

B. D. WIGHT.
CLOTH MEASURING MACHINE.
APPLICATION FILED JUNE 3, 1908.

944,161.

Patented Dec. 21, 1909.
2 SHEETS—SHEET 1.

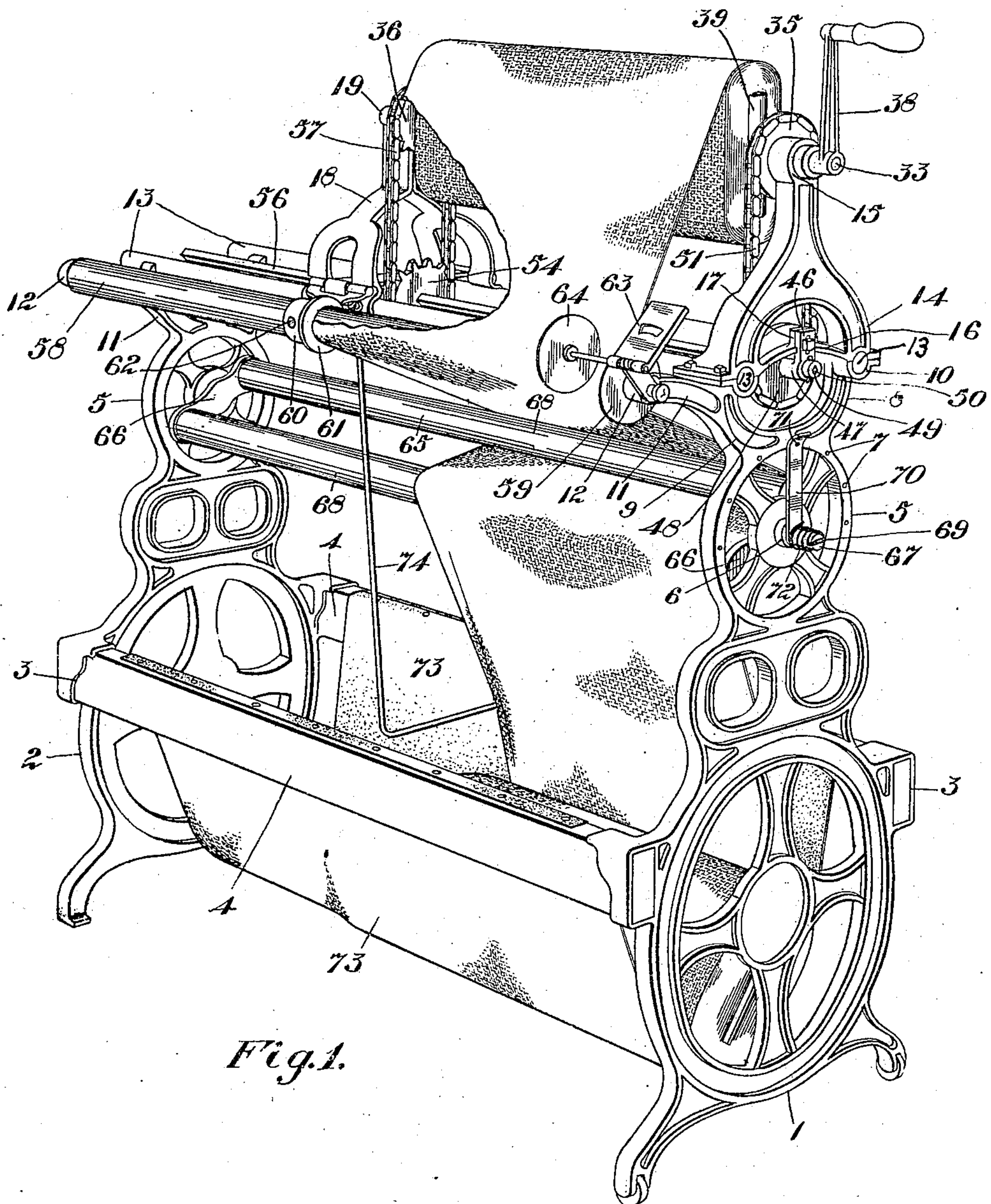


Fig. 1.

