

(No Model.)

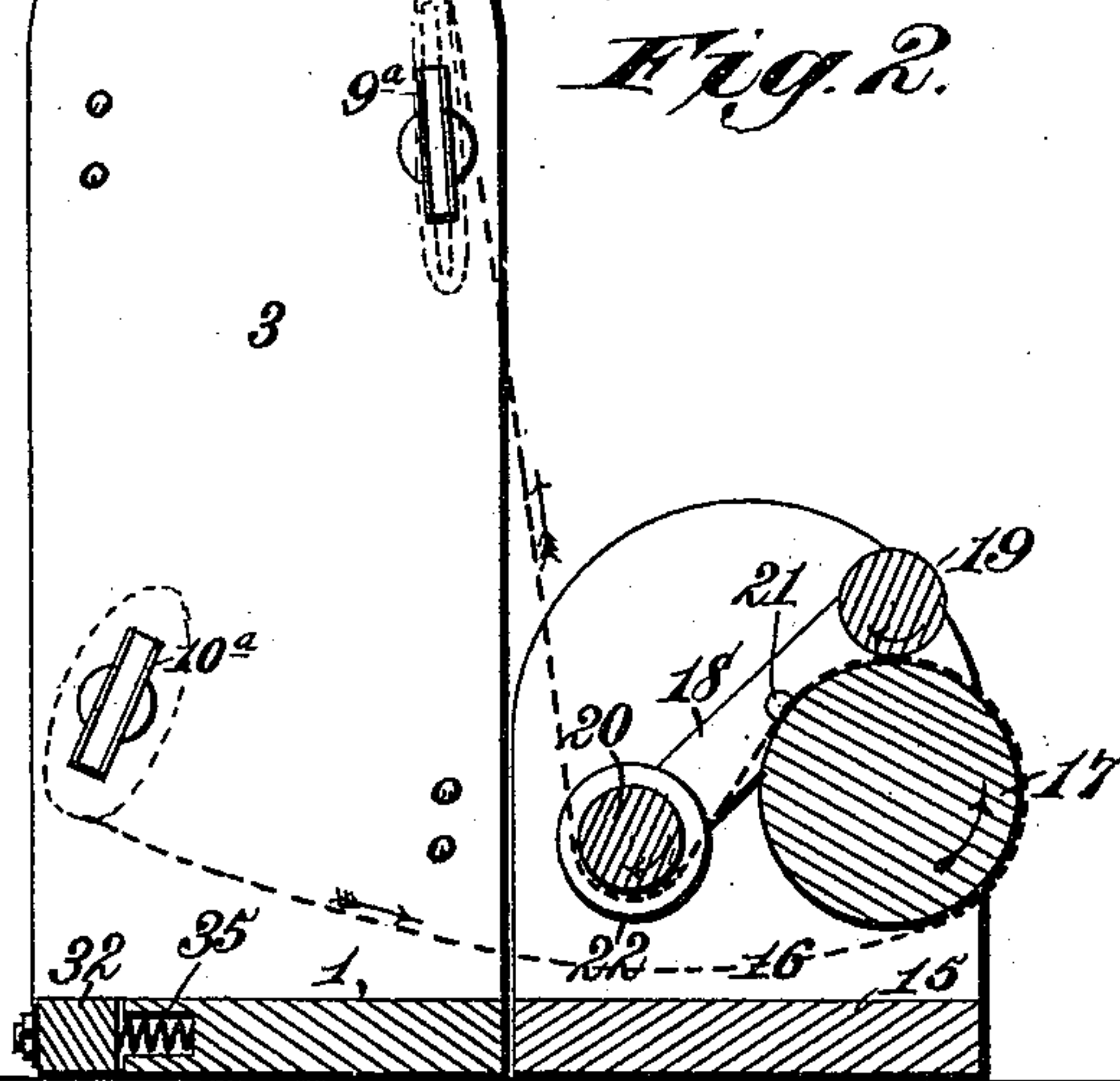
