

(No Model.)

3 Sheets—Sheet 1.

G. L. WILCOX, H. F. HALLENBECK & T. WANDELL.
CLOTH MEASURING MACHINE.

No. 478,531.

Patented July 5, 1892.

Fig. 1.

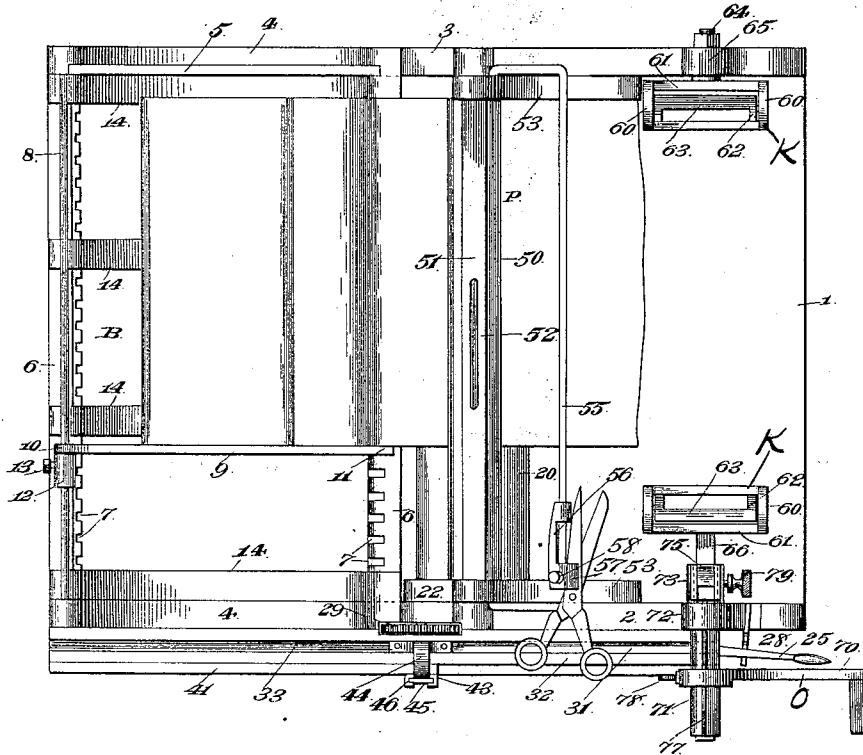
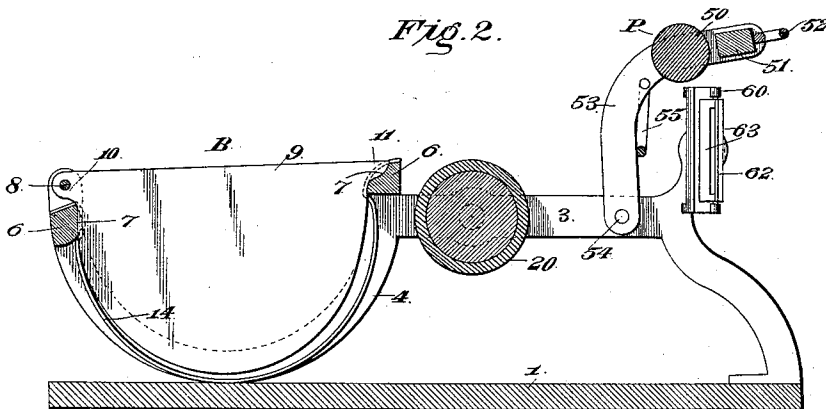


Fig. 2.



Witnesses

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3 Sheets—Sheet 2.

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Fig. 3.

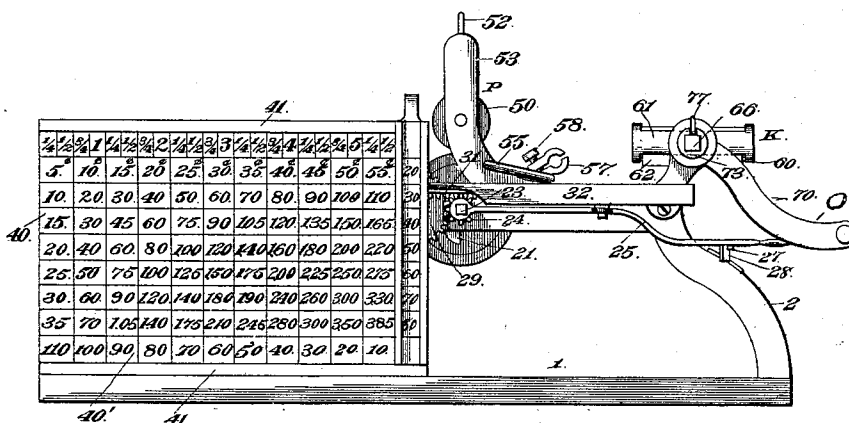


Fig. 4.

