

No. 819,758.

PATENTED MAY 8, 1906.

E. F. HUG.
ROPE MEASURING AND COMPUTING MACHINE.
APPLICATION FILED APR. 3, 1905.

2 SHEETS—SHEET 1.

Fig. 1.

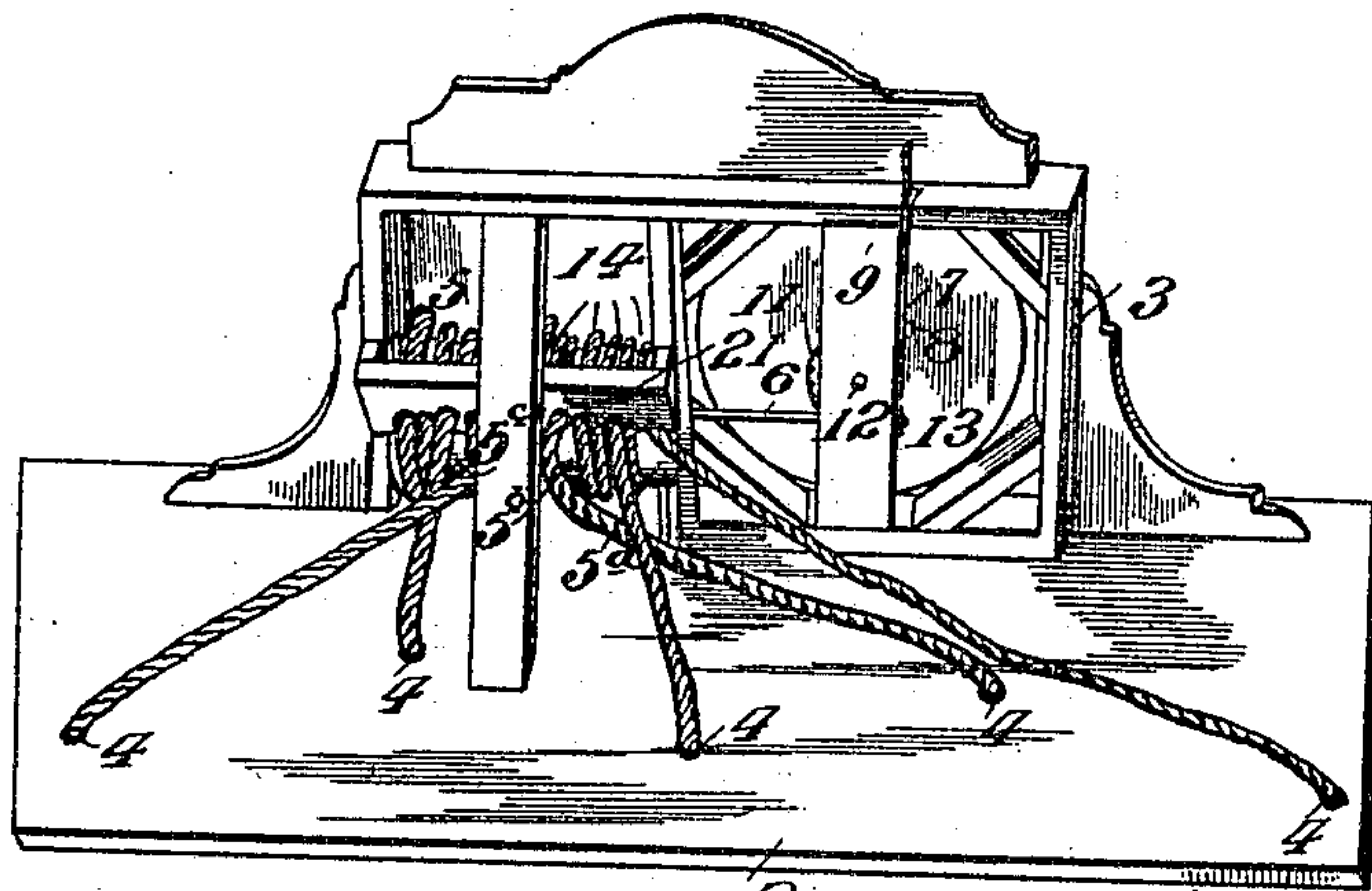
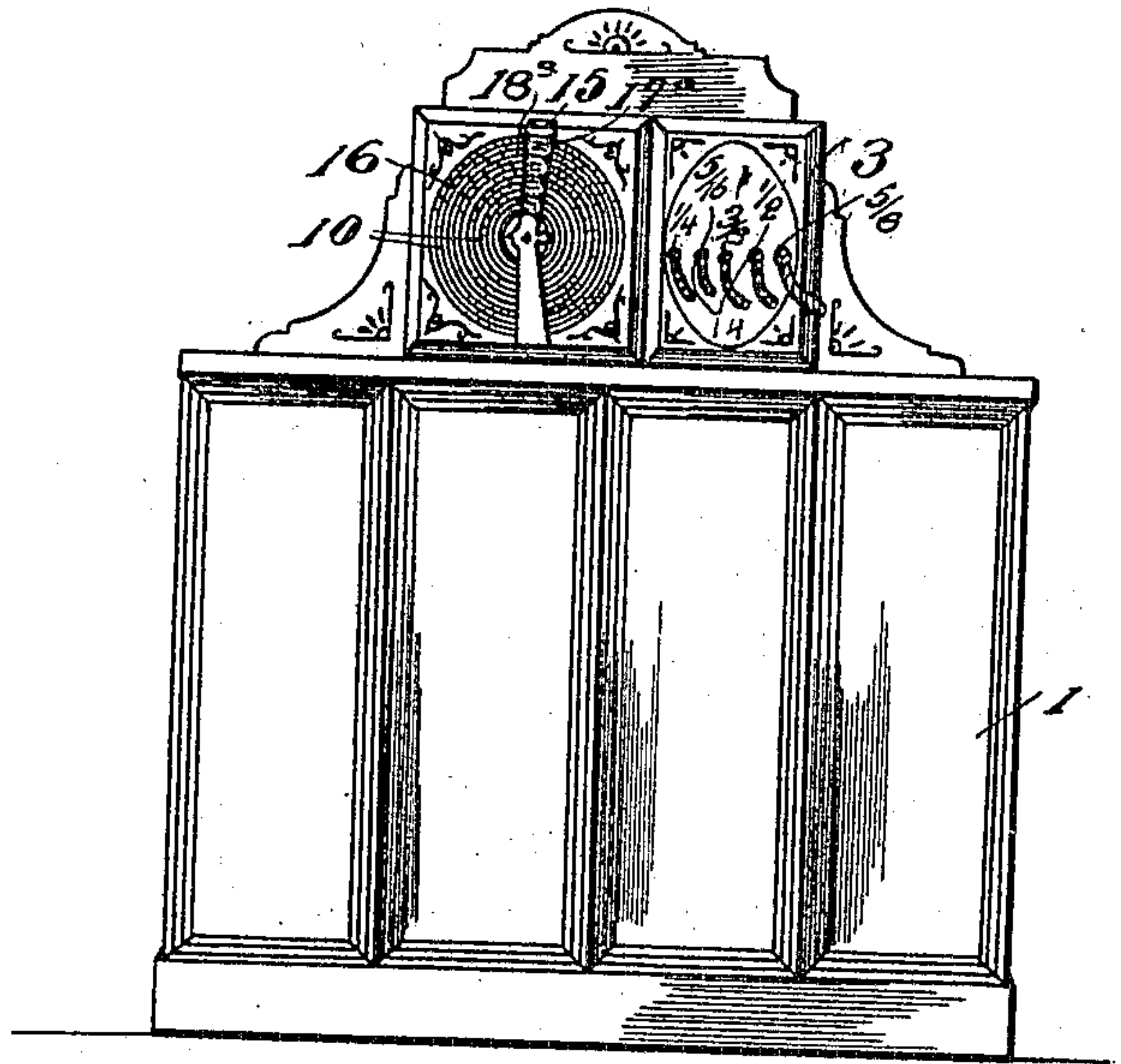


Fig. 2.

Witnesses

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2 SHEETS—SHEET 2.

Fig. 3.