Witnesses
H. C. Emerson
W. C. Muir

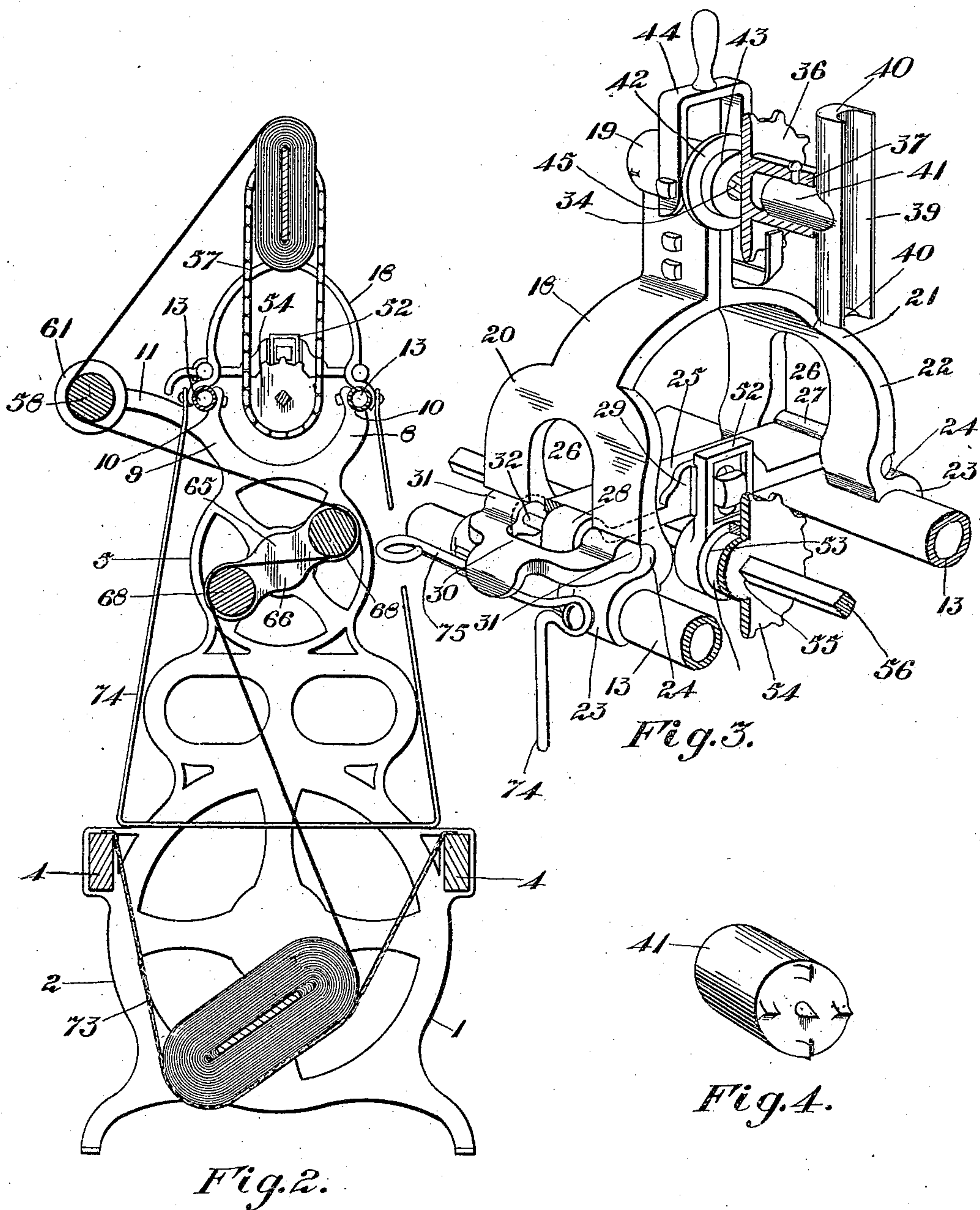
Inventor
B. D. Wight
by E. J. Fetherstonhaugh
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Atty.

