No. 709,231. Patented Sept. 16, 1902.

H. R. MEADE.

MEASURING MACHINE FOR ROLLED GOODS.

(Application filed Oct. 29, 1901.)

(No Model.) 2 Sheets—Sheet 1.

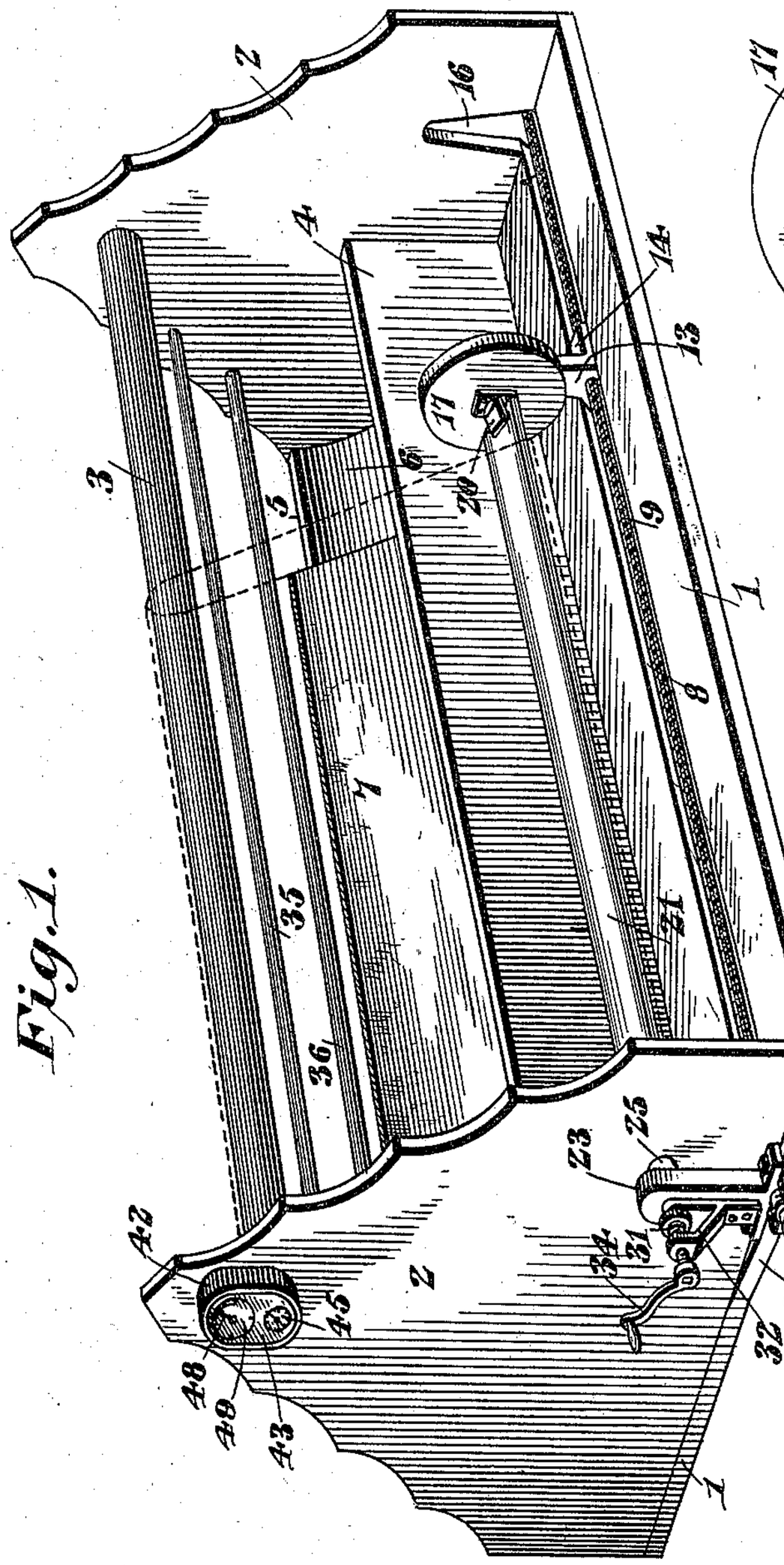

Fig. 1.