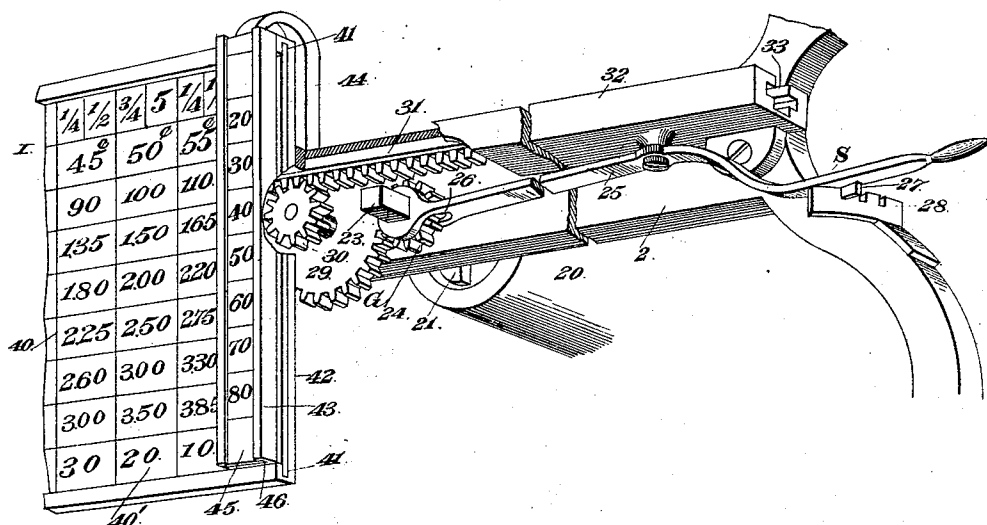
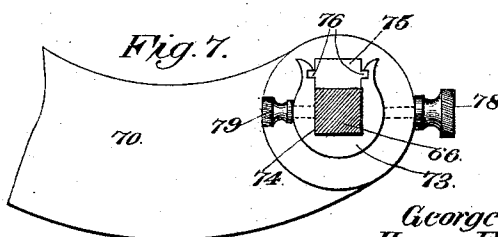


Fig. 7.



