(No Model.)

C. TUXBURY.

CLOTH MEASURING MACHINE.

No. 452,816. Patented May 26, 1891.

Fig: 6.

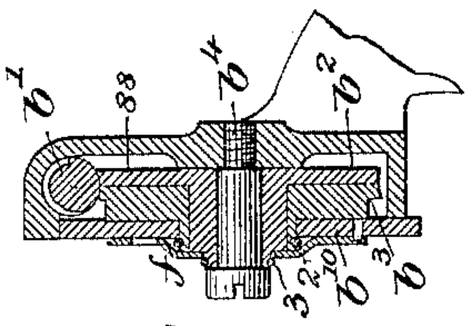


Fig: 3.

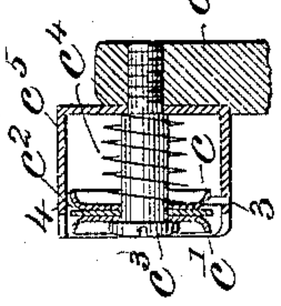


Fig: 5.

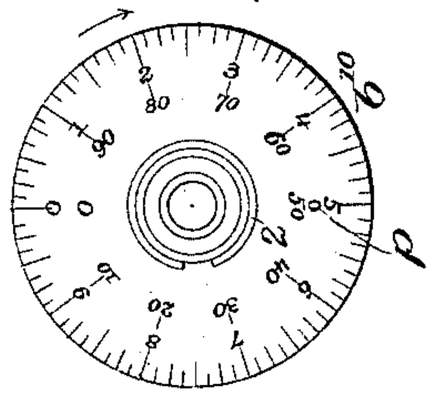


Fig: 2.

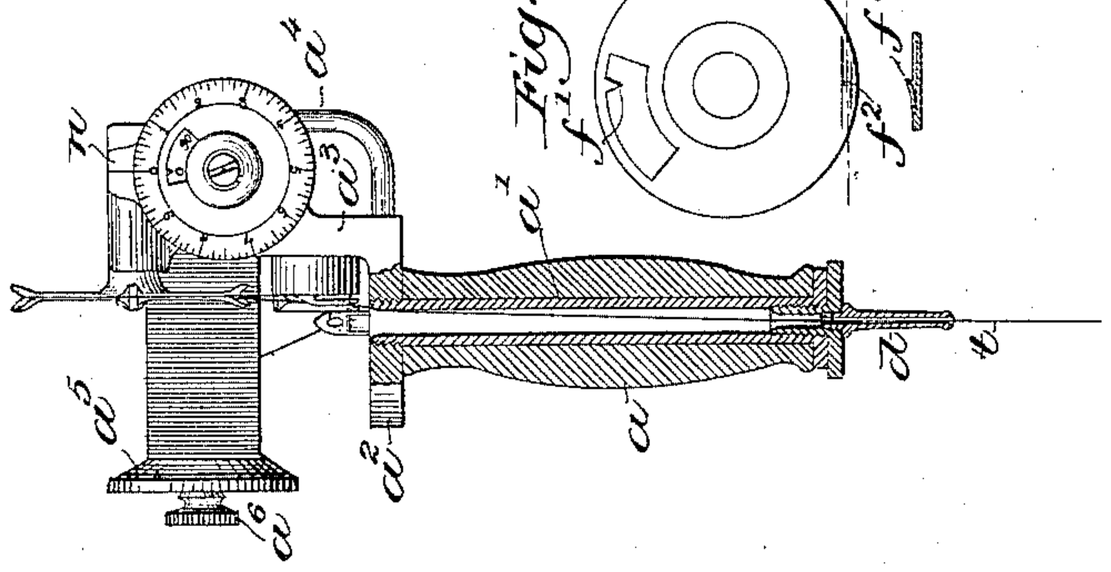


Fig: 4.

