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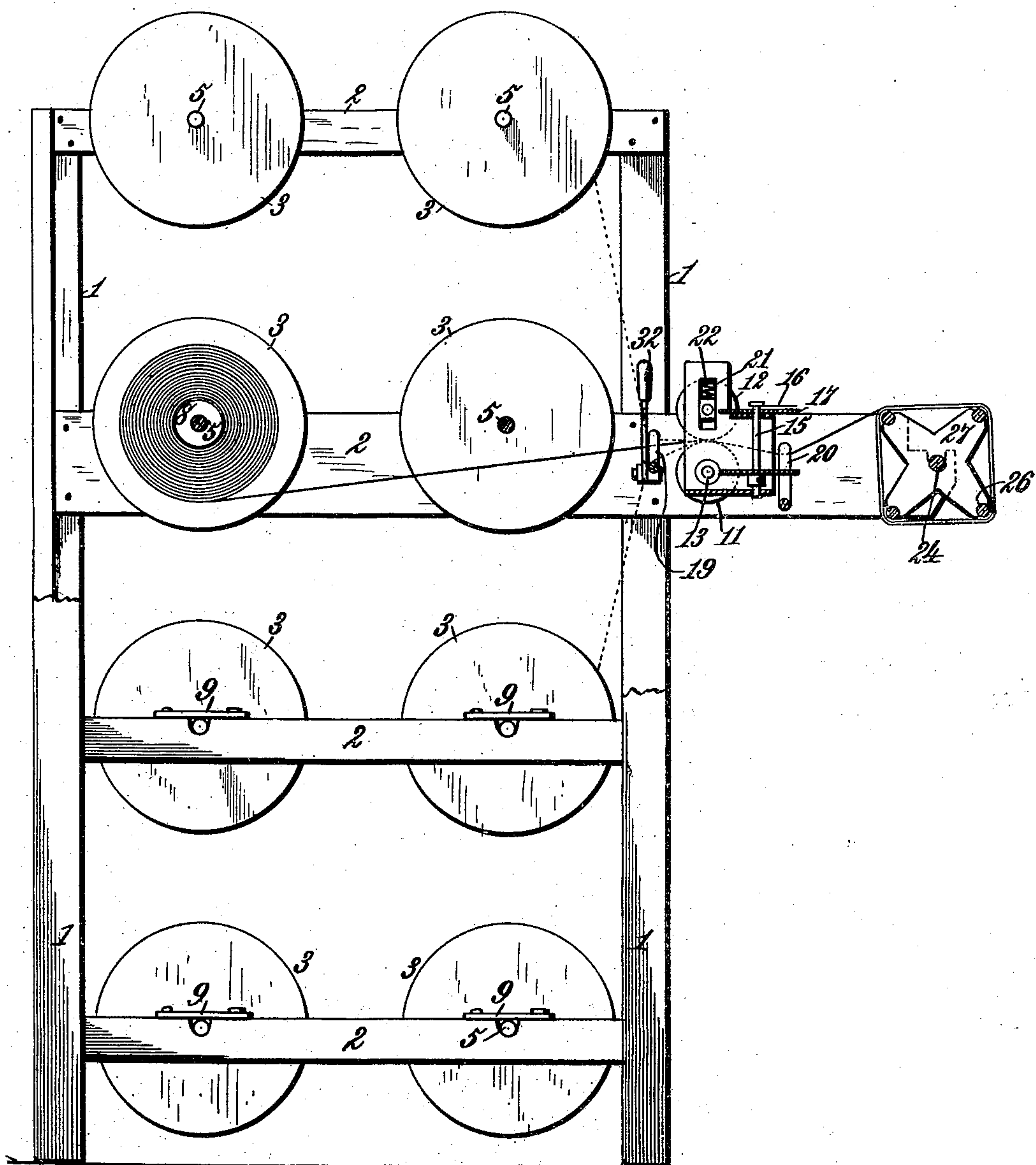
2 Sheets—Sheet 1.

C. E. MATHERS.  
ROPE MEASURING MACHINE.

No. 529,285.

Patented Nov. 13, 1894.

*Fig. 1.*



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*Inventor.*  
*Chester E. Mathens.*  
*By James L. Norris.*  
*Att'y*