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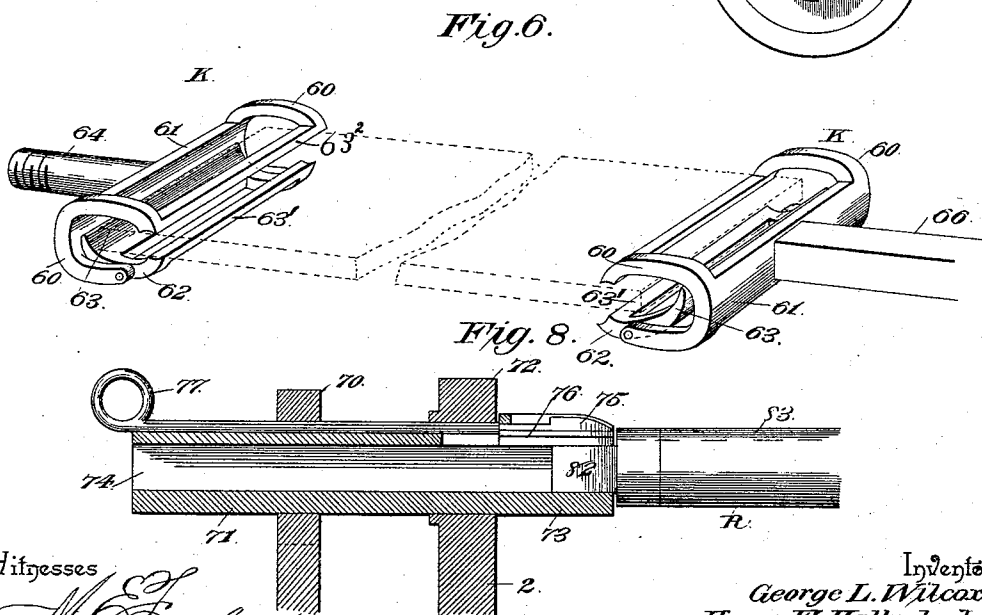
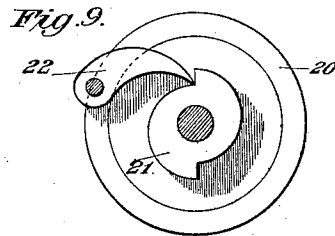
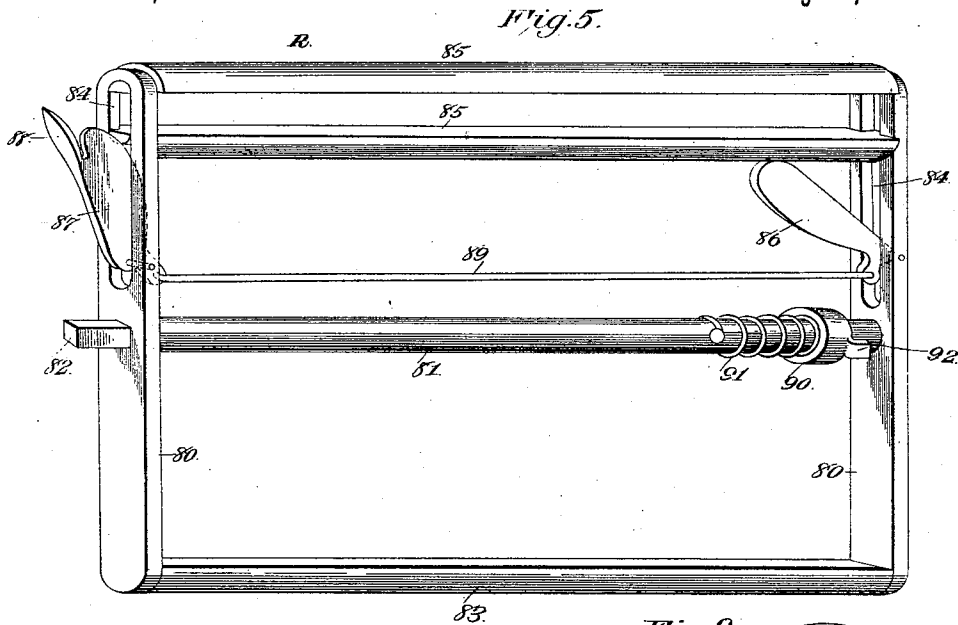
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UNITED STATES PATENT OFFICE.

GEORGE L. WILCOX, HENRY F. HALLENBECK, AND TIMOTHY WANDELL, OF
ALBANY, OREGON.

CLOTH-MEASURING MACHINE.

SPECIFICATION forming part of Letters Patent No. 478,531, dated July 5, 1892.

Application filed July 23, 1891. Serial No. 400,510. (No model.)

To all whom it may concern:

Be it known that we, GEORGE L. WILCOX, HENRY F. HALLENBECK, and TIMOTHY WANDELL, citizens of the United States, residing at Albany, in the county of Linn and State of Oregon, have invented a new and useful Cloth-Measuring Machine, of which the following is a specification.

This invention relates to measuring-instruments, and more especially to that class thereof known as "cloth-measuring machines;" and the object of the same is to effect certain improvements in devices of this character.

To this end the invention consists in a machine embodying the construction hereinafter more fully described and claimed, and as illustrated on the three sheets of drawings, wherein—

Figure 1 is a plan view of this machine ready for operation. Fig. 2 is a central longitudinal section with the presser-roller raised. Fig. 3 is a front elevation. Fig. 4 is a perspective detail of the indicator, the rack-bar, the operating-gears, and the shifting mechanism therefor. Fig. 5 is a perspective detail of the reel. Fig. 6 is a perspective detail of the clamps for the reel or for a board for holding the bolt, such board being shown in dotted lines. Fig. 7 is an inner end elevation of the crank-handle. Fig. 8 is a longitudinal section through the center of the crank-shaft, showing the stub-shaft on one of the clamps as engaged therein. Fig. 9 is a front end view of the cloth-roller.

