(No Model.)

2 Sheets—Sheet 1.

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MEASURING APPARATUS FOR RIBBONS, &c.

No. 594,534. Patented Nov. 30, 1897.

Fig. 1.

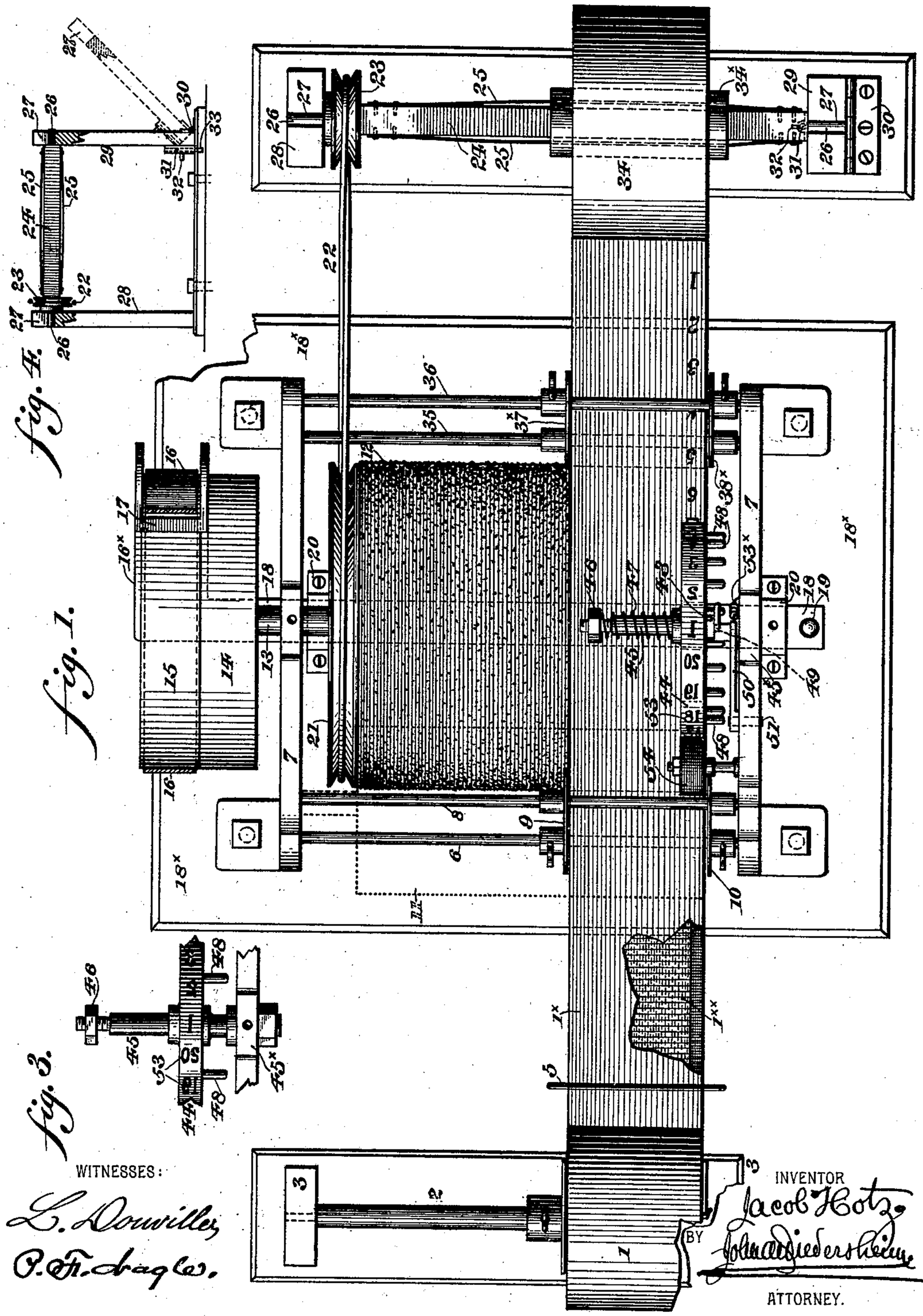

Fig. 2.

Fig. 3.