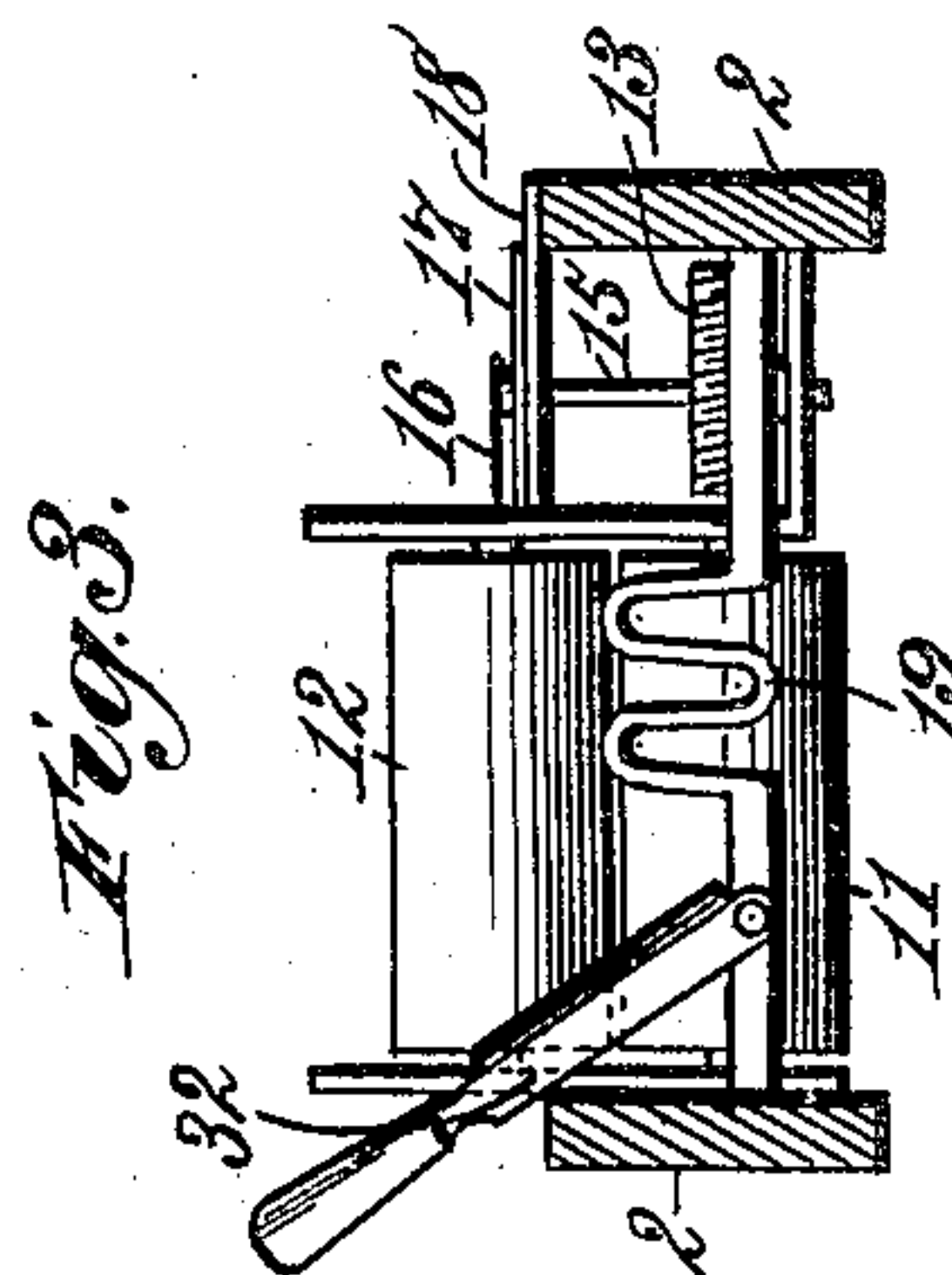
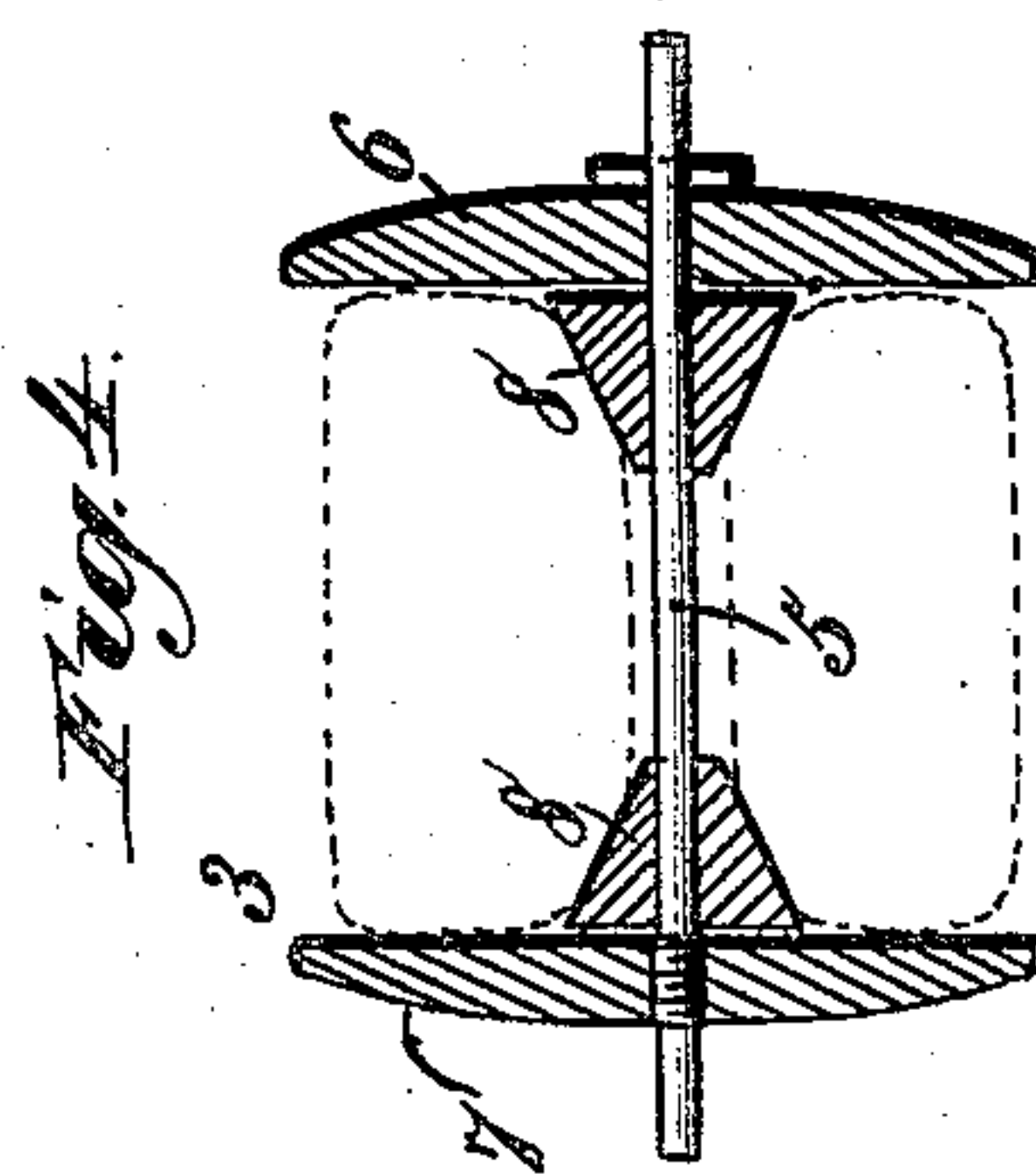