UNITED STATES PATENT OFFICE.

BRINTON DOUGALL WIGHT, OF TORONTO, ONTARIO, CANADA.

CLOTH-MEASURING MACHINE.

944,161.

Specification of Letters Patent.

Patented Dec. 21, 1909.

Application filed June 3, 1908. Serial No. 436,437.

To all whom it may concern:

Be it known that I, BRINTON DOUGALL WIGHT, a subject of the King of Great Britain, resident of the city of Toronto, in the county of York, in the Province of Ontario, in the Dominion of Canada, have invented certain new and useful Improvements in Cloth-Measuring Machines, of which the following is a specification.

The invention relates to improvements in cloth measuring machines as described in the following specification and shown in the accompanying drawings that form part of the same.

The invention consists essentially in the novel construction and arrangement of parts whereby the cloth-board is held and rotated by an adjustable mechanism supported from a frame, and the cloth engaged by a pair of friction bars controlled by an adjustable spring mechanism.

The objects of the invention are to facilitate the handling of fabrics of various kinds in taking stock, to measure them accurately, to unwind and rewind the fabrics without injury, and to accomplish the work with the greatest possible speed.

In the drawings Figure 1 is a perspective view of my machine showing a bolt of cloth being measured. Fig. 2 is a vertical cross sectional view of the machine. Fig. 3 is an enlarged perspective detail of the adjustable carriage for supporting one end of the cloth-board on which the cloth is rewound and shown partly in section. Fig. 4 is an enlarged perspective detail of a grip for holding the core for a cylindrical roll of cloth.

Like numerals of reference indicate corresponding parts in each figure.

Referring to the drawings 1 and 2 are a pair of standards having rectangular orifices 3 formed at each side thereof, said standards being spaced apart and rigidly supported by a pair of longitudinal bars 4 extending therebetween, and fixedly secured at the ends in the said rectangular orifices. The standards 1 and 2 are each formed with a circular ring shaped portion 5 centrally arranged, and a journal bearing 6 centrally supported within said ring.

7 are small circular orifices in the side of the ring shaped portion 5 of the standard 1 and arranged equidistant from the center.

8 and 9 are a pair of arms extending upwardly from the ring shaped portion 5 of

the standards 1 and 2 having semi-circular horizontal recesses 10 formed in the upper ends thereof.

11 are arms forming part with the arms 9 and extending laterally therefrom, and having a journal bearing 12 formed at the outer end thereof.

13 are hollow cylindrical bars resting in the recess 10 in the arms 8 and 9 and rigidly connecting the upper ends of the standards.

14 Fig. 1 is a bracket extending upwardly from the arms 8 and 9 of the standards 1 and rigidly secured thereto clamping the bars 13 securely in place, said bracket having a centrally arranged journal bearing 15 at its upper end and a cross bridge 16 extending between the upper ends of the arms 8 and 9, said bridge having a centrally arranged vertical lug 17 extending upwardly therefrom.

18 is a bracket adjustably arranged on the bars 13 having a journal bearing 19 at the upper end arranged in alinement with the bearing 15 in the bracket 14. The bracket 18 is preferably formed in two sections 20 and 21 bolted together immediately below the bearing 19 and extending outwardly and downwardly and terminating in the Y-shaped ends 22 having the semi-cylindrical portions 23 resting on and partly encircling the bars 13.

24 are semi-circular recesses formed in the sections 20 and 21 of the bracket 18 immediately above the portions 23.

25 is a cross bar extending between the sections 20 and 21 and through the central openings 26 having a head 27 formed at one end thereof and resting in the recess 24 in the section 21 and a hooked shaped portion 28 at the opposite end, and a centrally arranged lug 29 extending upwardly therefrom.

30 is a U-shaped lever having the cylindrical end portions 31 resting in the recess 24 in the section 20 and rotating therein and a pin 32 extending between said cylindrical ends eccentrically arranged therein and engaging the hooked portion 28 of the cross bar 25. The lever 30 when pressed downwardly rotates the pin 32 eccentrically thus drawing the sections of the bracket 18 together and clamping them securely to the bars 13. The bracket may be released and quickly adjusted by turning the lever 30 upwardly.