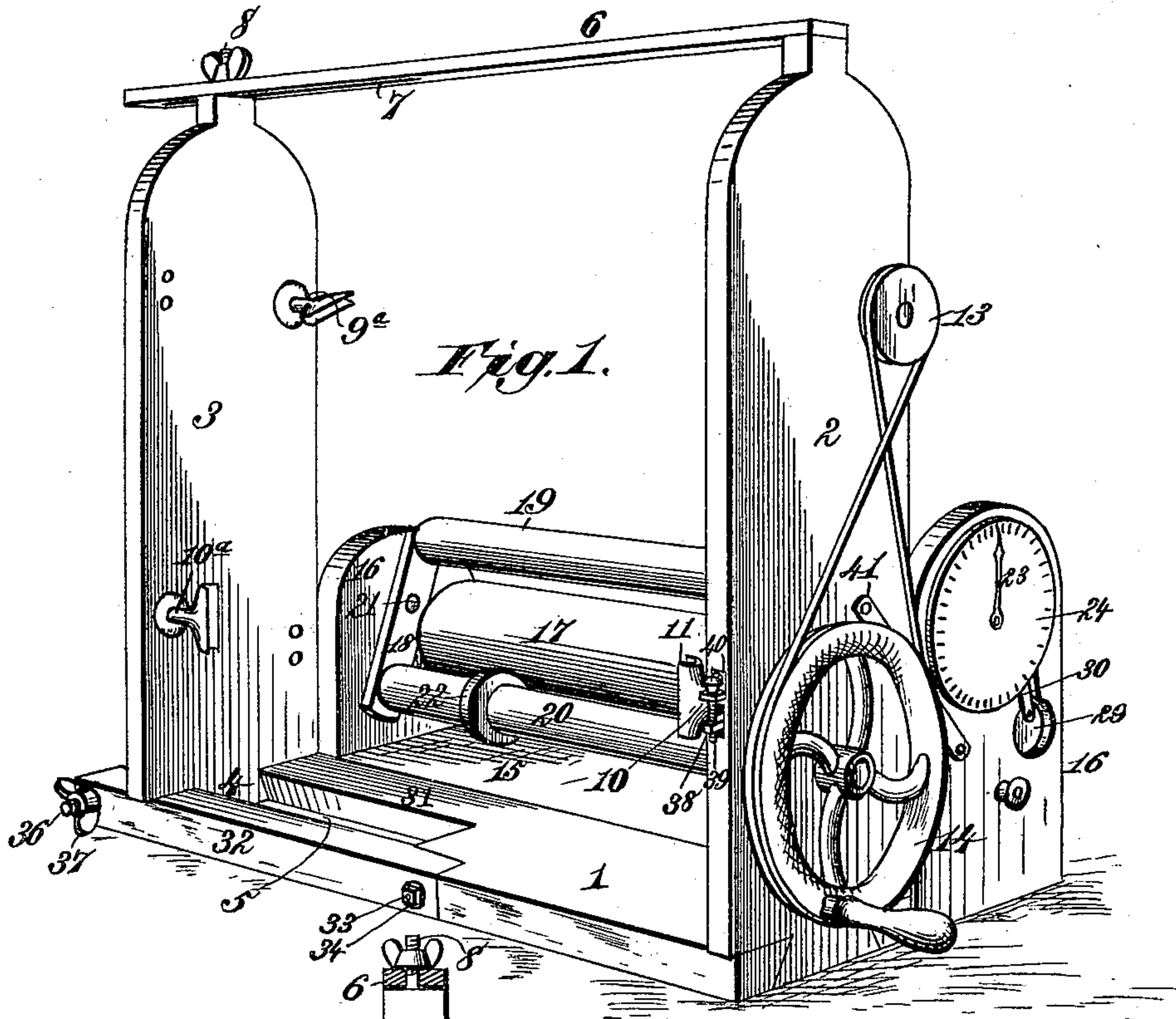
2 Sheets—Sheet 1.