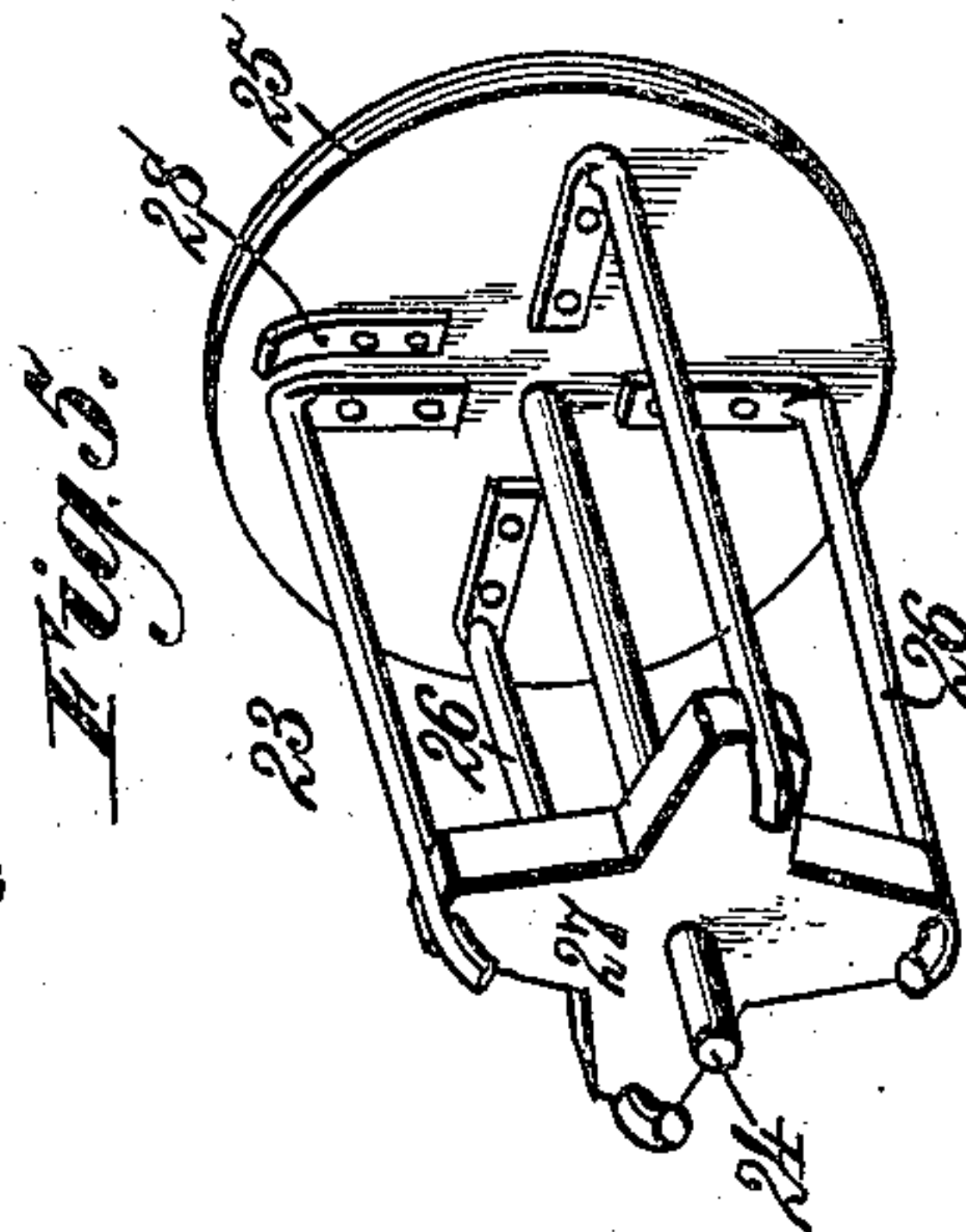
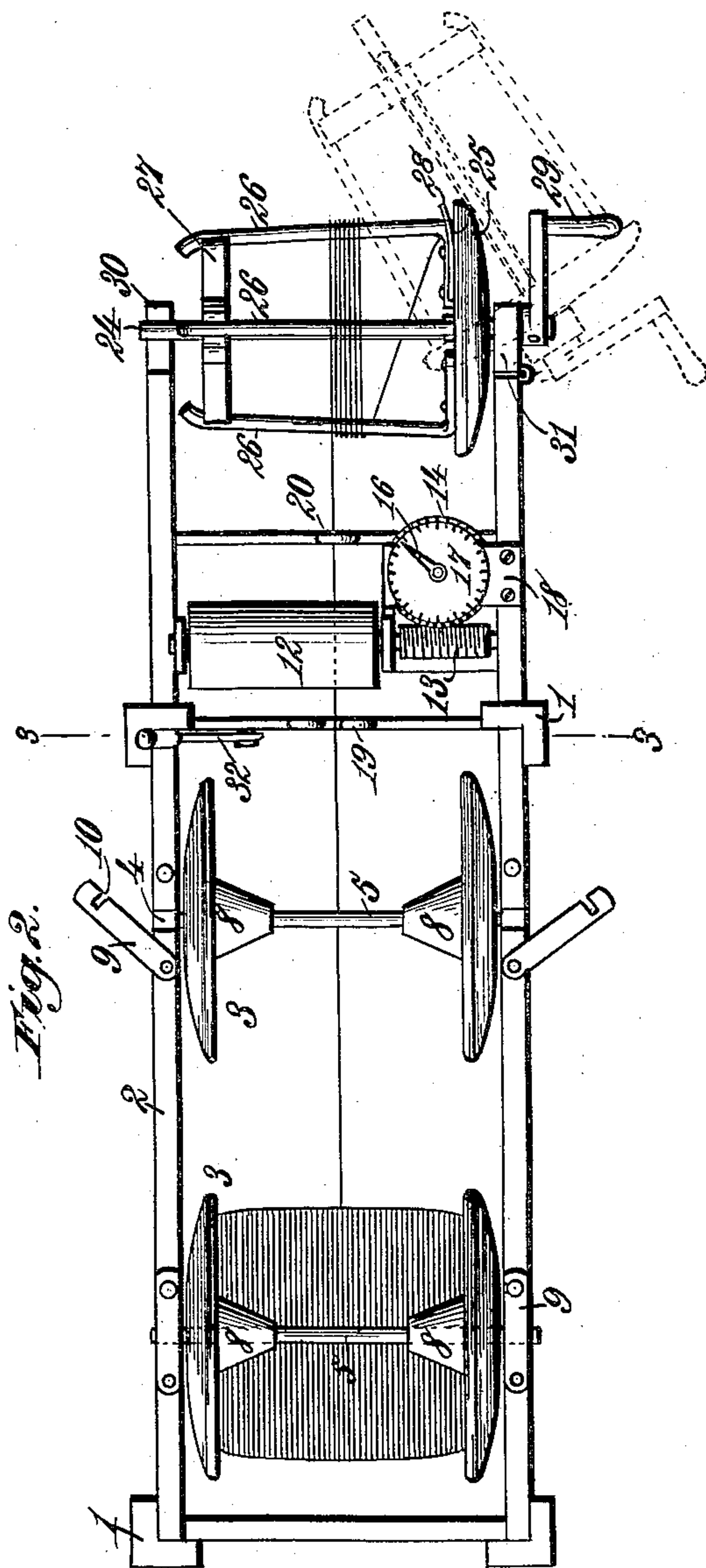