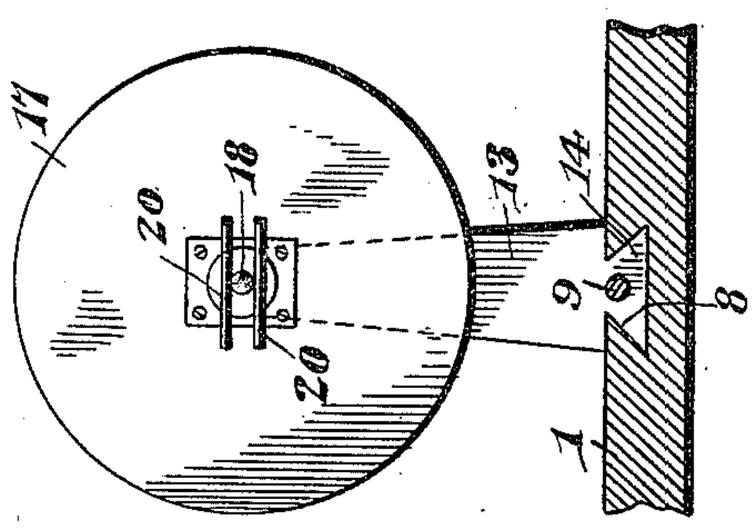

Fig. 6.

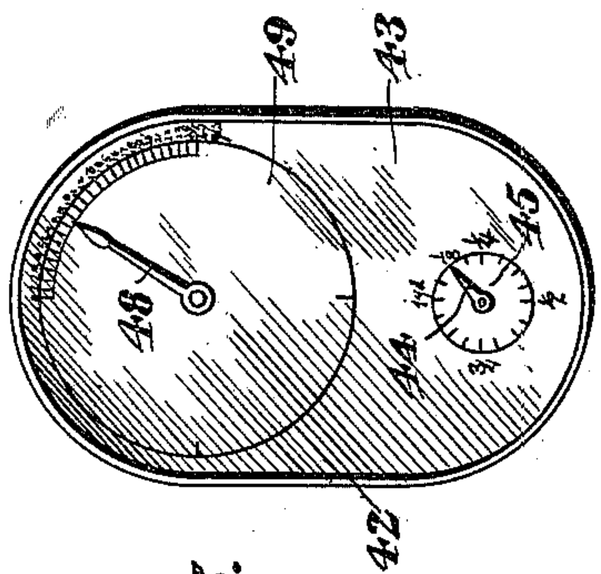

Fig. 5.

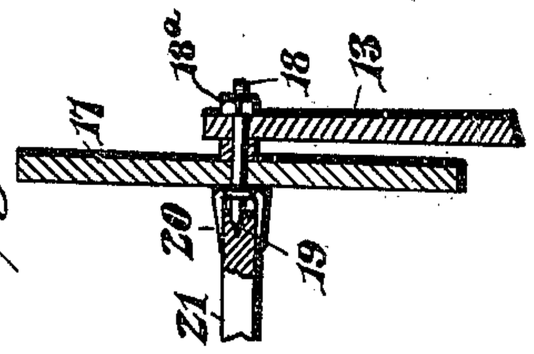

Fig. 7.

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MEASURING MACHINE FOR ROLLED GOODS.

(Application filed Oct. 29, 1901.)

(No Model.) 2 Sheets—Sheet 2.

Fig. 2.