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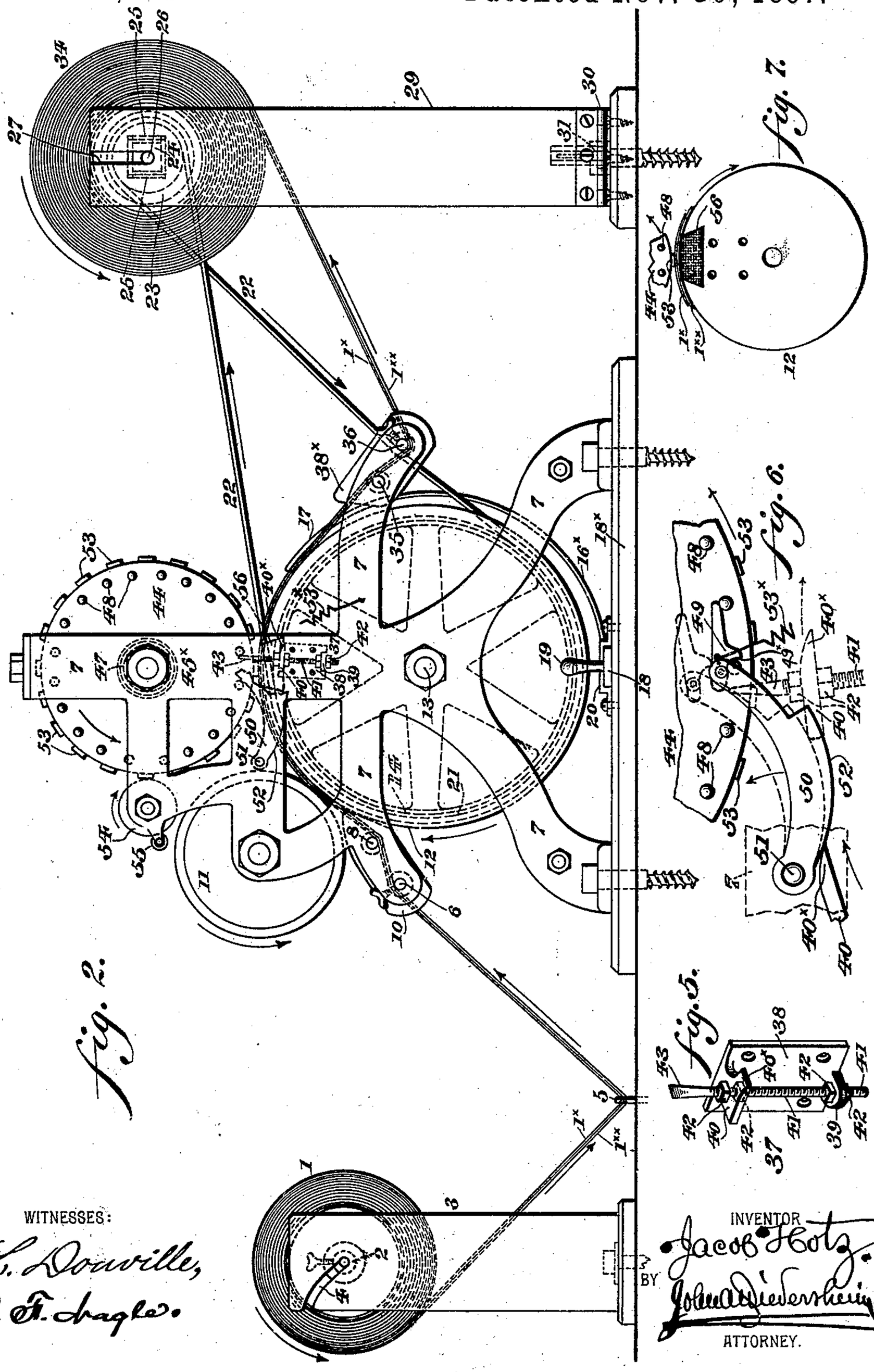

fig. 2.

fig. 6.

fig. 5.

fig. 7.

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MEASURING APPARATUS FOR RIBBONS, &c.

SPECIFICATION forming part of Letters Patent No. 594,534, dated November 30, 1897.

