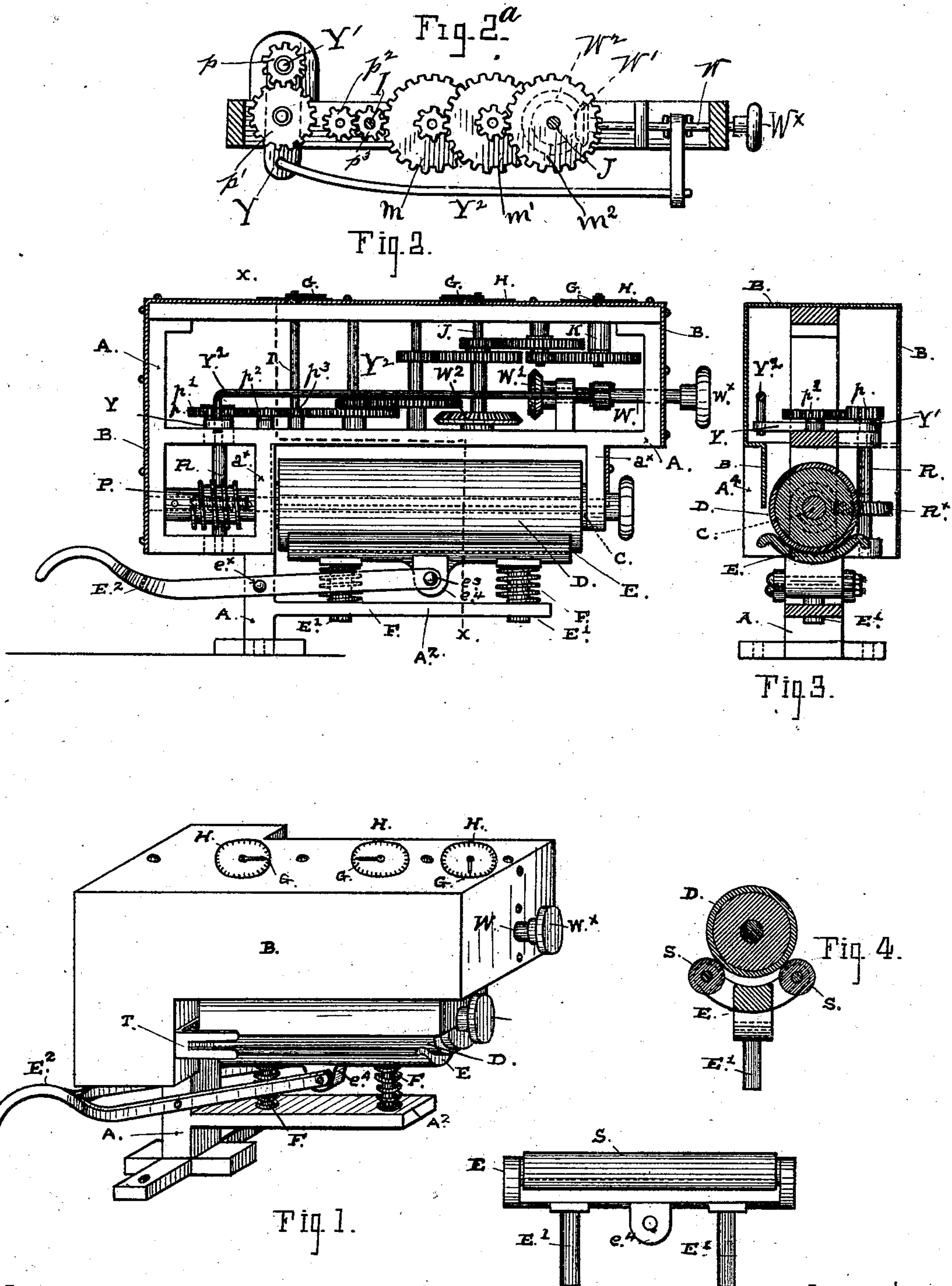


(No Model.)