E. M. BLISS.

CLOTH MEASURING MACHINE.

No. 370,175.

Patented Sept. 20, 1887.



Witnesses.

Robert Everett.

J. A. Rutherford

Inventor.

Edward M. Bliss.

By James L. Norris.
Atty.

(No Model.)

2 Sheets—Sheet 2.

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Fig. 3.

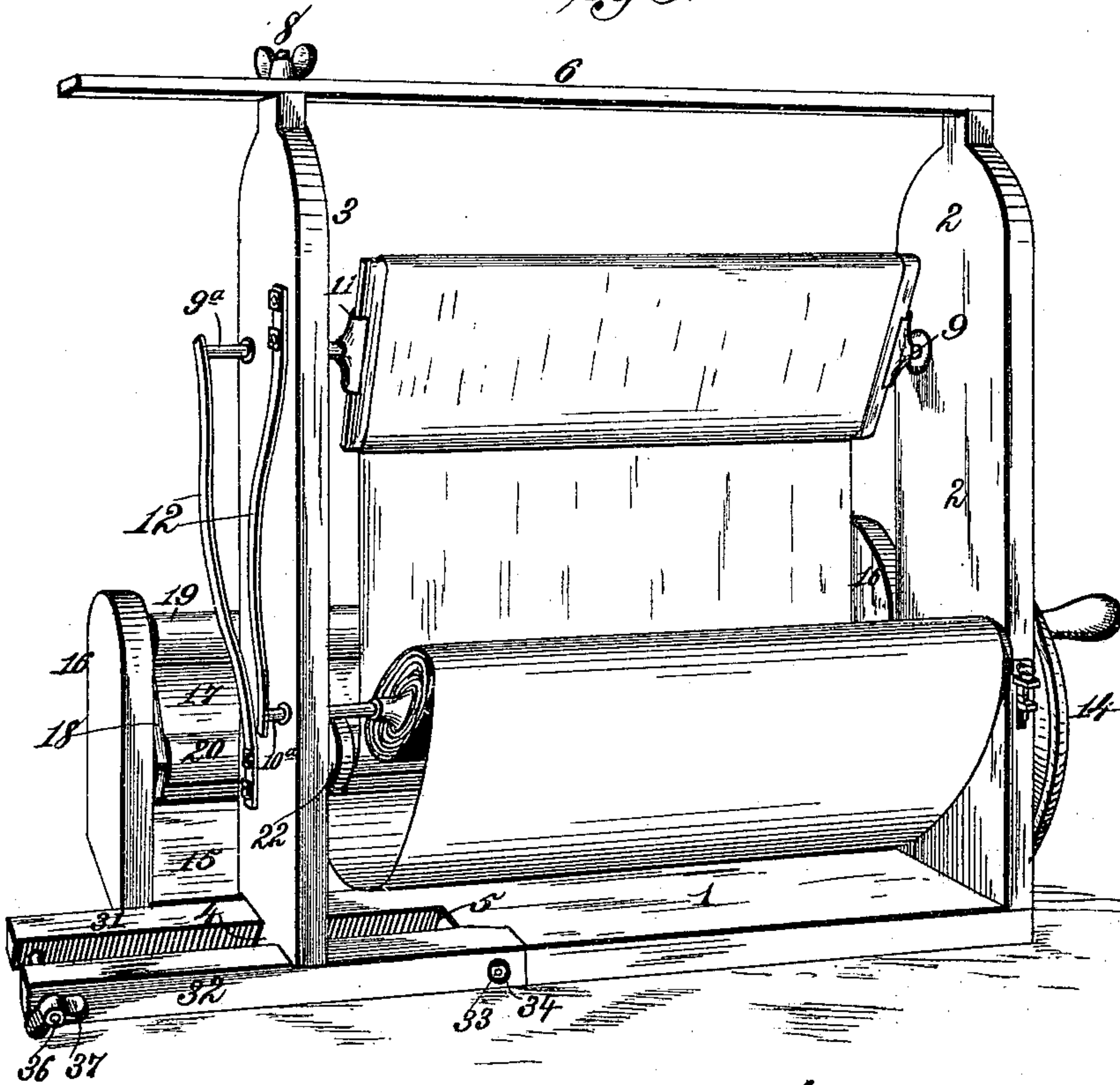


Fig. 4.