Application filed October 27, 1896. Renewed September 29, 1897. Serial No. 653,520. (No model.)

To all whom it may concern:

Be it known that I, JACOB HOTZ, a citizen of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Improvement in Measuring Apparatus for Ribbons and other Fabrics, which improvement is fully set forth in the following specification and accompanying drawings.

My invention consists of an improved construction of apparatus for measuring ribbons and other fabrics, means being provided for automatically locking, unlocking, and actuating the marking device and for simultaneously feeding the fabric to be measured.

It further consists of novel details of construction, all as will be hereinafter set forth, and specifically pointed out in the claims.

Figure 1 represents a plan view of a measuring apparatus for ribbons and other fabrics embodying my invention. Fig. 2 represents a side elevation of Fig. 1. Fig. 3 represents a plan view of a portion of the marking device, showing means for supporting the same. Fig. 4 represents, on a reduced scale, a front elevation of the supporting devices for the spool on which the fabric is wound after being measured. Fig. 5 represents a perspective view of the apparatus employed for actuating the marking device, the same being shown in detached position. Fig. 6 represents a side elevation, on an enlarged scale, of a portion of the device, showing the mechanism for automatically actuating, locking, and unlocking the marking device. Fig. 7 represents, on a reduced scale, a side elevation of the drum by means of which the fabric is actuated, said drum having a pad or cushioning device thereon upon which the type is adapted to bear in the act of marking the ribbon.

Similar numerals of reference indicate corresponding parts in the several figures.

Referring to the drawings, 1 designates a roll of ribbon or other fabric which is mounted on the shaft 2, which latter has its journals rotatably mounted in the posts or standards 3, the latter having the inclined passage 4, leading to the bearing for said journals.

5 designates a staple or loop which is attached to a suitable fixed point, through which the ribbon $1^{\times\times}$ and the paper strip $1^{\times}$, adjacent or above the same, are adapted to pass, said ribbon and the accompanying strip of paper passing thence over the roll or shaft 6, which is suitably supported on the framework 7, and being conducted thence under the roll or shaft 8, the ribbon being properly guided by means of the plates or guiding devices 9 and 10, which are held in position in any suitable manner.

11 designates a roll which is supported in the present instance above the shafts 6 and 8 and has a thick coating of rubber or similar material upon its exterior periphery, the latter being adapted to bear upon the periphery of the drum 12, which has its outer surface covered with sandpaper or other rough material, as best seen in Fig. 1, whereby the feeding of the fabric to be measured is effected.

13 designates a shaft which is mounted in suitable bearings in the frame 7, said shaft having secured thereto the tight and loose pulleys 14 and 15, which are actuated by the belt 16, the position of said belt being assured with respect to either pulley by means of the belt-shifter $16^{\times}$, the same consisting of a bifurcated arm 17, through which the belt passes, said arm having an extension 18, which is located underneath the drum 12 in the present instance and extends to the outer portion of the machine, said extension being supported upon the bed $18^{\times}$ of the machine and being guided and secured in position by means of the straps 20, said extension having the knob or handle 19 thereupon, by means of which it can be readily actuated, so that the belt can be shifted from one pulley to the other and the apparatus thus started and stopped at will.

21 designates a belt-pulley which is mounted upon the shaft 13, and has in the present instance the belt 22 passing therearound, said belt being crossed so as to pass around and actuate in the proper direction the pulley 23, which is mounted upon the shaft 24. 25 designates longitudinally-extending springs which are attached to said shaft, the latter being preferably square, so that an enlarged yielding square bearing can be formed on said shaft, which latter has the journals 26, which have their bearings in the slots 27 in the posts

or standards 28 and 29. It will of course be understood that the shaft 24 may be hexagonal, octagonal, or other shape in cross-section. The post 28 is in the present instance rigidly attached to its support, while the post 29 is movably mounted thereon by means of the hinge 30, and is further provided with a locking device for positively insuring its remaining locked in upright position when desired, said locking device consisting of the bolt 31, movable in a suitable sleeve and having a handle 32 thereon for actuating said bolt, the latter being adapted to seat in the socket 33 when the post 29 is in upright position.