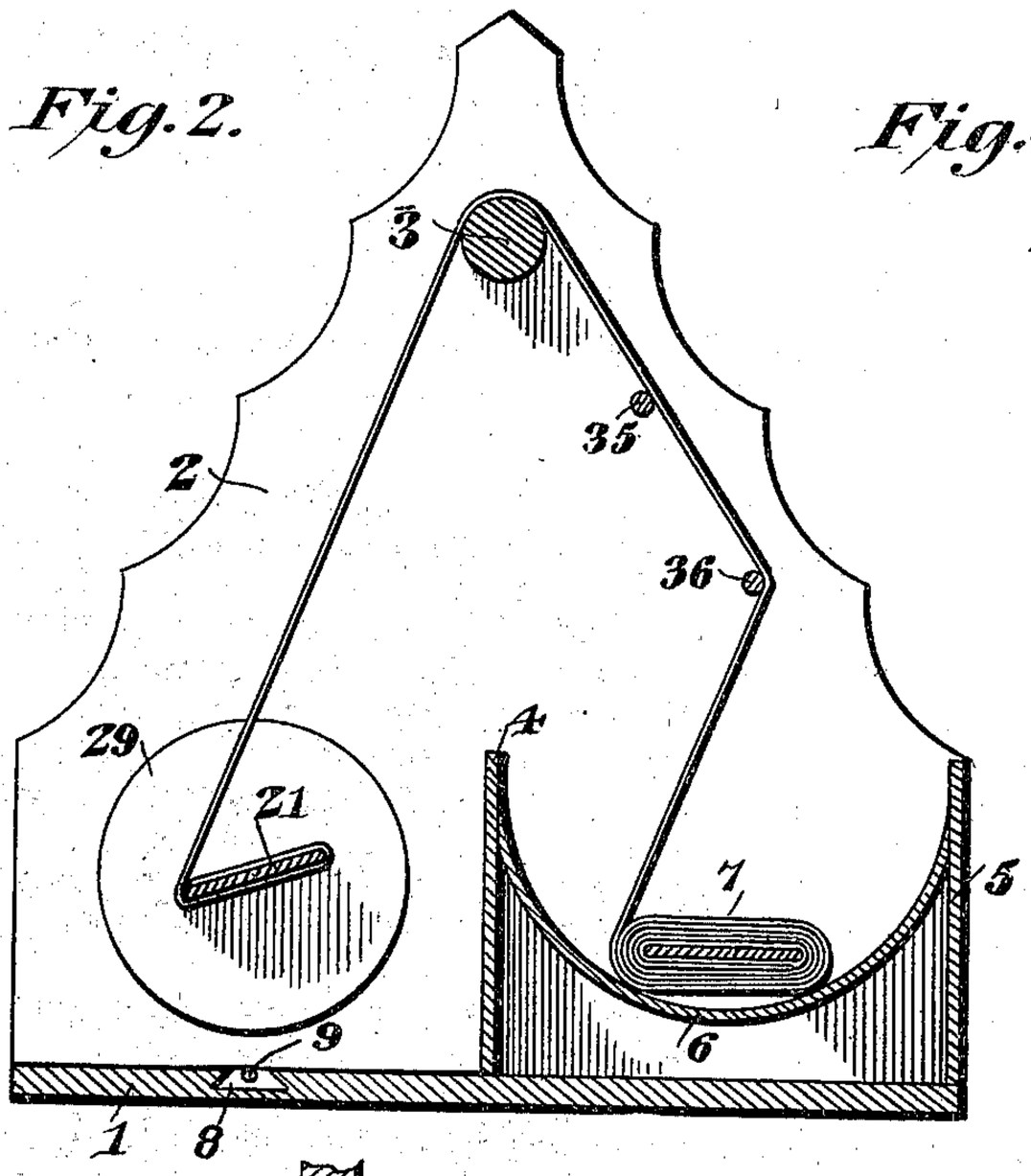


Fig. 4.