Referring to the said drawings, 1 is the base of this machine, which supports the end frames 2 and 3, each having a semicircular depression 4 at the left side of the machine, that in the rear frame 3 being closed by a removable end piece 5. These depressions 4 are connected near their upper ends by bars 6, having notches 7, and at the upper outer ends by a rod 8. A partition 9 has tongues 10 and 11. The tongue 10 is perforated to slide on the rod 8, the body of the partition adjacent this tongue engaging the notches in one bar 6. The tongue 11 detachably engages the notches in the other bar.

12 is a block sliding on the rod 8 and adjustably secured thereon by a set-screw 13. 14 are curved straps connecting the bars 6

and following the curvature of the depressions 4. By this means a bolt or roll of cloth or fabric of any width may be put into the basket B thus formed, the partition 9 being adjusted as may be required if the fabric be narrow and held adjusted by the block 12.

20 is the cloth-roller whose shafts are journaled in the end frames 2 and 3, and adjacent the former a double-toothed ratchet-wheel 21 (see Fig. 9) is mounted on the shaft and engaged by a pawl 22, pivoted at its other end to the end frame 2. This shaft of the roller is squared, as seen at 23, and loosely mounted thereon is the square hub of a gear-wheel 24.

25 is a lever pivoted to the frame and having a fork 26 at one end which embraces said gear-wheel, while its other end has a tongue 27, moving over a plate 28, provided with three notches.

29 is a large idle-gear carrying on its shaft a small pinion 30, which engages a rack-bar 31, sliding within a casing 32, carried by the end frame 2 and having a slot 33 in its upper side. By this construction it will be seen that as the cloth-roller 20 is turned in the direction permitted by its ratchet-wheel 21 the gears G will drive the rack-bar slowly in the other direction; but when the shifting mechanism S is operated to slide the small gear-wheel 24 outwardly on the square shaft 23 this wheel will engage the rack-bar and move it more rapidly in the opposite direction, the idle-gear and its pinion at that time revolving without effect.

I is the indicator, which comprises a table 40, marked upon a card and detachably inserted in grooves 41 along the edges of the vertical plate 42 at the front end of the machine, an arm 43 passing vertically across the face of this table and having its upper end 44 bent over, passed through the slot 33 in the casing, and connected with the rack-bar, and a strip 45, bearing prices per yard and removably engaging vertical grooves 46 at the edges of this arm, the various prices moving over horizontal rows of prices for several yards or fractions thereof marked on the face of the table 40. By having this table and the strip removable they may be replaced by others bearing different figures, which are useful when the goods being measured is of

greater or less value that comes within the range of the several vertical prices marked on the strip 45. (Shown in the drawings.)

The presser-roller P consists of a roller 50, journaled in a swinging frame whose cross-bar 51 carries a handle 52, and each of whose end bars 53 is curved, as shown, and pivoted at 54 to one of the end frames, and the weight of the swinging frame and roller causes the latter to rest upon the cloth-roller 20, as will be obvious.

55 is a guide consisting of a wire secured at its ends to the end bars 53 and passing across the swinging frame adjacent the two rollers, and after the cloth has been drawn through said rollers and beneath this guide it can be cut straight across by a pair of scissors run along close to this guide. 56 is a clamp sliding at one end on the guide and having its other end 57 turned at right angles to its body and bifurcated, so as to receive one member of the pair of scissors, as shown, a set-screw 58 holding the bifurcated ends upon said member.

In Fig. 6 is shown the clamps K, each of which is of the following construction: 60 are the U-shaped ends connected by a rear cross-web 61, and 62 are curved arms centrally pivoted inside the lower ends and connected by two cross-bars 63 63', the construction being such that when an article is forced into the clamp between the ends 60 it will strike the rear cross-bar 63 and turn the curved arms on their pivots, so as to bring the front cross-bar 63' against the article with a force which increases as the article is driven inwardly. One of the clamps K has a stub-shaft 64 journaled in an eye 65 in the rear end frame 3, while from the other clamp projects a square shaft 66.