33 and 34 are short shafts journaled in the

bearings 15 and 19 in the brackets 14 and 18 respectively.

35 and 36 are sprocket wheels secured to or forming part with the said shafts and having the cylindrical sleeve portion 37 extending from the inner face thereof.

38 is a crank secured to the outer end of the shaft 33.

39 are the cloth-board cleats for gripping the end of the board upon which the cloth is wound. The cleats 39 are preferably formed of a U-shaped piece of metal having the knives 40 partly closing the ends and a cylindrical portion 41 extending from the center thereof. The cylindrical portion of the cleats 39 are secured in the sleeves 37 by suitable set screws and are rotated on rotating the crank 38 to rotate the cloth-board.

The form of cleats may be varied considerably according to the form of board or stick required by the different materials to be measured. One modification is shown in Fig. 4, but it must be understood that many modifications may be made. The shaft 34 is adjustably journaled in the bearing 19 so that one of the cleats may be moved laterally to engage or disengage the cloth-board.

42 is a washer encircling the shaft 34 between the journal bearing 19 and the sprocket 36.

43 is a ball bearing ring of any suitable form encircling the shaft 34 between the sprocket 36 and the washer 42.

44 is a lever pivotally secured to the sides of the bearing 19 having eccentric shaped rounded ends 45 engaging the washer 42 and adapted on being swung to its lowermost position, to press against the said washer and through the ball bearing ring 43 to push against the sprocket 36, consequently moving the shaft 34 longitudinally in its bearing and moving the cleat supported thereon inwardly. The cloth-board on which the cloth is to be wound is placed between the cleats and the bracket 18 adjusted to bring both the cleats into engagement with the board. The bracket is then clamped securely to the bars 13 and the lever 44 swung to its downward position forcing the knives of the cleats 39 into the board and holding it securely.

46 is an arm adjustably secured to the lug 17 on the bracket 14 and having a journal bearing 47 formed at its lower end.

48 is a sprocket wheel having a spindle 49 extending therefrom and journaled in the bearing 47, said spindle having a squared orifice 50 extending therethrough.

51 is a sprocket-chain connecting the sprocket-wheels 35 and 48.

52 Fig. 3 is an arm similar to the arm 46 adjustably secured to the lug 29 on the cross bar 25 on the bracket 18 and having a journal bearing 53 at its lower end.

54 is a sprocket wheel having a sleeve extending therefrom and journaled in the bearing 53 and a squared orifice 55 extending centrally therethrough.

56 is a squared shaft fixedly secured in the orifice 50 in the sprocket 48 and extending through and sliding in the orifices 55 in the sprocket 54.

57 is a sprocket chain connecting the sprocket-wheels 36 and 54.

It will be seen from this description that the bracket 18 may be adjusted on the bars 13 to accommodate any desired width of cloth-board, and that the shaft 34 and the cleat secured thereto will be rotated in unison with the cleat secured to the shaft 33 and the cloth-board, rotated without any torsional strain being placed thereon.

58 is a roller extending between the standards 1 and 2 and journaled at the ends in the journal bearings 12 on the ends of the arm 11, and forming a guide for the cloth to be wound on the cloth-board.

59 is a guide flange formed on one end of the roller 58.

60 is an adjustable collar encircling the roller 27 and having a flange 61 formed at one end thereof. The collar 60 is secured to the roller 58 in any desired position by the adjusting set screw 62 threaded in said collar.

63 is a measuring device of any well known form supported from the arm 11 and spring held with the measuring disk 64 held against the cloth passing over the roller 58.

65 is a tension regulator formed of a pair of arms 66 each having a central spindle 67 journaled in the bearings 6 in the standards 2, and a pair of friction bars 68 extending between the standards and rigidly secured at their ends to the arms 66. One of the spindles 67 extends through and beyond the bearing 6 and is provided with a cross slot 69 at the end.

70 is a spring arm loosely encircling the slotted spindle 67 having a pin 71 adjacent to its outer end adapted to register with the small orifices 7 and hold the said arm rigidly in an adjusted position.