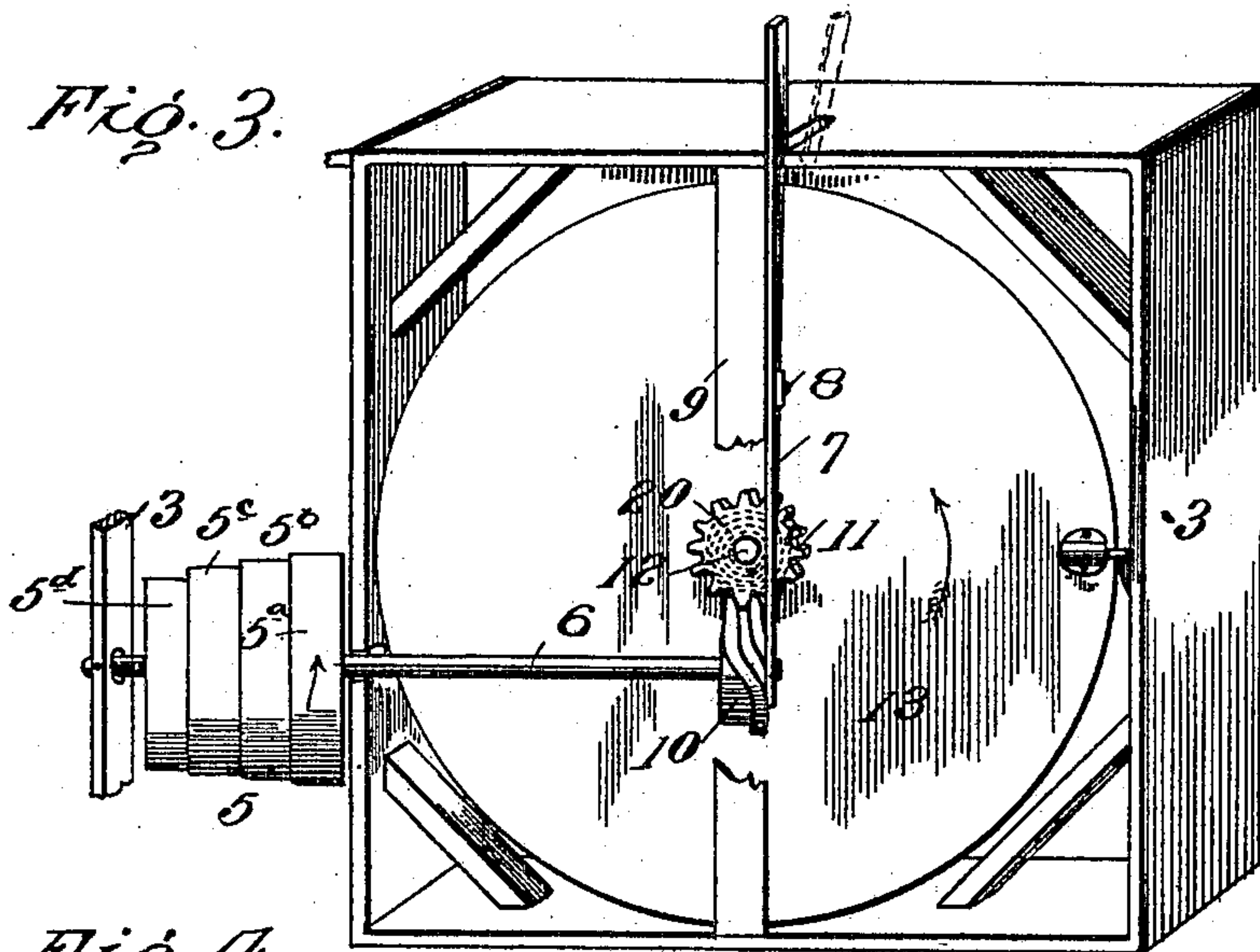