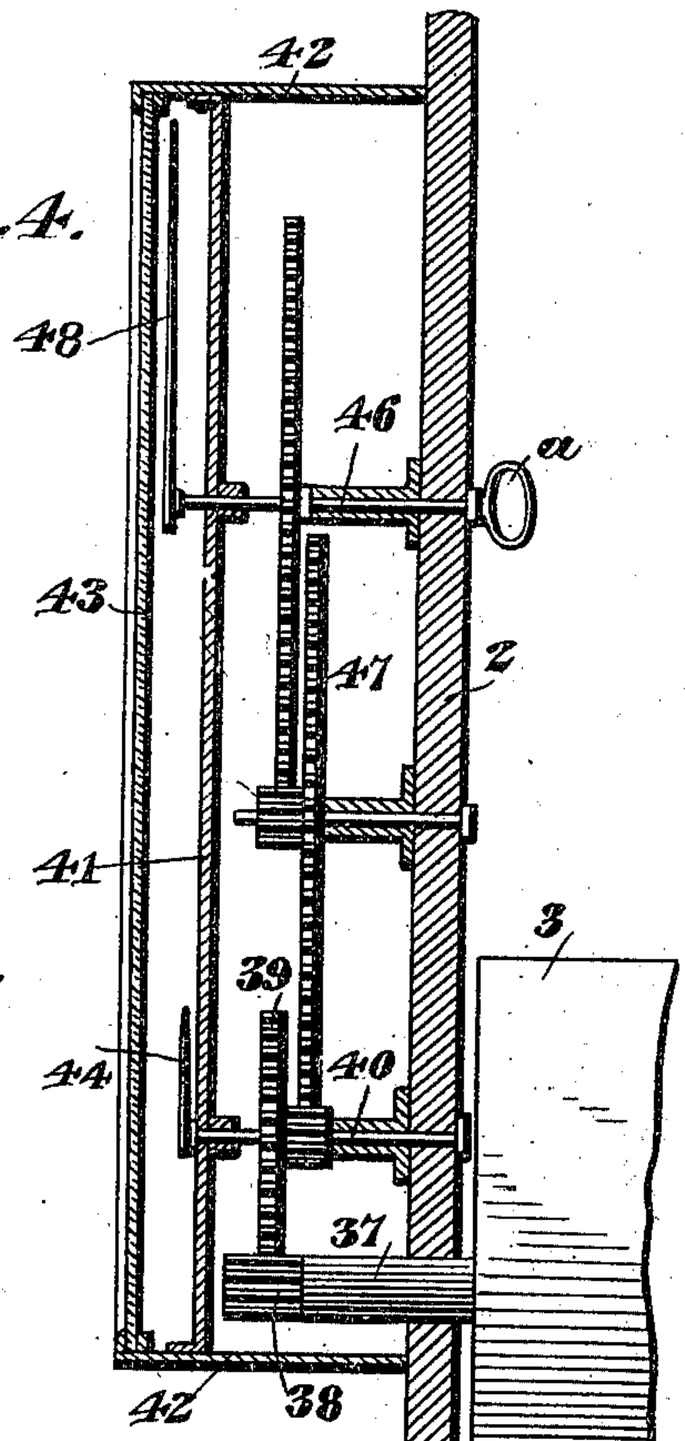
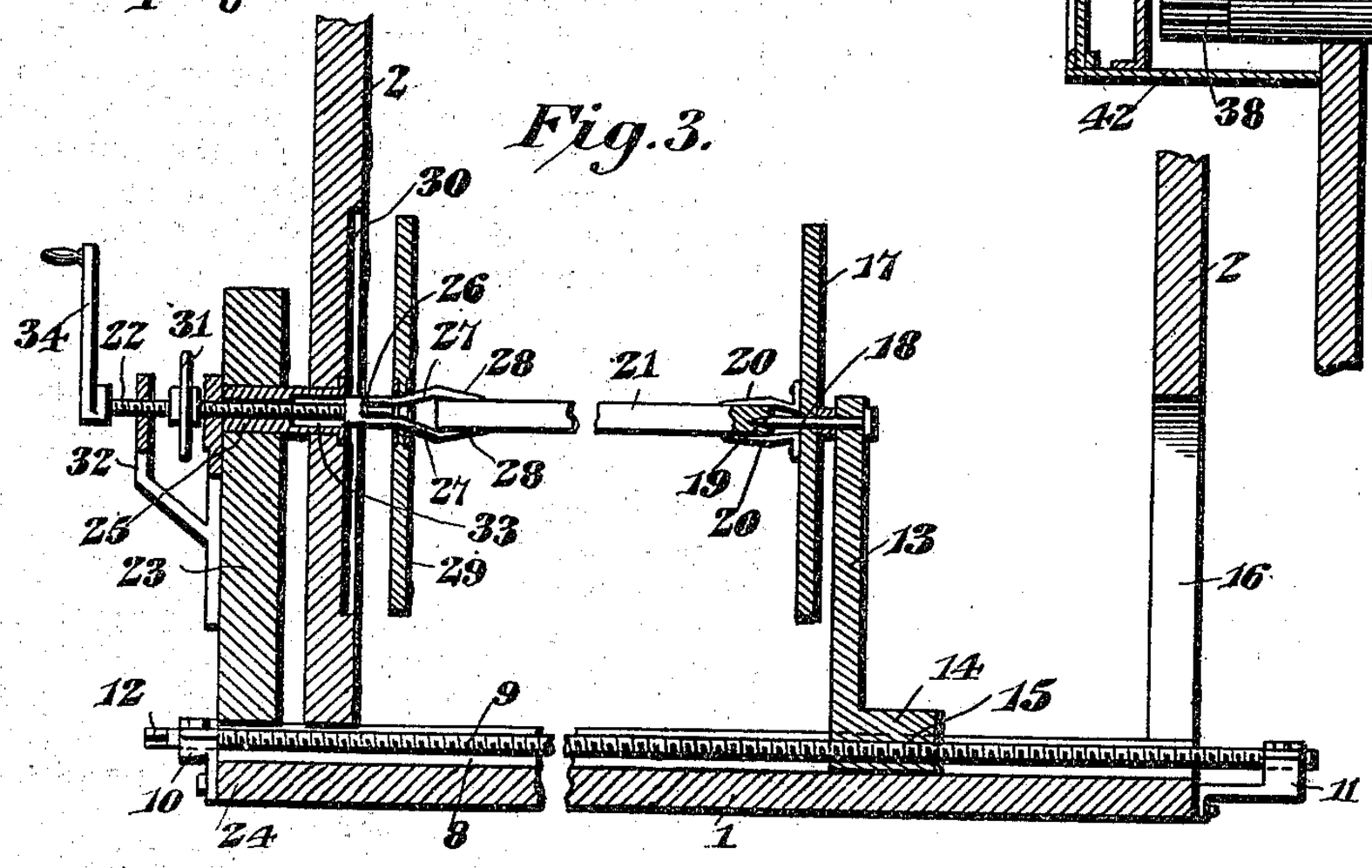