34 designates a spool or roll which has a hub $34^{\times}$ with a square opening therethrough, said hub being adapted to be slipped upon the shaft 25 and to have its opening less in area than the cross-sectional area of the springs on said shaft, so that the tension of said springs will always serve to hold said hub firmly in position and also the ribbon 34, which is wound thereupon, said ribbon or fabric passing, after being fed between the roll 11 and the drum 12, over the shaft 35 and under the shaft 36 upon the roll 34, the shafts 6, 8, 35, and 36 acting as tension devices, as will be apparent, and the fabric being guided as it passes by the last-mentioned shafts by means of the guides $37^{\times}$ and $38^{\times}$.

37 designates a device which is attached to the side of the drum 12 for the purpose of unlocking and actuating the marking device, said device consisting of the plate 38, which has the lugs 39 and 40 attached thereto, the lug 40 having the nose or tapered portion $40^{\times}$, the function of which will be hereinafter explained.

41 designates a threaded stem which engages threaded openings in the lugs 39 and 40, said stem being held in position by means of the nuts 42 and having one extremity 43 in the present instance slightly tapered or pointed, the same serving as a finger and to actuate the marking device employed.

44 designates the marking device, the same consisting of a disk mounted on the shaft 45, which latter is stationary in the present instance and projects from a suitable support $45^{\times}$, the proper relative position of said disk being always assured by means of the spring 47, one end of said spring abutting against said disk, while its other end is in contact with the nut 46 on a threaded portion of the shaft 45.

48 designates pins projecting from the outer face of the disk 44, said pins being adapted to be engaged by a suitable portion or shoulder of the dog 49, which is attached to the latch 50, the latter being shown broken away in Fig. 2, but being shown on an enlarged scale in Fig. 6, said latch being pivoted to any suitable fixed point 51.

52 designates a rounded or cam-shaped surface on the under side of the latch 50, which is adapted to be engaged by the nose $40^{\times}$ in the manner indicated in Fig. 6, whereby the finger 43 is enabled to contact with the proper pin 48 as the drum 12 rotates and thus actuate the type plate or disk 44 and the indicating-characters 53 on the periphery thereof, the same running in the present instance from "1" to "20," as will be understood from Figs. 1 and 3, and said characters indicating any desired unit of measurement, such as feet, yards, meters, &c. The indicating-characters 53 are inked by any suitable means, as the inking-roller 54, to which ink is applied in any suitable manner, the ink being distributed on said roller by an auxiliary roller 55, the construction of such inking mechanism being common and not requiring any further description in the present instance.

$53^{\times}$ designates a spring which has one end attached to a suitable fixed point, while its other end is secured to any suitable portion of the latch 50 or the dog 49, which latter, it will be understood, may be secured to the latch by riveting or other suitable means, such that it can be replaced when worn out or when desired.

56 designates a yielding cushion or pad which is secured in the drum 12 by a dovetailed joint or other similar manner, said pad being located in the position relative to the marking-characters 53, substantially as indicated in Fig. 7, whereby one of the characters 53 will always contact with the strip of paper adjacent the ribbon when the pad 56 is directly thereunder, as indicated in said Fig. 7.

The operation is as follows: Power having been applied to the shaft 24 and the ribbon $1^{\times\times}$, and the paper strip $1^{\times}$ adjacent the same having been fed over the tension devices and over the drum 12 and having their ends suitably secured to the hub $34^{\times}$, it will be seen that the ribbon will be unwound from the roll 1 and wound upon the roll 34 as long as the rotation of the shaft 13 continues. Every time that the drum 12 makes a complete revolution the finger 43 will contact with the pin 48, as indicated in Fig. 2, and the marking-disk 44 will be given rotation sufficient to move the indicating-character 53 from the position seen in Fig. 2, in which it is shown as in the act of marking the paper $1^{\times}$, to a point in advance of said position, thereby bringing the adjacent pin in the path of the finger 43, ready to be actuated by the latter after the drum has made another complete revolution. The type and pins are so located that the contact of the finger 43 with a pin moves the disk so that the type comes in contact with the ribbon, and the finger does not leave the pin until the type is removed from contact with the ribbon. The marking-disk 44 is positively locked in position by means of the engagement of the shoulder $49^{\times}$ with the proper pin 48, the tension of the spring $53^{\times}$ positively insuring such engagement under all conditions. The disengagement of the dog 49 and the contacting pin 48 is effected