72 is a spiral spring encircling the spindle 67 having one end secured in the slot 69 and the other secured to the arm 70 and exerting a spring pressure to turn the said spindle and tension device. The tension of the spring 72 may be increased or decreased by adjusting the spring arm 70.

73 is a pocket preferably formed of a length of another flexible material secured to the bars 4 and extending between the standards 1 and 2 and forming a receptacle for the bolt of cloth to be measured.

74 is a wire loop pivotally supported at its upper ends from the adjustable bracket

18 and having the laterally extending end 75 engaging a plurality of teeth on the side of said bracket. The loop 74 extends downwardly adjacent to the pocket 73 and is adapted to engage the edges of the cloth.

In the operation of this device the bracket 18 is adjusted to the desired position and clamped securely. The cloth-board is then inserted in the cleats and said cleats clamped by the lever 44. The bolt of cloth to be measured is placed in the flexible pocket 73 and the end drawn around the tension regulator 65, first passing over one of the bars 68 and under the other, after the approximate tension required has been given to the spring 72 by turning the said tension device against said spring. The cloth is then drawn under the measuring device and over the roller 58 and secured to the cloth-board. The collar 60 is adjusted to abut the edge of the cloth and secured in its adjusted position and the wire guide loop 74 adjusted to press against the cloth, holding it in a partial fold below the tension device 65. On the rotation of the crank 38, the cloth-board is rotated and the cloth wound thereon, being unwound from the bolt resting in the pocket 73. The flexible pocket allows the bolt to turn freely and with a uniform movement, so that the cloth will not be jerked suddenly and injured thereby. Any slight jerking caused by the turning of the bolt is counteracted by the automatic tension device 65. The pair of friction bars are spring held in contact with the cloth and as the bolt turns and the tension of the cloth increases and decreases, the said bars swing automatically and hold the cloth passing over the roller 58 at a uniform tension. As the cloth is unwound and the bolt in the pocket 73 becomes smaller, the tension bars swing automatically to increase the friction and hold the cloth at a uniform tension throughout the unwinding operation. The guide 74 keeps the edge of the cloth pressed inwardly and prevents the edge being stretched and the flanges on the roller 58 insure the even winding of the cloth, so that the cloth is rewound into a neat bolt. The automatic tension device insures the even winding of the cloth so that it will not be stretched and injured in spots and may be adjusted to hold very heavy cloth or to suit the most delicate fabrics.

The machine is also adapted for use in winding cloth put up in webs or folds and placing same on regular cloth boards in the form of bolts.

A machine such as described greatly facilitates the handling of textile fabrics in stock taking operations as it can be adjusted very quickly to suit any width or weight of fabric. It may also be used to advantage in large establishments for measuring of lengths of cloth.

Many of the parts of this machine may be altered without departing from the spirit of the invention so long as the general features and arrangement are adhered to.

What I claim as my invention is:—

1. In a cloth measuring machine, the combination with a rigid frame and a suitable measuring device, of a suitable winding mechanism supported on said frame, means for supporting a bolt of cloth, tension means between said winding mechanism and supporting means, an adjustable spring attachment to said tension means for automatically regulating the proper tension of the cloth during the operation of the device.

2. In a cloth measuring machine, the combination with a rigid frame and a suitable measuring device, of a suitable winding mechanism supported on said frame, a frame suitably journaled within the aforesaid frame and having a plurality of bars or rolls extending thereacross, a spring at one end rigidly connected with said inner frame, and an arm or lever connected to the other end of said spring and suitably fulcrumed.

3. In a cloth measuring machine, the combination with a rigid frame and a suitable measuring device, of a suitable winding mechanism supported on said frame, a pair of arms having centrally arranged spindles extending therefrom and journaled in suitable bearings in said arm and supporting a plurality of bars or rolls extending across said machine, a spiral spring encircling the end of the spindle of one of said arms and secured thereto at one end, and an adjustable arm or lever suitably fulcrumed and secured to the other end of said spiral spring.