Fig. 3.



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UNITED STATES PATENT OFFICE.

HENRY RICHARDSON MEADE, OF GREENEVILLE, TENNESSEE, ASSIGNOR OF ONE-HALF TO JONATHAN LOGAN WOOD, OF GREENEVILLE, TENNESSEE.

MEASURING-MACHINE FOR ROLLED GOODS.

SPECIFICATION forming part of Letters Patent No. 709,231, dated September 16, 1902.

Application filed October 29, 1901. Serial No. 80,389. (No model.)

To all whom it may concern:

Be it known that I, HENRY RICHARDSON MEADE, a citizen of the United States, residing at Greeneville, in the county of Greene and State of Tennessee, have invented a new and useful Rolled-Goods-Measuring Machine, of which the following is a specification.

This invention relates to machines for measuring rolled goods, and is especially designed for the measuring of cloth in bolts, and is arranged to facilitate the placing of a bolt in the machine and to provide for measuring the cloth as it is unwound from the bolt and rewound upon another bolt-board.

Another object is to have the device adjustable, so as to accommodate for bolts of different widths, and also to have the machine conveniently manipulated by hand, so as to feed the goods from the bolt to the bolt-board which is to receive the cloth as it is unwound from the original bolt.

A further object is to provide for the convenient application and removal of the bolt-board with respect to the winding device and to insure a tight fit between the board and the winding device, so as to effectually obviate looseness thereof and maintain a steady rotation of the board.

A final object is to arrange all of the parts of the device in compact relation within a supporting-frame, so that the individual parts may be conveniently accessible without the possibility of one interfering with the other.