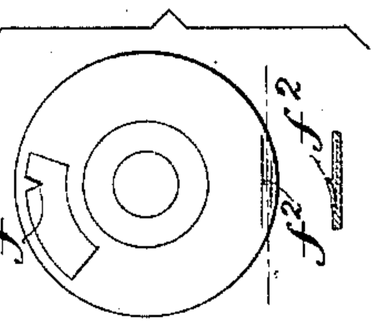
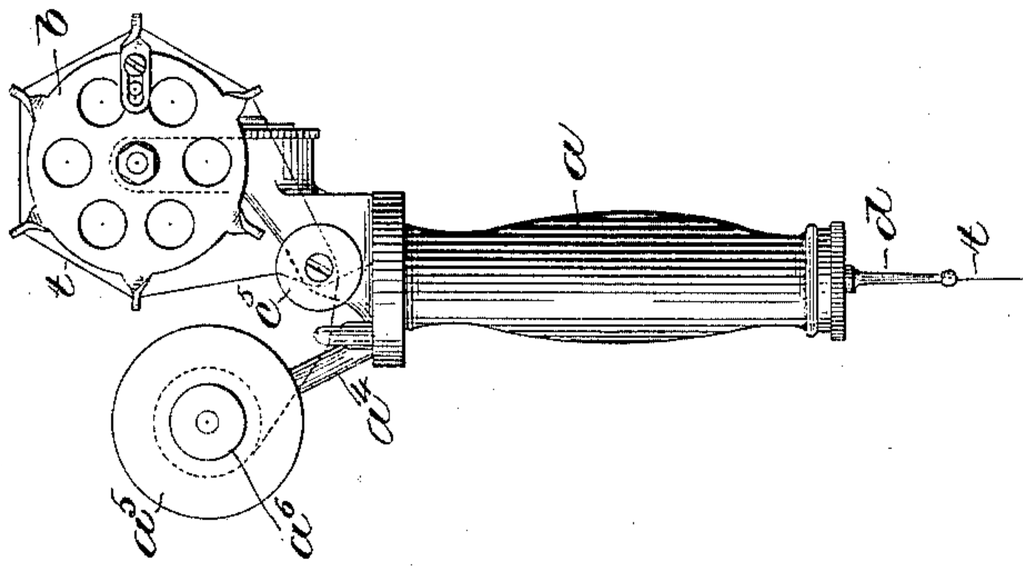


Fig: 7.



Witnesses.
Edward Fallen
Frederick L. Emery

Inventor.
Charles Tuxbury,
by Crosby & Gregory
attys

UNITED STATES PATENT OFFICE.

CHARLES TUXBURY, OF WINDSOR, VERMONT.

CLOTH-MEASURING MACHINE.

SPECIFICATION forming part of Letters Patent No. 452,816, dated May 26, 1891.

Application filed November 14, 1890. Serial No. 371,477. (No model.)

To all whom it may concern:

Be it known that I, CHARLES TUXBURY, of Windsor, county of Windsor, State of Vermont, have invented an Improvement in a Device for Measuring Cloth, of which the following description, in connection with the accompanying drawings, is a specification, like letters and figures on the drawings representing like parts.

This invention has for its object to improve and simplify the construction of that class of devices represented in United States Patent No. 375,026, granted to me December 20, 1887, to which reference may be had. In the device described in the said patent the cord is made fast to a grooved spool, from which it is unwound as the cloth is being measured, and on which it is again wound after the cloth has been measured, the cord between the spool and the delivery end of the device passing over a roll which actuates a register, the cord being acted upon by two independent tension devices attached to different parts of the hand-piece. To avoid this rewinding, I have so constructed the device as to enable a spool of thread to be held therein, the thread, after it has been used to measure the cloth, being broken off and thrown away. The thread is passed over a reel, and on its way to and after it passes the reel the thread is acted upon by tension-disks mounted on a common stud. The delivery-tube is provided with a bulbous end to enable the tube to be passed between the folds of the cloth more readily and to deliver the thread without unnecessary friction. The register has been simplified and the parts all more compactly arranged.

Figure 1, in elevation, represents a cloth-measuring device embodying my invention; Fig. 2, a view taken from the left of Fig. 1, the stock or hand-piece being broken out. Fig. 3 is a detail of the tension device; Fig. 4, a side elevation and section of one of the dials of the register; Fig. 5, a detail showing a second dial; Fig. 6, a section taken through the register.