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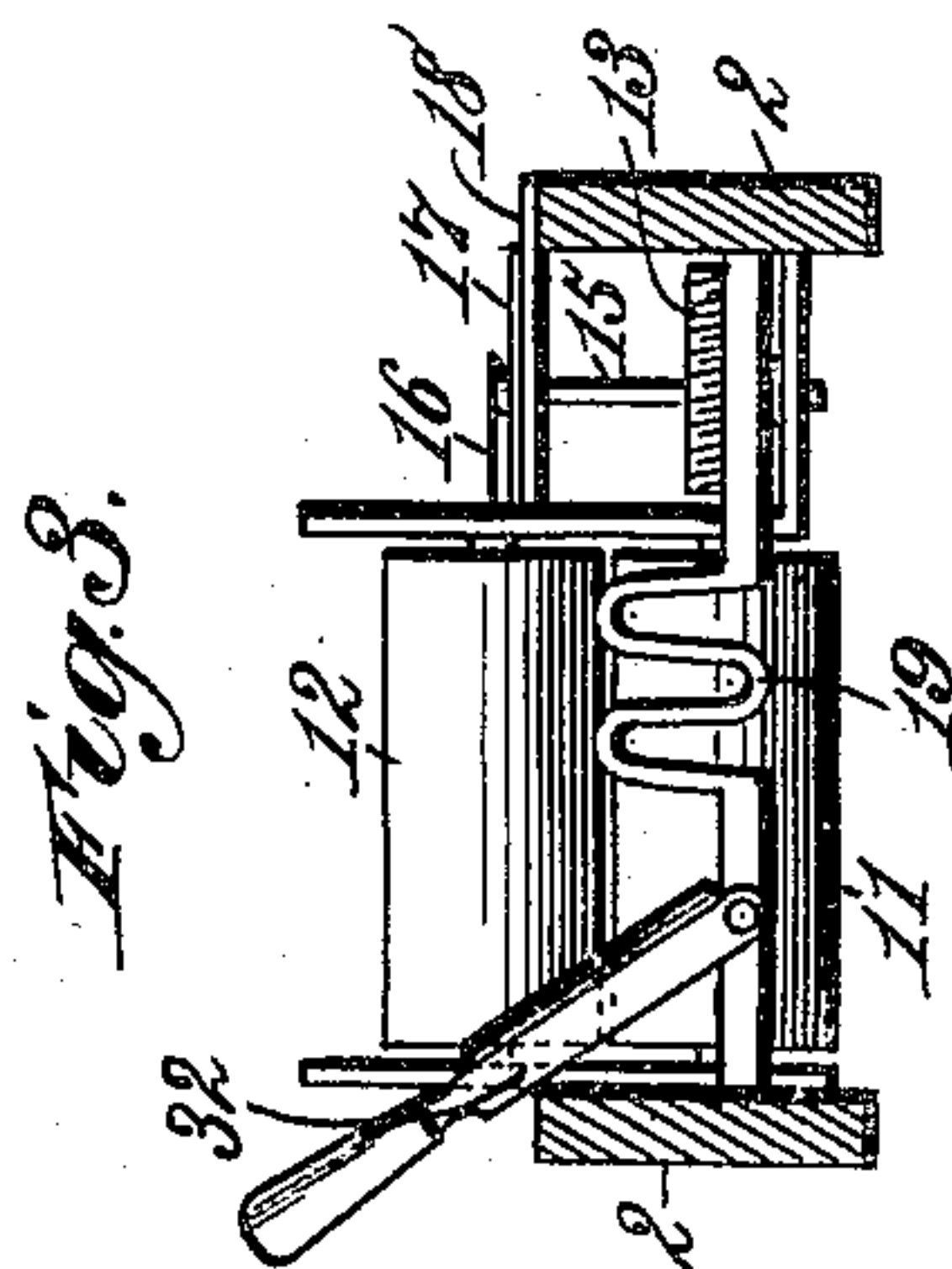
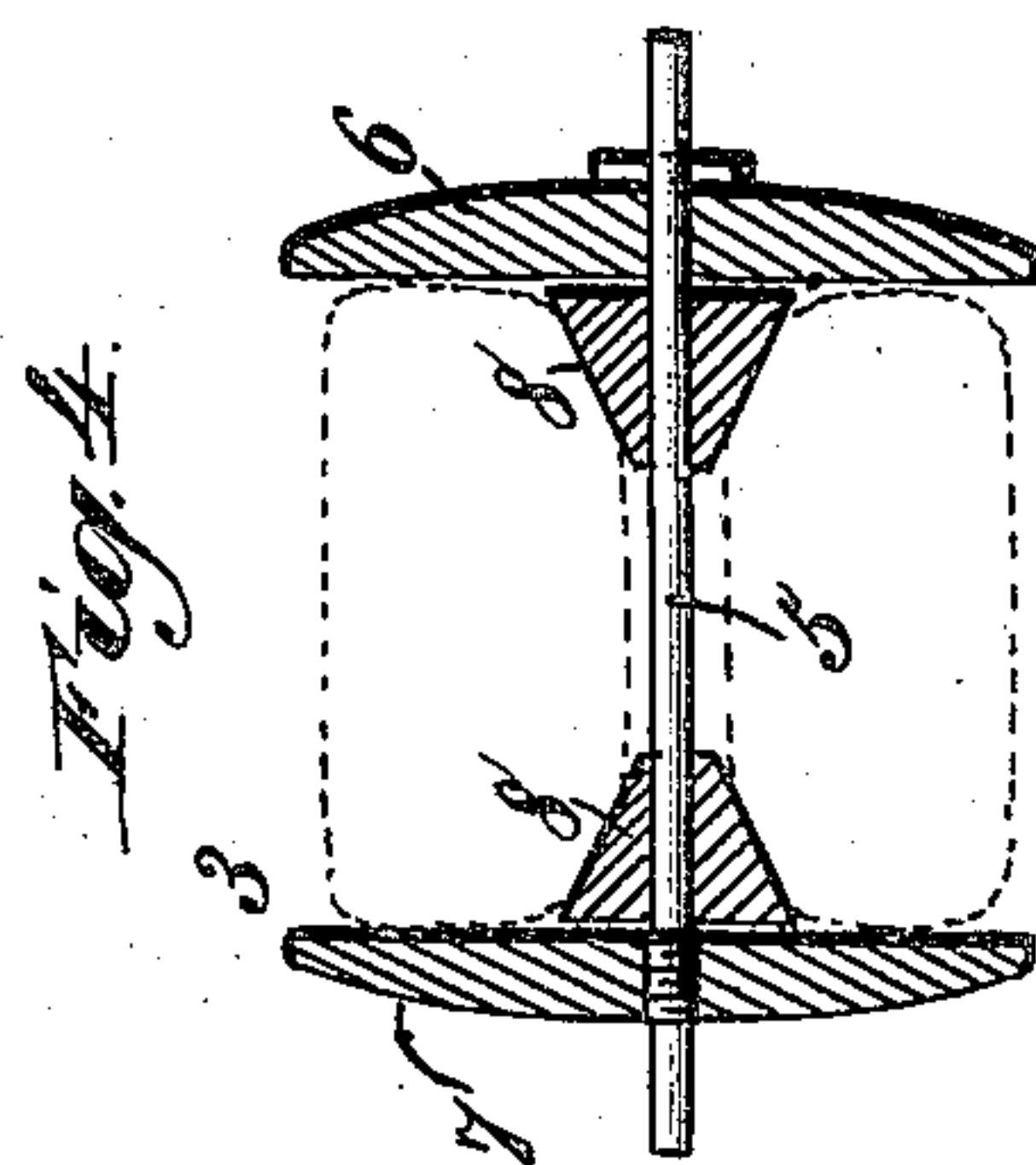