R. M. WREN & A. J. OLIVER.
CLOTH MEASURING MACHINE.

No. 502,943.

Patented Aug. 8, 1893.



Witnesses:

Wm. Mayr

S. Isaac

Fig. 5.

Inventors:

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Att'y.

UNITED STATES PATENT OFFICE.

ROBERT M. WREN AND ANDREW J. OLIVER, OF OAKLAND, CALIFORNIA;
SAID OLIVER ASSIGNOR TO SAID WREN; EVA I. WREN ADMINISTRATRIX
OF SAID ROBERT M. WREN, DECEASED.

CLOTH-MEASURING MACHINE.

SPECIFICATION forming part of Letters Patent No. 502,943, dated August 8, 1893.

Application filed August 12, 1891. Renewed March 11, 1893. Serial No. 467,520. (No model.)

To all whom it may concern:

Be it known that we, ROBERT M. WREN and ANDREW J. OLIVER, citizens of the United States, residing in Oakland, in the county of Alameda and State of California, have invented certain new and useful Improvements in Cloth-Measuring Machines, of which the following is a specification.

Our invention has for its object to produce a measuring machine that is simple in construction and reliable in operation, to be used in the hand as a portable machine, or fixed to a table or a counter for measuring all kinds of cloth, ribbons, cordage, and fabrics of all kinds. To this end and object we produce an improved machine by the construction and combination of parts illustrated in the accompanying drawings that form part of this specification and in which—

Figure 1 is a perspective view of a machine embodying the novel parts of our invention. Fig. 2 is a front elevation showing the case in section. Fig. 2^a is a plan view of a portion of the gearing showing the means for throwing the indicating gear into and out of action. Fig. 3 is a vertical cross-section through Fig. 2 at about the line $x x$. Figs. 4 and 5 represent another construction of clamp to hold the cloth against the measuring cylinder, Fig. 4 being a cross-section and Fig. 5 a front view of the clamp.

A indicates the frame of the machine and B a casing or cover of sheet metal to inclose and protect the parts.

To fix the machine in position for use it is provided with a foot or bracket-piece with holes for screws whereby it can be attached permanently to a table or counter or a clamp and screw can be made a part of the frame as a means to fix it temporarily in position.

C is the principal shaft having bearings a^x in the frame, and D is the measuring roller fixed on the shaft.

E is a clamping-plate, or shoe, with a concave face corresponding to the curve of the measuring roller, and mounted under the roller on springs F that are applied in a suitable manner to exert constant pressure on the shoe and hold it to the surface of the roller.

The cloth or strip of fabric to be measured

being introduced between the roller and this shoe it is drawn through them, and the frictional contact or holding force of the parts is sufficient to make the roller rotate and run evenly without slip or lost movement as the cloth is pulled through.

The rotations of the measuring roller are marked and registered by pointers G on dials H set on the outside of the case, the pointers being fixed on the ends of upright shafts that are connected together and actuated by a train of gears similar to ordinary registering mechanism, such as is employed in machines of various kinds to register the movements of a working or moving part, except that in this case the dials and pointers are divided and arranged to mark inches and feet, or inches, feet and yards. In the present construction I have arranged and geared into the measuring roller two dials and pointers to mark inches and feet, and a third dial and pointer to indicate yards. The shafts I, J, K, of the three pointers are geared together and the necessary variations in the rate of movement of one over the other are produced by the train composed of gears $m m' m^2$, &c. This mechanism is so proportioned to the circumference of the measuring roller that the first pointer marks inches on its dial, and the other dial registers feet and yards; or if the third pointer and the dial are not used the machine registers feet and inches only. The revolutions of the measuring roller are transmitted to the first shaft I by the worm P on the roller shaft, a worm wheel R^x on the shaft R, and connecting gears $p' p^2 p^3$. The clamp E is held to place by guide-posts or rods E', passing through and playing in holes, in a guide-bar A² on the frame, and a thumb lever E² pivoted at e^x on the frame is attached by a loose joint e^3 to a lug e^4 on the bottom of the clamp. The free end of the lever is brought to the side of the frame in convenient position to be worked by one hand while the cloth to be measured is introduced between the roller and the clamp with the other hand. To insert the end of the cloth, or strip, the clamp is drawn away from the roller by means of the lever.