With these and other objects in view the present invention consists in the combination and arrangement of parts, as will be hereinafter more fully described, shown in the accompanying drawings, and particularly pointed out in the appended claims, it being understood that changes in the form, proportion, size, and minor details may be made within the scope of the claims without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawings, Figure 1 is a perspective view of a rolled-goods-measuring machine constructed and arranged in accordance with the present invention. Fig. 2 is a cross-sectional view thereof. Fig. 3 is a longitudinal sectional view taken through the winding device. Fig. 4 is an enlarged detail sectional view taken through the registering mechanism of the machine. Fig. 5 is a detail view of the registering mechanism, showing the dials thereof. Fig. 6 is a detail sectional view illustrating the mounting of the slidably-adjustable member of the winding apparatus. Fig. 7 is a detail sectional view of a modified form of bolt-board clamp.

Like characters of reference designate corresponding parts in all the figures of the drawings.

In carrying out the present invention there is provided a base or bottom 1, from the opposite ends of which rise the end pieces 2, which may be of any desired shape, although preferably tapered upwardly, as clearly indicated in the drawings, and connected at their upper ends by means of an idle roller 3, which, besides forming a support for the intermediate portion of the goods being measured, also braces the end pieces. The end pieces are furthermore braced by means of a vertical partition 4, which is disposed centrally and longitudinally of the frame and is connected to the bottom and the opposite end pieces. At the rear edge of the bottom piece 1 there is a back 5, which corresponds to the partition 4, and between the partition and the back there is provided a downwardly-bowed plate 6, which forms a trough or receptacle for the reception of a bolt of goods, as indicated at 7, so that the bolt may lie loosely within the trough or receptacle in order that the goods may be conveniently pulled or unrolled therefrom and also to obviate the pivoting of the opposite ends of the bolt-board.

In the front portion of the bottom of the frame there is provided a dovetailed groove 8, extending longitudinally for the entire length of the bottom piece, and within this groove there is mounted a feed screw-threaded rod 9, which is journaled in terminal bearings 10 and 11, provided at opposite ends of the frame. One end of this rod, preferably the left-hand end looking toward the front of the machine, is made polygonal and projected beyond the adjacent bearing, as indicated at 12, for the detachable reception of a suitable crank, whereby the rod may be rotated for

the purpose of adjusting the movable element of the winding means. Upon the feed-rod there is provided a bracket or standard 13, having a dovetailed foot 14, which is slidably mounted in the groove 8 and is provided with a longitudinal screw-threaded opening 15 for the reception of the rod 9, whereby the rotation of the latter is designed to feed the bracket in a longitudinal direction between the opposite ends of the frame. It will here be observed that the end of the frame which is opposite the polygonal end of the feed-screw is provided with an opening 16, which communicates with the adjacent end of the groove in the bottom of the frame and is of a size to receive the bracket 13 in order that the latter may be readily fitted to the feed-screw, it of course being understood that the bearing 11 is not fitted in place until after the bracket has been mounted upon the rod.

A circular vertically-disposed rotatable head 17 is mounted upon what will be termed the "inner" side of the bracket 13, preferably by means of a pointed stationary journal 18, piercing the upper end of the bracket and the center of the head, so as to form a pointed projected pin portion 19. At opposite sides of this pin are provided the substantially parallel spring-jaws 20, which are secured to the adjacent outer face of the head and are designed to form a spring-clip to snugly embrace the adjacent end of a bolt-board 21, which is thrust into the clip and receives the pin 19 in the end thereof, whereby a detachable connection is effected between one end of the board and the rotatable head 17.

For rotating the bolt-board there is provided a shaft having a screw-threaded portion 22, which pierces a standard or upright 23, carried by a projection 24 of the bottom 1 and located exteriorly of the frame at that end which is opposite the end having the vertical opening therein. The intermediate portion of the screw-threaded shaft is mounted within a tubular bearing 25, which pierces the upright 23 and the adjacent end piece 2 and in which the screw-threaded portion of the shaft loosely rotates. The inner end of the shaft is provided with an enlarged smooth cylindrical portion 26, from which project the opposite outwardly-flared spring stem portions 27, carrying at their outer ends the clamps or jaws 28, corresponding to the jaws or clamps 20 and designed to snugly embrace the adjacent end of the bolt-board 21, thereby completing a spool for the reception of the goods as it is unwound from the original roll. Upon the cylindrical portion 26 there is mounted a circular head 29, which is a duplicate of the opposite head 17, the adjacent inner face of the end piece of the frame being provided with a circular socket or recess 30 for the reception of the adjacent head 29, as will be hereinafter explained.