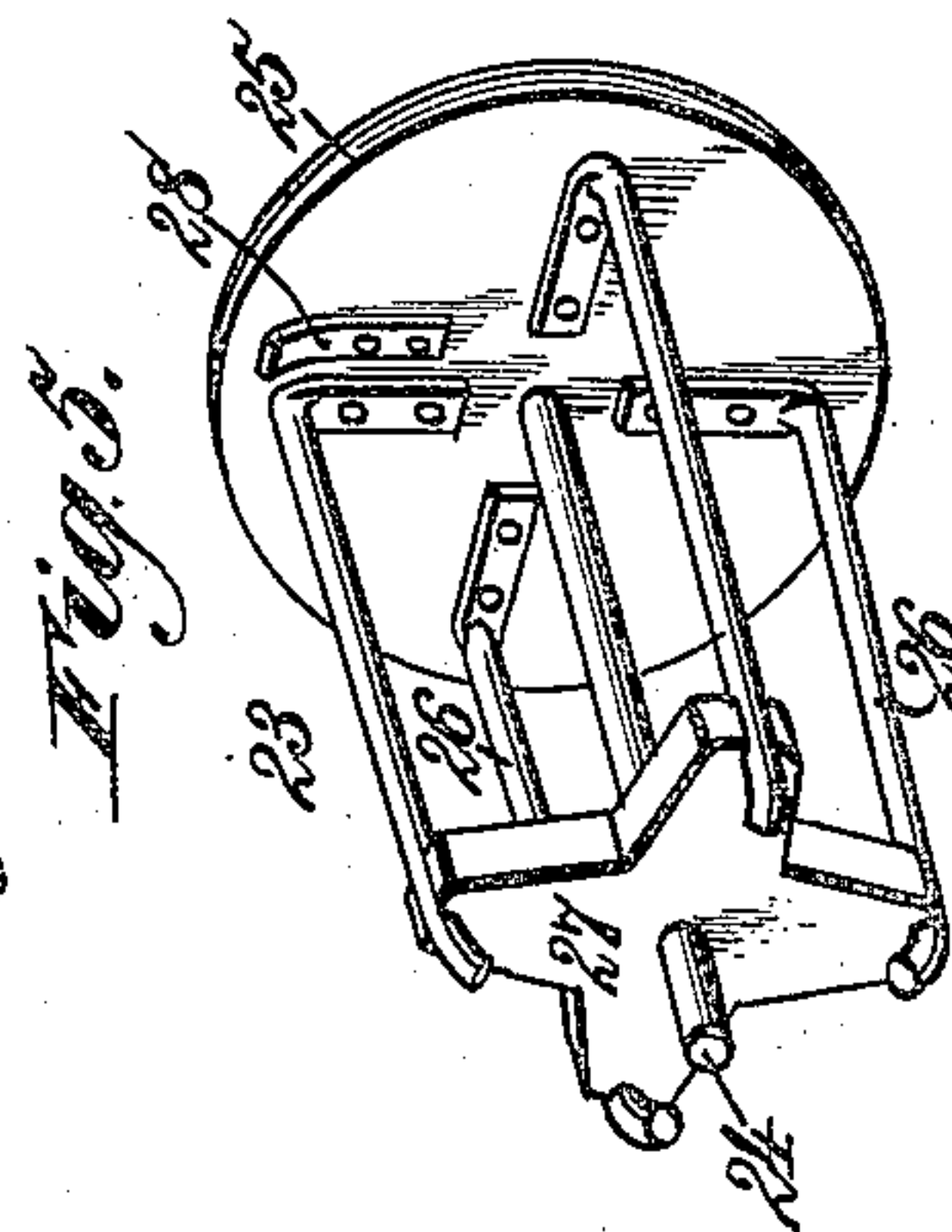
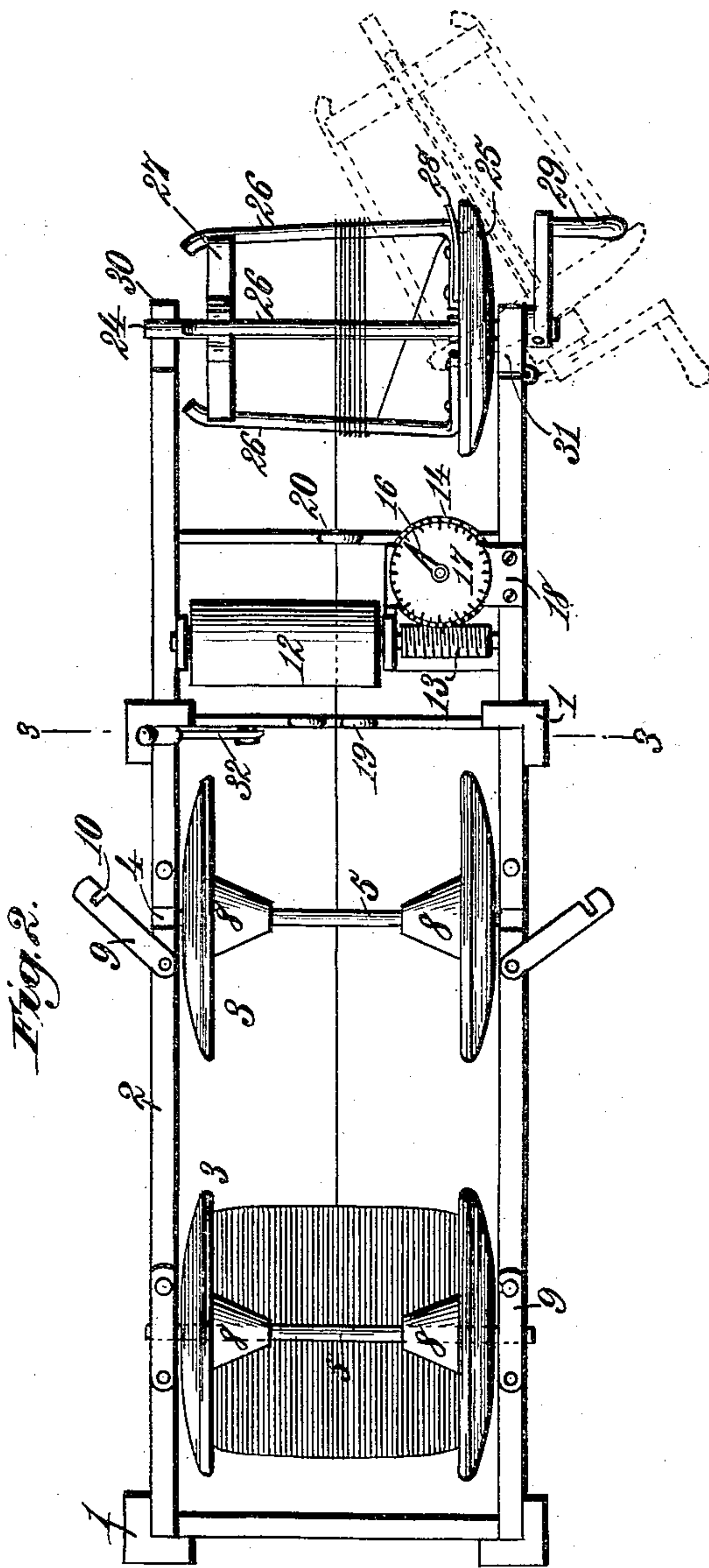
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# UNITED STATES PATENT OFFICE.