by the contact of the nose 40× with the curved or cam-shaped portion 52 of the latch 50. The nose 40×, as it rotates in unison with the drum 12, first lifts the latch 50 and the dog 49 out of engagement with the pin 48, while the finger 43 will be in position to contact with the pin 48, which was previously locked, the parts being now in the position seen in dotted lines in Fig. 6, it being apparent that a further revolution of the drum 12 will cause the finger 43 to contact with the pin in the path thereof, which it is shown in the act of doing in Fig. 2, and thus actuate the disk 44 to the desired degree. The roll 11 presses the fabric into contact with the roughened surface of the drum 12, and through the medium of the tension devices 6, 8, 35, and 36 and the rotation of the shaft 24 the fabric will always be under the proper tension and positively advanced and marked, and the length thereof which is eventually wound upon the roll 34 will be indicated in every instance.

The apparatus can be employed for different widths of fabrics by adjusting the position of the guides 9 and 37×, and it will be apparent that when a sufficient quantity has been wound upon the roll 34 it can be cut and said roll readily removed by rocking the post 29 into the position seen in dotted lines in Fig. 4, after which another hub or spool 34× can be slipped into position upon the shaft 24.

It will of course be evident that various changes may be made by those skilled in the art which will come within the scope of my invention, and I do not, therefore, desire to be limited in every instance to the exact constructions I have herein shown and described.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. An apparatus for the purpose described having rotatable shafts, a drum mounted on one of said shafts, a rotatable marking device mounted on the other shaft adjacent to said drum, mechanism carried by said drum for automatically operating the latter at intermittent periods, a locking mechanism for said marking device self-supported on the frame of the apparatus, and releasing mechanism carried by said drum for said locking mechanism.

2. In an apparatus of the character described, a rotatable drum having a roughened periphery, tension devices adjacent thereto, a marking device mounted adjacent said drum, pins projecting from said marking device, a latch suitably fulcrumed and having a dog thereon adapted to engage and lock said pins, a finger mounted on said drum and adapted to engage said pins after the latter are unlocked, said finger having a nose located adjacent thereto adapted to actuate said latch at the proper intervals.

3. In an apparatus of the character described, a marking-disk suitably supported and having characters on the periphery thereof indicative of distance, pins projecting from the side of said disk, means for holding the latter in proper position, means for inking said marking-disk, a dog adapted to engage said pins and lock said marking-disk, a latch suitably fulcrumed to which said dog is attached, a feeding-drum located adjacent said marking-disk, a finger and a nose attached to said drum, said nose being adapted to unlock a pin of said marking-disk, and said finger being adapted to rotate the latter.

4. In an apparatus of the character described, a feeding-drum having a roughened periphery, a marking-disk above said drum having indicating characters on its periphery, pins projecting from the side of said disk, a plate detachably secured to the side of said drum, a finger adjustable in ears on said plate and adapted to engage said pins so as to impart intermittent rotary motion to said disk, and a pad on said drum adapted to be adjacent to a marking character on said disk at each complete revolution of said drum.

5. In an apparatus of the character described, a feeding-drum having a roughened periphery, suitable tension devices adjacent thereto, a marking-disk located in proximity to said drum, pins on said marking-disk, a dog 49 having a shoulder 49× adapted to engage one of said pins, and a latch pivotally supported to which said dog is attached, the under face of said latch being curved or cam-shaped, in combination with a plate attached to said drum and having a nose and a finger mounted thereon, said nose being adapted to engage said latch, and thus unlock the disk and said finger being adapted to actuate said disk, and means for holding said latch in position.

6. In an apparatus of the character described, a frame, a feeding device including a drum, a marking-disk having pins on its side, a plate adapted to be secured to the side of said drum and provided with the threaded ears 39 and 40, a finger held in said ears, and adapted to contact with the said pins, a latch pivoted to said frame and carrying a spring-pressed pawl normally engaging one of said pins, said latch having a shoulder thereon adapted to be engaged by one of said ears so as to remove said pawl from said pins.

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