In order that the jaws 28 may be snugly clamped upon and also released from the bolt-board 21, it is designed to provide for an endwise-adjustable movement of the operating-shaft 22 by means of a hand-nut 31, mounted upon the outer end portion of the shaft and preferably bearing against the inner arm of an upstanding yoke-shaped bearing-bracket 32, carried upon the outer side of the upright 23, whereby the shaft may be drawn outwardly, so as to draw the cylindrical portion 26 into the enlarged bore portion 33 of the tubular bearing 25, so as to insure a firm bearing for the shaft and to bring the head 29 into engagement with the back of the recess 30 in the end piece 2, whereby said head is stopped against outward movement, and further endwise movement of the shaft will draw the diverged stem portions 27 through the central opening in the head, and thereby clamp the jaws 28 firmly upon the bolt-board 21. A reverse endwise adjustment of the shaft under the action of the adjusting-nut 31 will produce a corresponding loosening of the jaws 28, so as to permit removal of the bolt-board. For the convenient manipulation of the shaft there is provided an operating-crank 34, which is detachably applied to the outer end of the shaft and is also designed to be removed therefrom and applied to the polygonal end 12 of the feed-screw 9 for the purpose of adjusting the head 17 toward and away from the head 29 to permit of the application and removal of the bolt-board and to accommodate the winding means to bolt-boards of different sizes.

In using the present device a bolt of cloth is deposited in the trough or receptacle 6 and the free end of the cloth is passed over the idle roller 3 at the top of the frame and thence downwardly and connected to the bolt-board included in the winding means, as best indicated in Fig. 2 of the drawings. In order that sufficient tension may be placed upon the goods, suitable rods or idle rollers 35 and 36 extend between the end pieces and are located between the receptacle 6 and the roller 3. The operating-crank 34 is manipulated to rotate the winding-spool, comprising the bolt-board 21 and the opposite heads 17 and 29, whereby the material is drawn from the original bolt to the bolt-board 21. To indicate the number of yards contained in the roll of cloth, suitable recording means is mounted in operative relation to the roller 3, which will be termed the "measuring-roll," said means being best illustrated in Fig. 4 of the drawings, wherein it will be seen that one journal 37 of this roller is projected through the end piece 2 and is provided upon its outer end with a pinion 38, which is in mesh with a gear 39, carried by a journal 40, projected outwardly from the adjacent end piece 2 and also having a terminal bearing in a dial-plate 41, which is held snugly in a metallic ring or casing 42, carried by the end piece and having a glass face-plate 43 to cover the registering means. Upon the outer end of the journal 40 there is provided an index finger or hand 44, designed to coöperate

with a dial 45, marked upon the dial-plate 41, as best indicated in Fig. 5, and graduated to indicate fractions of a yard. Above the journal 40 there is provided another journal 46, having terminal bearings in the dial-plate 41 and the end piece 2 and is driven from the journal 40 by an intermediate train of gears 47, arranged to give the upper journal 46 a fraction of a rotation to every complete rotation of the journal 40. Upon the outer end of the journal 46 is provided an index finger or hand 48, which is designed to coöperate with a dial 49, marked upon the outer side of the dial-plate 41, as clearly indicated in Fig. 5, and designed to indicate yards, whereby the exact length of the material passing over the measuring-roller 3 is accurately and clearly indicated in yards and fractions of a yard.

From the foregoing description it is apparent that all the parts of the present device are compactly arranged within the supporting-frame so as to be housed and protected thereby and also in intimate relation for mutual coöperation when the machine is manipulated to rewind goods from a bolt or roll to an empty spool or bolt-board.

In order that the registering mechanism may be conveniently set back whenever desired, the journal 46 of the finger or hand 48 is provided with a handle or finger-piece *a*, located at the inner face of the adjacent end piece 2.