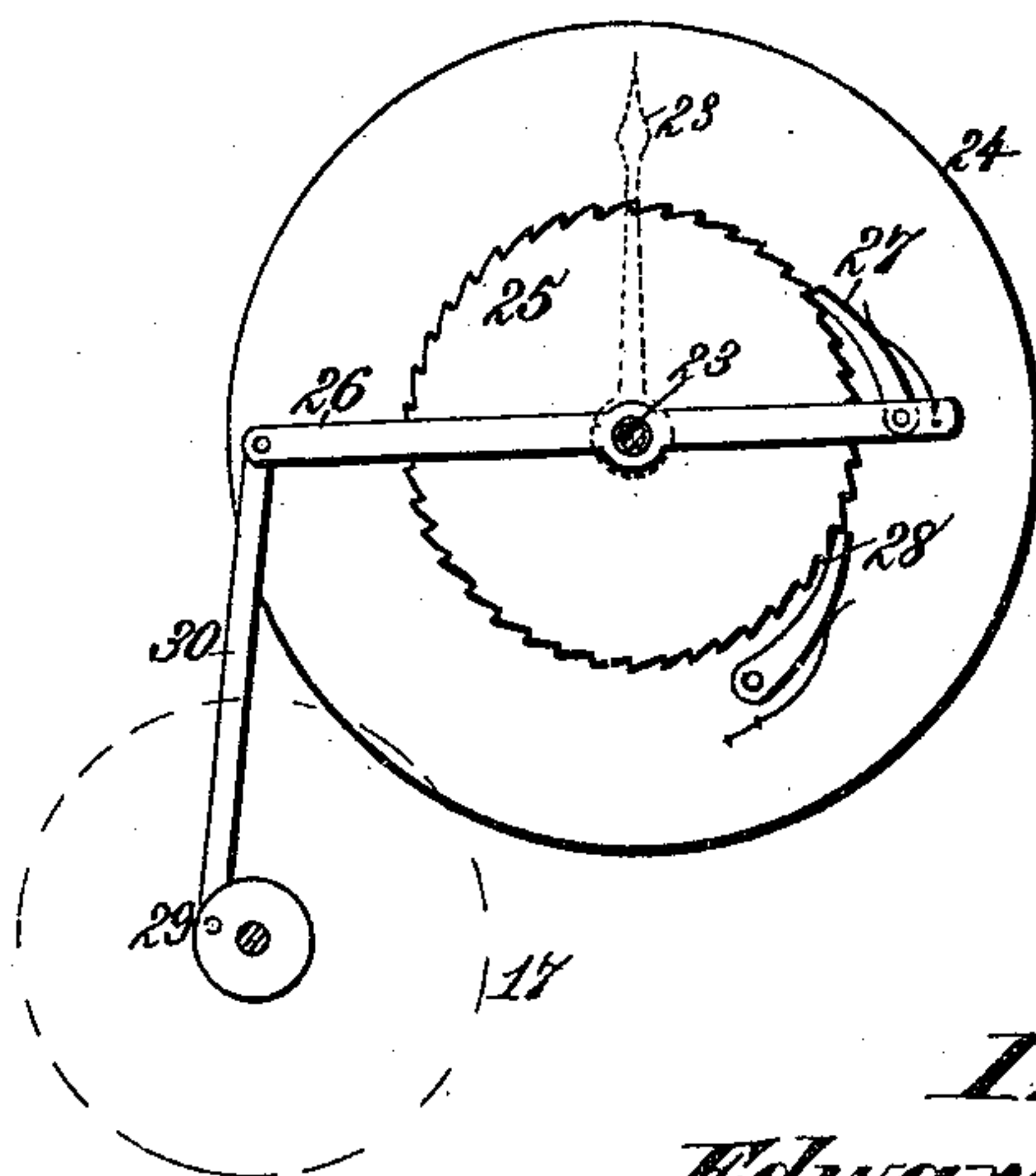