The shaft of the operating-crank O is best illustrated in Figs. 7 and 8. Said crank consists of a crank-handle 70, carrying a crank-shaft 71, which is journaled in an eye 72 in the front end frame 2, and the inner end of which shaft is laterally enlarged, as seen at 73, Fig. 1, and provided with a square opening 74 of a size to receive the square shaft 66. This opening is closed at all sides except its top, and at this side a slide 75, having tongues 76 engaging grooves in the sides of the enlargement or head 73, is longitudinally movable of said head, so as to close this side of the opening 74 after a square shaft has been passed longitudinally into this opening. It will be obvious that the slide can be drawn longitudinally in the crank-shaft 71 and partially through the eye 72, in which said shaft is journaled. The slide has a handle 77, also passing longitudinally through this eye and through the inner end of the crank-handle 70, and when this handle is manipulated the slide can be moved in the proper direction. The crank-shaft 71 is longitudinally adjustable through the crank-handle 70 by means of a set-screw 78, for a purpose to appear hereinafter. With this construction of parts a board may

be inserted between the two clamps K and the square shaft 66 of one of them passed into the opening 74 in the crank-shaft 71, after which a bolt of cloth may be put into the basket B and passed between the rollers to this board, and by turning the crank the cloth will be wound on the board and the revolution of the cloth-roller 20 will operate the gears and move the arm 43 across the table 40. Supposing the latter to be marked with ten yards, after the arm has moved this distance the shifting mechanism S is operated to disconnect the gear-wheel 24 and throw it out of engagement with the idle-gear 29, when the rack-bar can be returned to its initial position with the arm 43 at the zero-point on the table 40. The shifting mechanism is then moved back to re-engage the gears and ten yards more can be measured. In this manner the machine serves as a cloth-measuring instrument and cloth can be drawn from the bolt onto another bolt or onto a board and cut in shorter lengths. Obviously by adjusting the partition various widths of cloths, even down to ribbon, could be accurately measured, and as the wound bolt or board is filled it can be removed from the clamps by loosening a set-screw 79, which we should have said passes through the head 73 and bears against the square shank 66.

In Fig. 5 is shown a reel R, which we preferably use in connection with this machine. The said reel comprises end bars 80, connected by a central cross-piece 81, having one end 82 squared and also connected by a rigid side piece 83. The other ends of the end pieces 80 have longitudinal slots 84, in which move the extremities of two clamping-bars 85.

86 is a bell-crank eccentric cam pivoted at its angle in one of the slots 84. 87 is a similarly-shaped cam pivoted in the other slot 84 and having a handle 88, and 89 is a rod connecting the rear arms of these cams, by which means the cloth as it is led from the basket can be passed between the two clamping-bars 85, and the handle 88 operated to move the two cams simultaneously, so as to press the inner bar 85 against the outer. One end bar 80 is then secured in the clamp K in the manner above described, and a catch 90, which slides on the center bar 81 and is borne normally outward thereon by a spring 91, has its outwardly-projecting fingers 92 engaged over the two cross-bars 63' and 63² of the clamp K, so as to prevent their moving apart to disengage the reel. The squared end 82 at the other extremity of the central cross-bar 81 is then passed into the head 73 of the crank-shaft 71 and the crank is turned to draw the cloth from the basket. With this construction a given number of yards and fractions thereof may be drawn from the bolt and the price of that measured off will be readily seen alongside the arm 43 on the table 40. After the desired amount has been withdrawn from the bolt the squared end 82 is lifted out of the head 73, and (the cloth having been

cut alongside the guide as above described) the reel is elevated at the end. The handle 88 can then be operated to loosen the clamping-bars 85, after which all the cloth on the reel can be withdrawn longitudinally therefrom and the reel replaced for further use.

There may be several reels, constructed as above described, but of different lengths, and when any reel is used one end is inserted in the clamp, which is journaled in the eye 65, while the squared end 82 at the other end of the reel is passed into the opening in the head 73 of the crank-shaft, the latter being adjusted longitudinally, so as to accommodate the variable lengths of the different reels. When a board is used in place of the reel, the other clamp K is brought into play and its squared shaft 66 is passed into the hole in the crank-shaft, and at this time the set-screw 79 is used for adjusting this clamp the proper distance from the other clamp to accommodate the variable lengths of the different boards and the crank-shaft need not be adjusted longitudinally in the eye 72.