The hand-piece, composed of wooden or equivalent shell a and a tube a', has at its upper end a head a^2, provided with an upright or stand a^3 and a spool-supporting rod a^4, on which rod is placed an ordinary spool a^5 of thread, the spool being retained on the rod by a set-nut a^6, or in other usual manner. The stand a^3 has a suitable bearing for a short rotating worm-shaft b', having fast on it the reel b, over struts of which is passed the thread t, used to measure the cloth, the said thread being left within or between the folds or windings of the fabric, and being laid or drawn off, rotating the reel so that it, through its worm-shaft b', rotates the counting devices, to be described, to indicate the number of yards of thread so reeled or drawn off. In my former patent the thread or cord drawn off was rewound, causing considerable loss of time, but by using a common spool of thread and breaking off the thread used in measuring much time is saved, and also the cost of construction of the machine is lessened.

Instead of employing several distinct tension-springs, as in the said patent, I have arranged two disks $c\,c'$, with a washer c^2 between on a stud screwed into the upright a^3, the said stud being surrounded by a spiral spring c^4, all the said parts being in a guide-box or shield c^5, which is provided at opposite points with holes or slots 3 4 to guide the thread correctly on its passage into and out from the tension device at the proper points. The hollow needle d, through which the thread is delivered into the fabric roll or package, is provided with a head or enlargement, as thereby the thread is better put into proper place in the folds. The worm b' engages two worm-wheels b^2 b^3, the worm-wheel b^2 being mounted upon a stud-screw b^4, turned into the gear b^3, the gear b^3 rotating upon the hub of the gear b^2. The gear b^3 has mounted upon its hub a dial-plate b^{10}, while upon the hub of the wheel b^2 is mounted a register or pointing-dial f, it having an indicator f' and a finger f^2. The dials b^{10} and f are each held frictionally upon the hub to move it by a suitable friction device, as 2 or 3, the said friction device, as herein shown, being nearly a circular piece of wire. The dial b^{10} is marked off its periphery by marks to indicate one-eighth yard, and by marks designating 1 2 3, &c., to 10, representing ten yards, and inside said marks another series of figures 10 20, &c., to 90 and 0, designating one hundred. The periphery of the gear b^2 has in practice eighty-eight teeth, and the periphery of the gear b^3 eighty teeth, and

as both wheels are engaged by the same worm b' it follows that the gear b^3, having the less number of teeth, is moved at a faster speed than the gear b^2. Assuming the machine to be at 0 point, as represented in the drawings, the rotation of the worm b', by the measuring-thread t passing over the reel b, will cause the rotation of the gears b^2 b^3 in the same direction, but at a different speed, each rotation of the gear b^3 carrying with it the dial b^{10} in the direction of the arrow in Fig. 5; but the dial f, connected with the hub of the slower-moving wheel, by falling behind the dial b^{10} leaves the indicator f' opposite the figure 10 of the line of figures nearest the center of rotation of the dial b^{10}. At the next rotation of the dial b^{10} the indicator f' will be found to stand opposite 20, and so on. The piece of cloth having been measured, the clerk will engage the dial b^{10} by hand and will turn the same freely on the hub of the gear b^3 until the 0 point in the outer line of figures of the said dial is uppermost or opposite the starting-point, (marked n in Fig. 2,) and in doing this the dial b^{10} is turned in the direction opposite the arrow thereon in Fig. 5, and as soon as the little hole t in the dial d^{10} comes opposite the stop or prong f^2 the latter enters the hole, taking the dial f back with it, thus restoring both dials into their normal position, ready to be again started for rotation in the direction of the arrow on the dial, Fig. 2, to measure a second piece of cloth.

The spool a^5 may be acted upon by any usual suitable contrivance employed to prevent spools from overrunning by means of momentum.

I claim—

The herein-described cloth-measuring device, consisting of the hand-piece a', the delivery-needle d, the head a^2, having the lug a^3 and spool-carrier a^4, and the tension device comprehending the stud c^3, the spring, the two washers, and the intermediate plate, combined with the reel, the worm-shaft on which it is mounted, and a counting device, all arranged as shown and described, and adapted to receive a spool containing the measuring-thread by which to actuate the reel, as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CHARLES TUXBURY.

Witnesses:
GEO. W. GREGORY,
EMMA J. BENNETT.