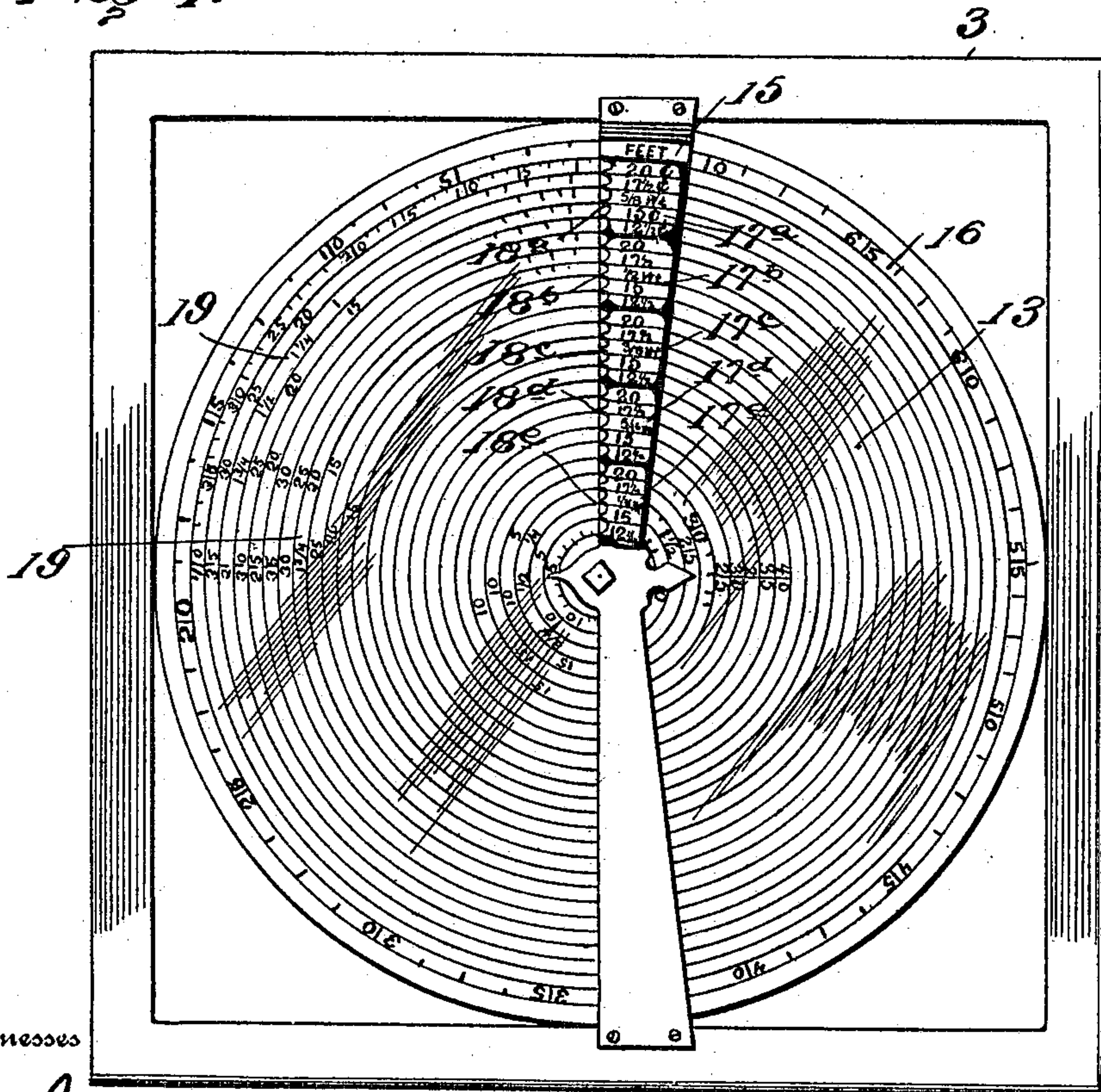