As indicated in Fig. 7, the clamps 20 for engaging the bolt-board 21 may be carried by the journal or pin 18, which is passed through the head 17 and the bracket 13 and held in place by means of a nut 18ª, applied to the projected outer end of the pin or journal.

What I claim is—

1. In a rolled-goods-measuring machine, the combination with a frame, of a winding device including a rotatable and endwise-adjustable operating-shaft having clamping-jaws to embrace one end of a bolt-board, and means for drawing the clamping-jaws together by an endwise adjustment of the shaft.

2. In a rolled-goods-measuring machine, the combination with a rotatable shaft mounted upon the frame and having a screw-threaded portion, and clamping-jaws, of an adjusting-nut fitted to the screw-threaded portion of the shaft and bearing against the frame, and means for drawing together the clamping-jaws by an endwise movement of the shaft under the action of the adjusting-nut.

3. In a rolled-goods-measuring machine, the combination with a frame, of a winding device embodying a rotatable endwise-shiftable shaft having diverged clamping-jaws at one end thereof, a head loosely fitted upon the shaft adjacent to the inner ends of the clamping-jaws, and means to adjust the shaft in an endwise direction to draw the jaws into frictional engagement with the opening in the head and thereby draw the jaws together.

4. In a rolled-goods-measuring machine, the combination with a frame, of a winding device embodying an endwise-adjustable and rotatable operating-shaft journaled in the frame, and provided at one end with divergent clamping-jaws, a head loosely mounted upon the jaw end of the shaft for frictional engagement with the jaws, and means for adjusting the shaft in an endwise direction to draw the head into engagement with the frame and to draw the jaws into frictional engagement with the opening in the head and thereby to draw the jaws together.

5. In a rolled-goods-measuring machine, the combination with a frame having an upright, of a winding device embodying a bearing carried by the upright and having an enlarged inner end, a rotatable and endwise-adjustable shaft mounted in the bearing and having a screw-threaded portion projected at the outer side of the upright, and divergent spring clamping-jaws at the inner end of the shaft and located at the inner side of the upright, means for rotating the shaft, a head loosely fitted to the inner end portion of the shaft, and an adjusting-nut fitted to the projected screw-threaded portion of the shaft and bearing against the outer side of the upright.

6. In a rolled-goods-measuring machine, the combination with a frame comprising a bottom and opposite uprights, one of which uprights is provided with a socket in its inner face, of a winding device comprising a rotatable and endwise-adjustable operating-shaft piercing the upright at the center of the socket therein and having its inner projected end provided with divergent clamping-jaws, a head slidably carried by the inner end of the shaft and adapted to be seated in the socket flush with the inner face of the upright, means for adjusting the shaft in an endwise direction to draw the clamping-jaws into frictional engagement with the head and thereby to draw the jaws together, an opposite rotatable head having clamping-jaws, and a bracket rotatably supporting the head and adjustable toward and away from the first-mentioned head.

7. In a rolled-goods-measuring machine, the combination with a frame embodying a base having a longitudinal groove formed in the upper face and at one side of the center thereof, and opposite end uprights, one of which uprights is provided with an opening registering with the adjacent end of the groove, of a receptacle to loosely contain a roll of goods located opposite the groove, a measuring-roll journaled in the upper portions of the uprights, an indicating device carried by one of the uprights and in operative relation to the measuring-roll, a feed-screw journaled in the groove of the base, a bracket inserted through the opening in one of the uprights and having a foot provided with a screw-threaded opening receiving the feed-screw, a rotatable head journaled upon the bracket, and provided with a pair of clamping-jaws, a rotatable endwise-adjustable winding-shaft pierc-

ing the other upright and having its outer projected end screw-threaded, divergent spring clamping-jaws carried by the inner end of the shaft, a head slidably carried by the inner end of the shaft, an adjusting-nut fitted to the screw-threaded portion of the shaft and bearing against the outer side of the adjacent upright, the outer ends of the shaft and the feed-screw being made polygonal, and an operating-crank for detachable application to the polygonal ends of the winding-shaft and the feed-screw.

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

HENRY RICHARDSON MEADE.

Witnesses:
HERBERT L. PALMER,
S. M. MCKEE.