In place of the shoe or concave plate we

sometimes substitute rollers S S set in the frame or carrier S^x, so that the frictional surface to press the cloth against the measuring roller will have a rolling contact instead of a rubbing contact with the cloth; or rollers can be set or mounted in slots in the shoe E for the same purpose.

The side-gage T fixed on the side of the frame in front of the measuring roller will be found convenient for a guide to keep the cloth straight while it is being run through the machine. In most cases, however, the inner face A⁴ of the case at one end of the measuring roller will serve as a guide for this purpose.

Provision is made for setting the pointers back to zero after each measuring operation by arranging a short reversing shaft W at one side, with a finger knob W^x on the outer end, and a bevel pinion W' on the inner end that is thrown into gear with a bevel wheel W² on the last pointer-shaft. To set the pinion into and out of the gear the reversing shaft has sliding movement in its bearings, so that by pressing in the knob the pinion is set into the bevel gear and the shaft can be rotated by turning the knob, or by drawing it out they are thrown off. The same movements of the shaft W are caused to throw the main driving-gear into or out of action by connecting that shaft with a lever Y which is suitably fulcrumed preferably at one end, as shown at Y', which may be done by having it collared upon shaft R, and bears the pinion p' at about mid-length, which pinion meshes with pinion p² when in gear. The pinion p' can be thrown into and out of gear by means of the rod Y² connected at one end to the finger shaft W and at the other with the free end of the lever Y. When the pinion p' is out of gear with pinion p² the cloth roller is disconnected from the registering device, and when the pinions p' and p² are in gear the cloth roller is connected to the registering device.

In the operation of the machine thus constructed, the clamp is pressed back to admit the end of the cloth or strip of fabric and is then released, after which the cloth is drawn through with a steady movement until the desired number of feet or inches is indicated on

the dials, and the measured piece is then cut off close to the edge of the clamp. It should be mentioned that the pointers can be brought back to adjust the machine for measuring by having the dials arranged to turn on the top of the case, and instead of throwing back the hands the registering apparatus will be re-set by mounting the dials or centers on pivots, or in ring sockets so that they can be turned back to bring the zero point under the pointer. Such construction, of course, would render unnecessary the arrangement of reversing shaft and gears hereinbefore described.

Having thus fully described our invention, what we claim, and desire to secure by Letters Patent, is—

1. In a cloth-measuring machine, the combination of the measuring-roller, spring-pressed clamp to hold the cloth to the roller, the pointer-shafts carrying pointers in their ends, dials having divisions corresponding with linear measure, gearing connecting the first or units pointer-shaft to the shaft of the measuring roller, and the other shafts to the first pointer-shaft, as described, and reversing mechanism or means whereby the pointer shafts are reversed and the pointers are turned back to zero or the starting points on the dials, and the cloth roller thrown out of gear as described.

2. The combination with a cloth measuring roll and a spring controlled shoe or clamping plate, of the worm operated by said roll, a train of registering gears, a movable pinion mounted upon a suitable support, and having a suitable shifting rod for throwing said pinion into and out of gear with the train of registering gears, the registering devices or indicators secured in the casing of the machine, and the push rod W provided at its inner end with the gear W', whereby the registering devices or indicators may be set or manipulated in any desired way, as set forth.

In testimony that we claim the foregoing we have hereunto set our hands and seals.

ROBERT M. WREN. [L. S.]

ANDREW J. OLIVER. [L. S.]

Witnesses:

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