Fig. 4.



Witnesses

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UNITED STATES PATENT OFFICE.

EUGENE F. HUG, OF ELGIN, OREGON.

ROPE MEASURING AND COMPUTING MACHINE.

No. 819,758.

Specification of Letters Patent.

Patented May 8, 1906.

Application filed April 3, 1905. Serial No. 253,508.

To all whom it may concern:

Be it known that I, EUGENE F. HUG, a citizen of the United States, residing at Elgin, in the county of Union and State of Oregon, have invented certain new and useful Improvements in Rope Measuring and Computing Machines, of which the following is a specification.

This invention relates to store apparatus, and embodies a novel form of machine for holding rope, for measuring the same as it is drawn from the holding means, and for indicating, due to the provision of suitable computing mechanism, the value of divisional portions of the rope.

The invention is of a construction adapted to receive rope of different weight, so as to measure and indicate the value of the different grades, the principle of operation and structure in which the invention resides being intended to accomplish the above in a manner which will be apparent hereinafter.

For a full description of the invention and the merits thereof and also to acquire a knowledge of the details of construction of the means for effecting the result reference is to be had to the following description and accompanying drawings, in which—

Figure 1 is a front elevation of a machine embodying the invention. Fig. 2 is a rear elevation showing the upper portion of the machine. Fig. 3 is a view similar to Fig. 2, parts broken away, the parts of the computing mechanism and holder being exposed. Fig. 4 is a view in elevation of a dial which forms a part of the computing mechanism.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

In carrying out the invention a suitable cabinet 1 is preferably utilized to receive the coils or bales of rope in the same condition as when sent out from the factory, the top 2 of the cabinet having a casing 3 thereon, in which the computing mechanism is mounted. The parts 1 and 2 of the device may be made as substantial as desired and of ornamental appearance or otherwise to suit the whim of the user, and the cabinet 1 may be divided into compartments in which the coils or bales of rope of different sizes or weights may be placed. An end of the rope of each bale in the cabinet 1 is passed upwardly through an opening 4 in the top 2 of the cabinet and is passed about a holder. The holder com-

prises a roller 5, which will be described as embodying a plurality of roller elements 5^a 5^b 5^c, &c., said elements being of different diameters. In this instance it is preferred that the roller 5 be of stepped formation to provide the elements 5^a 5^b 5^c, &c., above mentioned. However, this construction may be varied. The roller 5 is keyed or otherwise attached to a shaft 6, one end of said shaft being mounted in a suitable bearing at one side of the casing 3, the other end of the shaft being carried in a bearing at the lower extremity of a lever 7, pivoted at a point between its ends, as shown at 8, to a vertical upright 9 in the casing 3. Keyed to the end portion of the shaft 6, adjacent the lever 7, is a worm-wheel 10, which is normally in engagement with the teeth of a pinion 11. The pinion 11 is carried by a short shaft 12, upon which a dial 13 is mounted, the front portion of the casing 3 being provided with a suitable dial-opening to permit the outer side of the dial 13 to be visible. The casing 3 at one side of the dial 13 is provided with a plurality of openings 14, through which the end portions of the rope of the several coils in the cabinet 1 pass, these end portions having previously been wrapped several times around the roller elements of the roller 5. Adjacent each of the openings 14 are indicating characters which denote the size or weight of the rope, a portion of which extends through the adjacent opening. These characters may be, as shown in the drawings, "1", "1/2", "3/4", "1", "1/2", and "5/8".

Just in front of the outer face of the dial 13 is an indicating-plate 15, at the outer extremity of which is inscribed the word "Feet." Near the peripheral portion of the dial 13 is a scale 16, divided into units of measurement, each unit in this instance being a foot, preferably. Extending from the word "Feet" to a point adjacent the center of the dial 13 the indicating-plate 15 is provided with sets of characters, (designated 17^a, 17^b, 17^c, 17^d, and 17^e.) The sets of characters aforesaid are provided one for each coil of rope which is to be vended through the machine, and the dial 13 is likewise provided with scales arranged in sets for cooperation with the respective sets of characters 17^a, 17^b, 17^c, 17^d, and 17^e. The sets of scales are shown in the drawings spanned by braces, each of which are designated 18^a, 18^b, 18^c, 18^d, and 18^e. The sets of characters 17^a to 17^e indicate values of different grades of rope per pound—for instance, grades ranging in