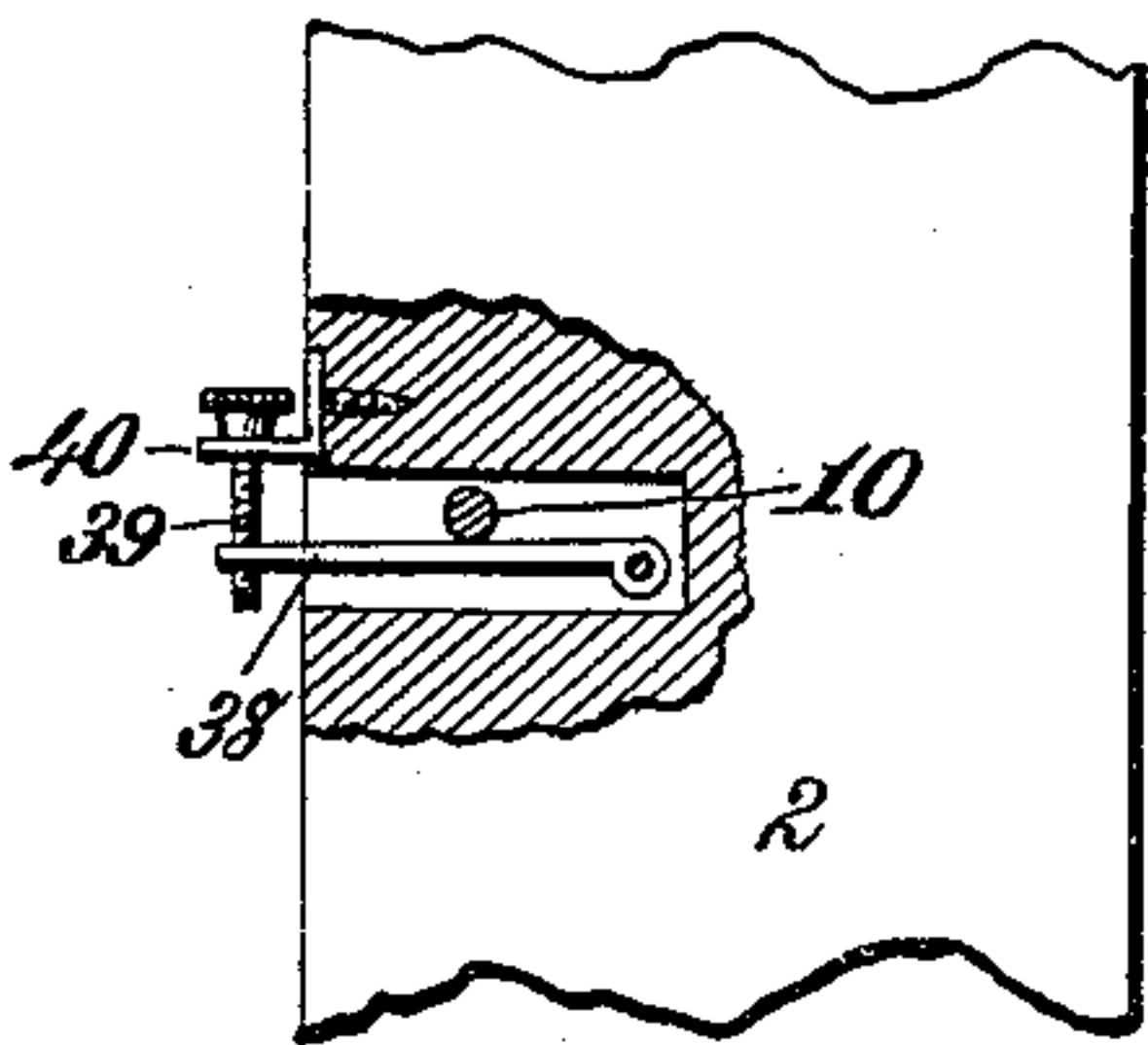


