driving member, a stem that is movable toward and from the rotatable driving member and capable of detachably interlocking therewith, a core-engaging device mounted on the driving member, and a coacting core-engaging device mounted on the stem and detachable therefrom to permit said stem to interlock with the driving member.

12. In a cloth-measuring machine, the combination with indicating mechanism, of reeling means comprising a rotatable driving

member having a cross-pin, a stem that is movable toward and from the driving member, said stem having a socket that is capable of detachably receiving the pin, a core-engaging device mounted on the driving member, and a coacting core-engaging device having a socket detachably receiving the stem, said latter core-engaging device also having a cross-pin that detachably engages in the socket of the stem.

13. In a cloth-measuring machine, the combination with a frame including spaced supporting devices, of a driving member journaled in one of the devices, spaced journal-bearings on the other device, a stem journaled in the spaced bearings and slidable therein into interlocked engagement with the driving member, and means for holding the stem against its sliding movement.

14. In a cloth-measuring machine, the combination with a frame including spaced end pieces, of a driving member journaled in one of the end pieces, an outstanding bracket mounted on the other end piece, a stem journaled in said other end piece and in the bracket thereof, said stem being longitudinally slidable in its bearings toward and from the driving member and being movable into and out of interlocking engagement with said driving member, a collar mounted on the stem between the bracket and the end piece

which carries it, a set-screw for securing the collar to the stem, and core-engaging devices mounted on the inner ends of the driving member and stem.

15. In a cloth-measuring machine, the combination with a frame having end pieces, of a driving member journaled in one of the end pieces, a stem journaled on the other end piece, and movable into and out of interlocking engagement with the driving member, core-engaging devices carried by the driving member and stem, registering mechanism, a cloth-engaging roller journaled in the frame, and constituting operating means for the registering mechanism, coacting relatively movable brushes mounted on the frame and disposed in opposing relation to each other, relatively movable tension-bars mounted on the frame in rear of the brushes, a cloth-holding trough disposed at the rear side of the frame, and rotatable heads mounted in the trough and relatively adjustable toward and from each other.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

TURNER HUNT NANCE.

Witnesses:

JOHN H. SIGGERS,
LEWIS EBERLY.