price from "\$0.20" to "\$0.12 $\frac{1}{2}$." Each of the sets of characters from 17^a to 17^e also includes a character indicative of the size or weight of the rope, these indications being " $\frac{5}{8}$ " wt., " $\frac{1}{2}$ " wt., " $\frac{3}{8}$ " wt., " $\frac{5}{16}$ " wt., and " $\frac{1}{4}$ " wt., corresponding with similar characters adjacent the openings 14 in the front of the casing 3. The various scales of the sets of scales 18^a to 18^e will give the value of divisional portions of the rope according to the size or weight thereof and the grade as determined by the price. A scale is thus provided upon the dial 13 for each one of the different characters of the sets of characters from 17^a to 17^e of the plate 15, so as to indicate clearly the cost of a divisional portion of rope drawn from the holder 5, according to its size and the price per pound as set forth in the sets of characters 17^a to 17^e. The scale of feet of the dial 13 ranges from the character "0" to "70." The scale of weight (indicated 19) for each of the sets of scales 18^a to 18^e ranges from "0" up to several pounds, according to the weight of the rope which is being measured.

The pulling of a predetermined unit of length of rope—say a foot—from the holder 5 is designed, with reference to the various sizes or weights of rope passing through the openings 14, to impart the same movement to the dial 13, and it is therefore necessary to provide the holder elements 5^a, 5^b, and 5^c, &c., of different sizes for different sizes of rope passing therearound. A thicker or heavier weight rope is passed about a roller element of smaller diameter than that about which a lighter or smaller size of rope passes, so that the revolution of the shaft 6 will impart the same movement as regards the length of the various sizes of rope removed from the holder elements to the pinion 11. There will be a predetermined relation between the roller elements and the number of teeth of the pinion 11, and, further, the distance between the various characters of the scales on the dial will vary according to calculations with reference to the different sizes of rope to be vended.

The cabinet shown in the drawings is of a structure adapted to vend rope of five different sizes. However, it will be understood that the invention may be changed with reference to structural details to enable vendition of rope from a greater or less number of bales, according to the desire of the user, since the machine may be constructed in different sizes by the manufacturer.

A description of the operation of the invention will clearly show the advantages thereof. A spring 20 normally holds the dial 13 in a predetermined position, and a transverse guide-bar 21 is notched so that the rope of the different bales as it passes

around the roller elements of the roller 5 will not become entangled. The member 21 is suitably attached to the rear portion of the casing 3 adjacent the holder 5. A purchaser desires to secure ten feet of rope " $\frac{5}{8}$ " wt. We will say that the grade of rope of this size which is being vended by the merchant is sold at "\$0.20" per pound. The outermost set of characters 17^a of the plate 15 includes the grade price "\$0.20" and the size character " $\frac{5}{8}$ " wt. The dealer grasps the end of rope passing through the opening 14 of the casing 3 adjacent the " $\frac{5}{8}$ " mark and pulls upon this rope until the scale-mark "10" of the foot-scale of the dial 13 reaches the plate 15, this indicating that ten feet of the rope have been drawn from the holder 5. The holder 5 is of course revolved as the rope passes therefrom, and the connection between the worm-wheel 10 and the pinion 11 effects the necessary actuation of the dial 13 above described. When the roller 5 is revolved, as above described, all slack is taken up in the different sizes of rope passing about the roller elements of the holder; but those sizes other than the " $\frac{5}{8}$ " size which is being pulled upon are not disturbed whatever. When the dial 13 has been actuated so that the numeral "10" of the measuring-scale is adjacent the plate 15, the value-mark "\$0.20" is also adjacent the plate, as well as the weight-mark "1 lb." of the outermost set of scales 18^a. In other words, the ten feet of rope will weigh one pound, and the cost thereof at "\$0.20" a pound will be "\$0.20," this being clearly shown upon the dial 13. The ten feet of rope may be cut off at the opening 14 in a manner readily apparent. Preparatory to another purchase the operator of the machine grasps the upper end of the lever 7, which extends above the casing 3, and pulls upon said lever, throwing the wheel 10 out of gear with reference to the pinion 11, and the spring 20, connected with the dial 13, restores this dial to its normal position preparatory to the actuation of the device in vending rope for the second purchaser.

Having thus described the invention, what is claimed as new is—

In a rope computing and measuring machine, the combination of a rope-holder comprising a plurality of rotating elements, a shaft for said holder, a dial, means operably connecting the dial with the shaft, and a pivot-lever connected with the shaft for throwing the same into and out of operable connection with the dial.

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

EUGENE F. HUG. [L. s.]

Witnesses:

A. F. HALL,
R. H. LLOYD.