Fig. 5.



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UNITED STATES PATENT OFFICE.

EDWARD M. BLISS, OF SPENCER, MASSACHUSETTS.

CLOTH-MEASURING MACHINE.

SPECIFICATION forming part of Letters Patent No. 370,175, dated September 20, 1887.

Application filed June 2, 1887. Serial No. 240,079. (No model.)

To all whom it may concern:

Be it known that I, EDWARD M. BLISS, a citizen of the United States, residing at Spencer, in the county of Worcester and State of Massachusetts, have invented new and useful Improvements in Cloth-Measuring Machines, of which the following is a specification.

My invention relates to machines for measuring textile fabrics of any width, and the purpose thereof is to provide simple and accurate means for ascertaining the quantity of cloth in a web, and to adapt such mechanism to the purposes of retail and wholesale establishments, to promote the simplicity of construction and render the machine less cumbersome to handle, and to adapt it by a simple arrangement of parts to use with fabrics of varying width.

It is a further purpose of my invention to provide simple means for communicating the motion of the traveling web to a measuring-roller, and for binding or pressing the web thereon with a force sufficient to secure an exact and accurate response of the measuring-register.

The invention consists in the several novel features of construction and new combinations of parts, hereinafter fully set forth, and definitely pointed out in the claims.

In the accompanying drawings, Figure 1 is a perspective view of the machine in which my invention is embodied. Fig. 2 is a vertical section of the same. Fig. 3 is a perspective showing the machine in operation. Fig. 4 is a detail elevation and partial section showing the devices operating the measuring-index. Fig. 5 is a detail sectional view.

In the said drawings, the reference-numeral 1 denotes the base or bed plate of the machine from which rise standards 2 and 3, the former being rigid and the latter adjustable, its lower end having a tongue, 4, fitting in a dovetailed groove, 5, in the base. At their tops the standards are connected by a brace, 6, having a slot, 7, through which a set-screw, 8, passes into the end of the standard 3. Upon these standards are mounted the spindles for the cloth-reels. These consist of two spindles, 9 and 10, mounted in the standard 2 and carrying the forks 11, which hold the ends of the reel, and two similarly-located spindles, 9^a and 10^a, on the stand-

ard 3, said spindles being elongated and capable of movement in the direction of their length. Against the ends of these spindles bear springs 12, mounted on the outside of the standards. The spindle 9 is driven by a pulley, 13, belted to a driving-wheel, 14, journaled on the standard 2.

The measuring mechanism is supported upon a separate frame-work composed of a bed-plate, 15, with end standards, 16. Upon said standards is journaled a measuring-roll, 17, of suitable diameter, and covered, if desired, with felt or other adhesive fabric or material. Fulcrumed on the standards 16 are lever-plates 18, having a friction-roll, 19, journaled upon their shorter arms, and a guide and draft roll, 20, journaled upon their longer arms. The fulcrum-bolts 21 are so located that the distance therefrom to the axis of the draft-roll 20 is greater than from the same point to the axis of the friction-roll 19. The said fulcrum-bolts are so situated, also, that an upward strain upon the draft-roll 20 will throw the friction-roll down upon the measuring-roll. A movable annulus, 22, upon the latter may be adjusted to any width of cloth.

Upon the end of a shaft, 23, arranged in the top of the standards 16, is mounted an index-finger, 23, turning upon or over a graduated disk, 24, on the outer face of said standard. Upon the same shaft, also, is mounted a ratchet, 25, and upon the same shaft is loosely fulcrumed a lever, 26, carrying a pawl, 27, which engages said ratchet, a holding-pawl, 28, preventing any backlash of the parts.

Upon the shaft of the measuring-roll 17 is a crank, 29, carrying a pitman, 30, which vibrates the pawl-carrying lever 26, thereby giving motion to the ratchet 25 and index-finger 23.