Across the lower edge of the table 40, above referred to, is a scale 40', bearing numbers increasing in a direction opposite to the increase of the price-marks elsewhere on the table, and this scale is useful in connection with the arm 43 when the gears G are in engagement with each other and the rack-bar is being moved slowly to the rear (or opposite to the direction of movement of the cloth) by the small pinion 30. Thus when cloth is being unwound by the dealer from its bolt onto a board for storage on the shelf it can be measured up to one hundred yards with the table illustrated, the scale 40' giving only the linear measure without the price. When he desires afterward to parcel out short pieces from the board to his customers, the shifting mechanism S is operated so as to throw the gear-wheel 24 directly into engagement with the rack, and this will move the arm 43 in the other direction over the table 40 and at much greater speed, the dealer at this time reading the other scale with the price-marks adjacent. In whichever direction the rack-bar is moving it sometimes occurs that after the arm 43 has reached its limit of movement it is necessary to set it back, because the scale on the table is not long enough to accommodate at a single movement of the arm the length of the piece being measured. In order to so set the rack-bar back, the lever 25 is moved so that its tongue 27 will engage the central of the three notches in the plate 28, whereby the fork 26 will move the gear-wheel 24 out of engagement with the rack, but not sufficiently far to bring it into engagement with the idle-gear 29. At this time the rack and its indicator-arm may be set back over the table in either direction to the point of starting in a manner which will be clear.

What is claimed as new is—

1. In a cloth-measuring machine, the combination, with a measuring-roller and drawing devices, of a basket comprising cross-bars supported by the frame and connected by curved straps, said bars having notches, an end piece at one end of said bars, and a partition within the basket, its ends engaging said notches and adjustable in the length of the bars, substantially as described.

2. In a cloth-measuring machine, the combination, with a roller and measuring devices driven thereby, of a basket comprising end pieces, notched cross-bars connecting them, a rod also connecting them above one bar, a block movable on said rod and adjustable by a set-screw, curved straps connecting said bars, an end piece at one end of the basket, and a partition having tongues at its ends, one of which engages a notched bar and the other of which slides on said rod, substantially as described.

3. In a cloth-measuring machine, the combination, with a base having end frames and a basket on the base, of a cloth-roller whose shafts are journaled in said frames, one of said shafts being squared, a gear-wheel loosely mounted on said shaft, shifting mechanism for said gear-wheel, and measuring devices connected with this wheel by an idle-gear engaging the wheel when the latter is in one of its adjusted positions, substantially as described.

4. In a cloth-measuring machine, the combination, with a cloth-roller, one of whose shafts is squared, a gear-wheel loosely mounted thereon, and shifting mechanism for said gear-wheel, of a large idle-gear having a small pinion on its shaft, a rack-bar engaging said pinion and sliding in the casing, a table, and an arm on said rack-bar moving over the table, substantially as described.

5. In a cloth-measuring machine, the combination, with a cloth-roller having a gear-wheel on its shaft, a large idle-gear meshing therewith, and a small pinion on the shaft of this idle-gear, of a longitudinally-slotted casing, a rack-bar moving therein and in mesh with said pinion, a table, and an arm projecting from said rack-bar through the slot in the casing and moving over the table, substantially as described.

6. In a cloth-measuring machine, the combination, with the cloth-roller, a pinion connected to its shaft, and a rack-bar moved longitudinally by said pinion, of an arm projecting from said rack-bar and marked with various prices per yard, and a table beneath said arm marked opposite each price with the prices of several yards and fractions thereof, substantially as described.

7. In a cloth-measuring machine, the combination, with a cloth-roller, an arm driven thereby, and a strip removably secured to said arm and marked with various prices per yard, of a plate beneath the arm and a card removably attached to the plate and marked with a table giving opposite each price-mark

on said strip the prices of several yards and fractions thereof, substantially as described.

8. In a cloth-measuring machine, the combination, with the cloth-roller, a pinion connected to its shaft, and a rack-bar moved longitudinally by said pinion, of an arm projecting from said rack-bar and having turned-over edges, a strip removably secured beneath said edges and marked with various prices per yard, a plate beneath the arm, having turned-over edges, and a card removably inserted beneath said edges and marked with a table giving opposite each price-mark on said strip the prices of several yards and fractions thereof, substantially as described.

9. In a cloth-measuring machine, the combination, with the cloth-roller, a ratchet connected therewith, and a pawl engaging said ratchet, of a pinion engaging a rack-bar, an arm connected to said rack-bar, a table over which said arm moves, connections between said roller and pinion, and a shifting device for throwing said connections out of gear, as and for the purpose set forth.

10. In a cloth-measuring machine, the combination, with the cloth-roller and measuring devices driven thereby, of a swinging frame pivoted to the frame of the machine, a presser-roller in said swinging frame resting normally upon the cloth-roller, a guide connecting the sides of this frame in rear of and parallel with the rollers, and a scissors-clamp sliding on said guide, substantially as described.