CHESTER E. MATHERS, OF YORK STATION, ALABAMA.

## ROPE-MEASURING MACHINE.

SPECIFICATION forming part of Letters Patent No. 529,285, dated November 13, 1894.

Application filed May 24, 1894. Serial No. 512,330. (No model.)

*To all whom it may concern:*

Be it known that I, CHESTER E. MATHERS, a citizen of the United States, residing at York Station, in the county of Sumter and State of Alabama, have invented new and useful Improvements in Rope-Measuring Machines, of which the following is a specification.

This invention relates to an apparatus for unreeling, spooling and measuring rope, and has for its object to provide a compact and convenient machine for use in measuring off rope or cordage in retail stores or in factories where rope and cordage is spooled in definite lengths for the trade.

My invention consists in a rope measuring and spooling machine having the features of construction and novel combinations of devices as hereinafter described and claimed.

In the annexed drawings illustrating the invention—Figure 1 is a partly sectional side elevation of my improved rope measuring and spooling machine. Fig. 2 is a plan of the same. Fig. 3 is a vertical transverse sectional view on the line 3—3 of Fig. 2. Fig. 4 is a longitudinal section of one of the spools. Fig. 5 is a perspective of the spooler that has a hinged connection with one end of the machine frame.

The frame of the machine may be substantially rectangular, constructed of either wood or metal, and comprises the posts 1 connected by longitudinally arranged bars 2 and by suitable cross bars or braces.

The machine frame may be extended to such height as to conveniently accommodate several superposed tiers of horizontally arranged spools 3 that are detachably journaled in notches or recessed bearings 4 provided in the longitudinal bars 2 on opposite sides of the frame. Although I have shown in the drawings only four tiers of two spools each, it is obvious that the dimensions of the machine may be increased or diminished in any required direction to best adapt it to the requirements of business and the varieties of rope and cordage in stock.

Each spool 3 consists of a shaft 5 having one fixed head 6 and a removable head 7 having a screw-threaded engagement with screw threads formed on the spool shaft or axle. On the spool shaft 5, between the heads 6 and

7, are two reversely placed cones 8 the tapered portions of which are adapted to enter partly into the opening through the center of the coil or ball of rope or cord placed on the spool. On tightening up the movable spool head 7 the cones 8 are forced or clamped into the ends of the rope or cord ball and thus secure it on the spool shaft, but in such manner that the heads 6 and 7 will not directly clamp the ball of rope and prevent it from unreeling freely, there being a slight space on each side between the coil or ball and the heads of the spool. The ends or journals of each spool shaft 5 are placed in the bearings 4, and may be detachably held therein by pivoted plates or bearing-covers 9, each of which is pivoted at one end to a bar 2 and provided at its other end with a slot 10 for engaging a stop pin on the bearing bar.