The dovetailed groove or slot 5 lies between an arm, 31, solid with the base-plate, and an arm, 32, removable therefrom. The latter arm is jointed to the base by a bolt, 33, and nut 34, and a spring, 35, is set in the wood of the base to throw the arm outward. A second bolt, 36, crosses the end of the slot and has a thumb-nut, 37, by which it may be tightened or removed.

Upon the standard 2 is a tension device consisting of a rod, 38, pivoted at one end in a recess in said standard, and having the other

end projecting beyond the edge of the latter. This rod passes beneath and across the spindle 10, and a set-screw, 39, swiveled in a bracket, 40, adjusts its projecting end up or down, thereby causing it to bear with more or less friction against the spindle.

The cloth supporting and winding mechanism is arranged in a frame which is wholly separate from that containing the measuring and indicating devices. In use the parts are placed side by side and coupled together by an arm, 41, pivoted upon the standard 2, and capable of engaging with one of the standards 16 by means of a screw.

This machine is specially intended for use in taking account of stock in dry-goods stores. To operate it, the bolt of cloth is placed upon the spindles 10 and 10^a. The end of the web is carried beneath the measuring-roll 17, thence upward and over the latter, beneath the friction-roll 19, and also under the draft-roll 20. From this point it is carried directly up to the empty board mounted upon the spindles 9 and 9^a. Then by turning the pulley 14, by means of a crank-handle, the cloth is drawn rapidly off the lower spindles and wound upon the board carried by the upper spindles, its passage rotating the measuring-roll, and thereby operating the index-finger 23. The upward draft of the cloth upon the draft-roll 20 presses the friction-roll 19 closely down upon the cloth traveling beneath it over the measuring-roll and secures perfect accuracy of operation.

By making the machine in two separate parts, as described, I greatly promote the ease and convenience of handling the same, as well as the economy of space in storage.

What I claim is—

1. In a cloth-measuring machine, the combination, with a grooved base, of standards, one of which is movable in the groove, spindles journaled in and extending through said standards and provided with forks to receive the boards, and vertically-arranged flat springs secured at one end to the standard, and at their other extremity bearing upon the outer ends of two of said spindles, which are elongated and longitudinally adjustable in the said standard, substantially as described.

2. The combination, with the cloth-winding devices, of measuring mechanism consisting of a measuring-roll of comparatively large diam-

eter, a friction-roll pressing the cloth upon the measuring-roll, and a draft-roll, the former journaled on the short arms and the latter on the long arms, lever-plates fulcrumed near the ends of the measuring-roll, and an index-finger moved by the revolution of the measuring-roll, substantially as described.

3. The combination, with the cloth-winding spindles supported in standards of the machine-frame, of cloth-supporting spindles similarly journaled in one standard, and a tension device consisting of a rod pivoted at one end passing beneath one of said spindles and having its end projecting and engaging a set-screw, whereby said end may be raised and lowered, substantially as described.

4. The combination, with the base-plate having a slot or groove formed of one solid and one removable arm, the latter bolted to the base, of a spring set in the wood and bearing against said arm to throw it outward, substantially as described.

5. The combination, with the base-plate having a slot at one end, of standards at the ends, one rigid and the other tongued into and movable in said slot, the supporting and winding spindles, two of which are adjustable longitudinally, the springs bearing against the ends of said spindles, the driving devices, and the measuring mechanism arranged upon a separate frame coupled to the frame of the cloth supporting and winding devices, substantially as described.

6. The combination, with the base-plate having end standards, of a measuring-roll journaled therein, plates fulcrumed upon said standards, a friction-roll journaled in the short arms of said plates, a draft-roll journaled in the large arms thereof, and having an annular gage adjustable thereon, an index-finger, a ratchet on the shaft of the same, a pawl-carrying lever operating said ratchet, and a pitman connecting said lever with a crank on the shaft of the measuring-roll, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

EDWARD M. BLISS.

Witnesses:

ALBERT W. CURTIS,
EMERSON STONE.