11. In a cloth-measuring machine, the combination, with the cloth-roller and the measuring devices driven thereby, of a crank-shaft journaled in the frame of the machine, a clamp detachably connected to said shaft, and a clamp journaled in a frame opposite said crank-shaft, each clamp comprising U-shaped ends connected by a rear cross-web, curved arms centrally pivoted inside the lower ends, and cross-bars connecting the ends of said arms, as and for the purpose set forth.

12. In a cloth-measuring machine, the combination, with the cloth-roller and the measuring devices driven thereby, of a clamp journaled in the end frame of the machine, a crank-shaft also journaled in the end frame opposite said clamp and having a hollow body, and another clamp having a squared shaft detachably engaging said body, the clamps being adapted for the reception of a winding-reel, substantially as described.

13. In a cloth-measuring machine, the combination, with the cloth-roller and the measuring devices driven thereby, of a clamp journaled in the end frame of the machine, a crank-shaft also journaled in the end frame opposite said clamp and having a head at its inner end provided with a hole opening through one side, a slide closing said open side, a winding-reel detachably secured in said clamp, and a square shaft connected with said reel and detachably mounted in said hole, as set forth.

14. In a cloth-measuring machine, the com-

bination, with the cloth-roller and the measuring devices driven thereby, of a clamp journaled in the end frame of the machine, a crank-shaft also journaled in the end frame opposite said clamp and having a square hole through its body and a head at its inner end through one side of which said hole opens, a slide having tongues engaging grooves within the open side in said head, a handle connected to said slide and extending throughout the length of the crank-shaft beyond the crank, a winding-reel detachably secured in said clamp, and a square shaft connected with said reel and removably mounted in said hole, substantially as described.

15. In a cloth-measuring machine, the combination, with the cloth-roller and the measuring devices driven thereby, of a crank-shaft journaled in the frame and having a square hole through its body, a winding-reel, and a square shaft connected therewith and detachably mounted in said hole, as and for the purpose set forth.

16. In a cloth-measuring machine, the combination, with the cloth-roller and the measuring devices driven thereby, of eyes in the end frames of the machine opposite each other, a clamp having a stub-shaft journaled in one eye, a shaft journaled in the other eye and having a hole in its body, a set-screw through the inner end of said shaft into said hole, a crank on the outer end of said shaft, a set-screw holding it adjustably thereon, a winding-reel, and a square shaft connected therewith and extending into the inner end of the hole in said shaft, substantially as described.

17. In a cloth-measuring machine, the combination, with the cloth-roller and the measuring devices driven thereby, of a reel comprising end pieces connected at one end by a cross-piece and having longitudinal slots in their other end, clamping-bars whose extremities move in said slots, eccentric cams pivoted in said slots and one of them having a handle, a rod connecting the cams, so as to cause them to move in unison, and means for revolving said reel, as set forth.

18. In a cloth-measuring machine, the combination, with the cloth-roller and the measuring devices driven thereby, of a reel, clamping-bars therein at one side thereof, cams for operating said bars, a square shaft connected with and projecting from said reel, and a crank-shaft journaled in the frame and having a square hole through its body in which said shaft is removably seated, substantially as described.

19. In a cloth-measuring machine, the combination, with the cloth-roller and measuring devices driven thereby, of a clamp journaled in the end frame of the machine, a crank-shaft journaled in the other end frame opposite said clamp, another clamp having a shaft detachably connected with said crank-shaft, a reel detachably engaged by said clamps and having clamping-bars at one side thereof, and

cams for operating them, substantially as described.

20. In a cloth-measuring machine, the combination, with the cloth-roller, a gear-wheel
5 on the shaft thereof, a swinging frame, and a cutter-guide carried by the frame adjacent said roller, of a table, an arm moving over the same, a gear to which said arm is connected, connections between said gear and gear-
10 wheel, and a shifting mechanism for throwing said connections into and out of operative position, substantially as hereinbefore set forth.

In testimony that we claim the foregoing as our own we have hereto affixed our signatures 15 in presence of two witnesses.

GEORGE L. WILCOX.

HENRY F. HALLENBECK.

TIMOTHY WANDELL.

Witnesses as to signatures of Wilcox and Wandell:

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