4. In a cloth measuring machine, the combination with a rigid frame having a pair of fixed journal bearings oppositely arranged, of a plurality of small orifices arranged in one end of said frame equidistant from the center of one of said fixed journal bearings, of a pair of arms having spindles centrally arranged therein and journaled in said bearings and supporting a plurality of bars or rolls extending across said machine, a spring adjusting arm or lever rotatably held on the projecting end of one of said spindles and having a pin secured in its outer end adapted to fit into the small orifices arranged in circular relation to said spindle, and a spiral spring encircling the projecting end of said spindle and secured thereto at one end, and to said spring adjusting arm at the other end.

5. In a cloth measuring machine, the combination with a rigid frame and means for supporting a bolt of cloth, of a cloth board holder journaled in a fixed bearing in said frame, an adjustable bracket slidably arranged on said frame, a cloth board holder

journalled in a suitable bearing in said bracket, and a shaft rotatably secured in a suitable journal in said frame below said cloth board holder and slidably supported
5 in a suitable journal in said bracket and operatively connected with said cloth board holder.

6. In a cloth measuring machine, the combination with a rigid frame and means for
10 supporting a bolt of cloth, of a cloth board holder journalled in a suitable bearing in said frame, a slidable bracket supported on said frame, a cloth board holder journalled in a suitable bearing in said bracket, a shaft
15 rotatably secured in a suitable bearing in said frame below said cloth board holder and slidably journalled in a suitable bearing in said bracket, a chain and sprocket mechanism connecting said shaft with the cloth
20 board holder journalled in said frame, and a chain and sprocket mechanism connecting the cloth board holder journalled in said bracket with said shaft and sliding on said shaft.

25 7. In a device of the class described, a pair of standards spaced apart and supporting a pair of parallel bars at their upper ends, a bracket fixedly secured to one of said standards and having a centrally arranged fixed
30 journal bearing in its upper end, a crank shaft journalled in said fixed journal bearing, a sprocket wheel secured to said crank shaft, a cloth-board holder secured to inner end of said crank shaft, a bracket slidably
35 arranged on said parallel bars and having a journal bearing in its upper end arranged in alinement with the journal bearing in the aforesaid bracket, a shaft journalled in the journal bearing in said adjustable bracket, a
40 cloth-board holder secured to said shaft, a sprocket wheel secured to said shaft, journal bearings adjustably supported from said brackets, sprocket wheels journalled in said adjustable bearings and having squared
45 orifices therethrough, sprocket chains connecting the latter sprockets with the sprock-

ets secured to the said shaft and crank shaft respectively, and a squared shaft fixedly secured in the orifice in one of the latter sprockets and extending through the squared
50 orifice in the other of said sprockets and sliding therein.

8. In a device of the class described, a pair of standards rigidly supported and carrying a pair of parallel bars at their upper ends
55 and extending therebetween, a bracket rigidly secured to one of said standards, a cloth-board holder rotatably supported from said bracket, a bracket having U-shaped inverted ends resting on said parallel bars and
60 extending partly therearound, a cross bar extending between the U-shaped ends of said bracket, a cam lever engaging said cross bar and tightening said bracket on said parallel bars, a cloth-board holder rotatably sup-
65 ported in said bracket, means for rotating said cloth-board holders in unison, and means for measuring the cloth.

9. In a device of the class described, a pair of standards rigidly supported and
70 carrying a pair of parallel bars at their upper ends and extending therebetween, a bracket rigidly secured to one of said standards, a cloth-board holder rotatably supported from said bracket, a bracket slidably
75 arranged on said parallel bars having a journal bearing in its upper end, a shaft rotatably supported in said journal bearing and slidable therein, a cloth-board holder secured to the inner end of said shaft, a cam
80 lever pivotally secured to said bracket and adapted to move said shaft longitudinally in its bearing, adjustable means for rotating said cloth-board holders in unison.

Signed at the city of Toronto, in the
85 county of York, in the Province of Ontario, in the Dominion of Canada, this 20th day of May 1908.

BRINTON DOUGALL WIGHT.

Witnesses:

H. DENNISON,

WM. C. MUIR.