At one end of the machine frame is a measuring device comprising two superposed transversely arranged rollers 11 and 12, the journals of which are mounted in suitable bearings that may be supported between the forwardly projecting ends of two of the longitudinally arranged bars 2 forming part of the machine frame. The shaft of the lower roller 11 carries on one end a worm gear 13 meshing with a worm wheel 14 secured to the lower end of a vertical shaft 15 that carries on its upper end an index finger or pointer 16 working above the face of a horizontally arranged dial 17 fast to a plate 18 in which the upper end of the pointer shaft 15 is journaled.

The dial 17 may have any suitable number of divisions, say, fifty or one hundred, corresponding with the number of teeth on the worm wheel and adapted to indicate, in feet or other units, the length of rope measured off. The index finger or pointer 16 should be loosely mounted on the shaft 15 in such manner that it can be readily set back to the starting point without moving the shaft or its gearing.

Between the spools and the rollers 11 and 12 is arranged an approximately M-shaped or triple looped guide 19 having guideways both above and below through either of which the rope from a spool may be passed to and between the rollers. In front of the rollers



11 and 12 is arranged a single loop guide 20 under which the rope is passed as it leaves the rollers. The rope or cord that is unreeled from the spools located at a lower level than the measuring device is preferably drawn off from the under side of such spool and is taken over and through the central guideway of the triple looped guide 19, thence between the rollers 11 and 12 and thence under the single looped guide 20 in front of the rollers. From the spools that are located on the same level with or above the measuring device the rope or cord is preferably drawn off from the top and is passed under and through one of the lateral guideways of the triple looped guide 19, thence between the rollers 11 and 12 and thence out under the single looped guide 20, as before. The journals of the upper roller 12 are inserted in vertically slotted bearings 21 and may be held down by springs 22, though ordinarily the weight of the roller 12 bearing on the rope will be sufficient to cause it to exert the required degree of friction on the lower roller 11 for actuating the index finger or pointer of the measuring device.

At the front end of the machine is mounted a spooler 23 comprising a cranked shaft 24 having a head or disk 25 fixed thereon. To one side of this disk or head 25 are secured a number of converging spring rods 26 that connect with the arms of a smaller and approximately star shaped head 27 on the other end of the spooler shaft. The arms of this head 27 are notched or recessed to receive the ends of the rods 26 which gradually taper from the head 25, and tend to converge toward the other end of the spooler that is thus somewhat in the form of a truncated cone.

To the inner side of the head 25 is attached a spring clip 28 adapted to clamp and hold the end of the rope as it is drawn from the measuring device and wound onto the spooler. A cranked handle 29 on the spooler shaft affords means for rotating the spooler. One end of the spooler shaft 24 is detachably journaled in a fixed bearing 30 on the end of the machine frame, while the other end of said shaft, or that nearest the larger head 25, is journaled in a hinged bearing 31, so that when the desired quantity of rope or cord has been measured, spooled or coiled, and cut off, the spooler 23 can be swung around and easily permit drawing off the coil or hank of measured rope or cord from the converging rods 26 of the spooler.

At a suitable point adjacent to the measuring device, preferably on the guide 19, is pivotally mounted a knife blade or cutter 32 by which the rope or cord can be severed after the desired quantity has been measured.

The operation of the machine is so simple and obvious that further detailed description does not seem necessary.

The spools 3 are so constructed and arranged, that the rope in being unreeled can not possibly bind against the spool heads; the guides 19 and 20 on opposite sides of the rollers 11 and 12 insure a direct passage of the rope or cord between the rollers and in a straight line in such manner that the measuring device will be automatically actuated with proper accuracy; and the tapering hinged spooler 23 permits a quick removal of the measured and severed rope or cord.

The machine may be readily made of any desired capacity to accommodate a larger or smaller number of spools according to the extent and variety of business.

What I claim as my invention is—

1. In a rope measuring machine, the combination of a frame, a number of transversely arranged spools detachably journaled in said frame and each comprising a spool shaft having a fixed head and a removable head and a pair of reversely arranged cones placed loosely on the spool shaft adjacent to but separate from the heads, a measuring device, guides mounted on opposite sides of said measuring device, and a spooler hinged to the end of the frame to receive the rope or cord from the measuring device and permit its quick removal when measured and severed, substantially as described.

2. In a rope measuring machine, the combination of a frame, a number of transversely arranged spools detachably journaled in said frame, a measuring device, the triple looped guide between the spools and measuring device, the single looped guide on the other side of the measuring device, and a spooler mounted at one end of the frame and having one end of its shaft detachably journaled in a fixed bearing and its other end journaled in a bearing hinged to the frame, substantially as described.

3. In a rope measuring machine, the combination of a rectangular frame, the superposed tiers of transversely arranged spools detachably journaled in said frame, a measuring device, the looped guides mounted on opposite sides of said measuring device to conduct the rope to and from the same, a cutter adjacent to the measuring device, and a rotary spooler having at one end a bearing hinged to the exit end of the frame and its other end detachably journaled and adapted to be swung around to permit quick removal of the measured and severed rope, substantially as described.

In testimony whereof I have hereunto set my hand and affixed my seal in presence of two subscribing witnesses.

CHESTER E. MATHERS. [L. S.]

Witnesses:

W. T. HEARN,  
S. A. CAMERON.