M. E. BARTON.

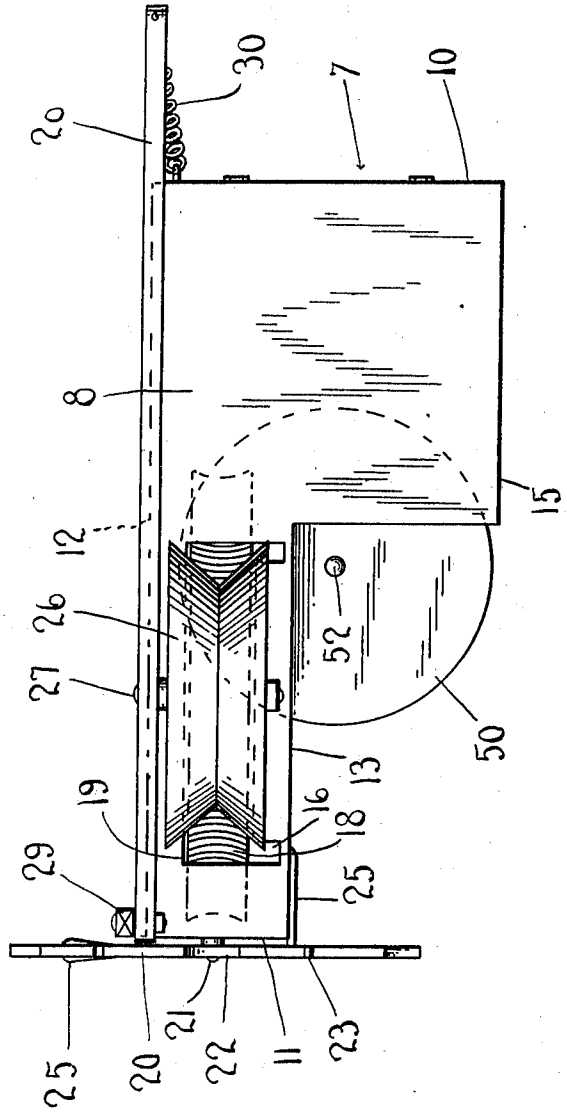
ROPE MEASURING MACHINE.

APPLICATION FILED SEPT. 9, 1909.

982,460. Patented Jan. 24, 1911.

4 SHEETS—SHEET 1.

FIG. 1.



Witnesses

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4 SHEETS—SHEET 2.

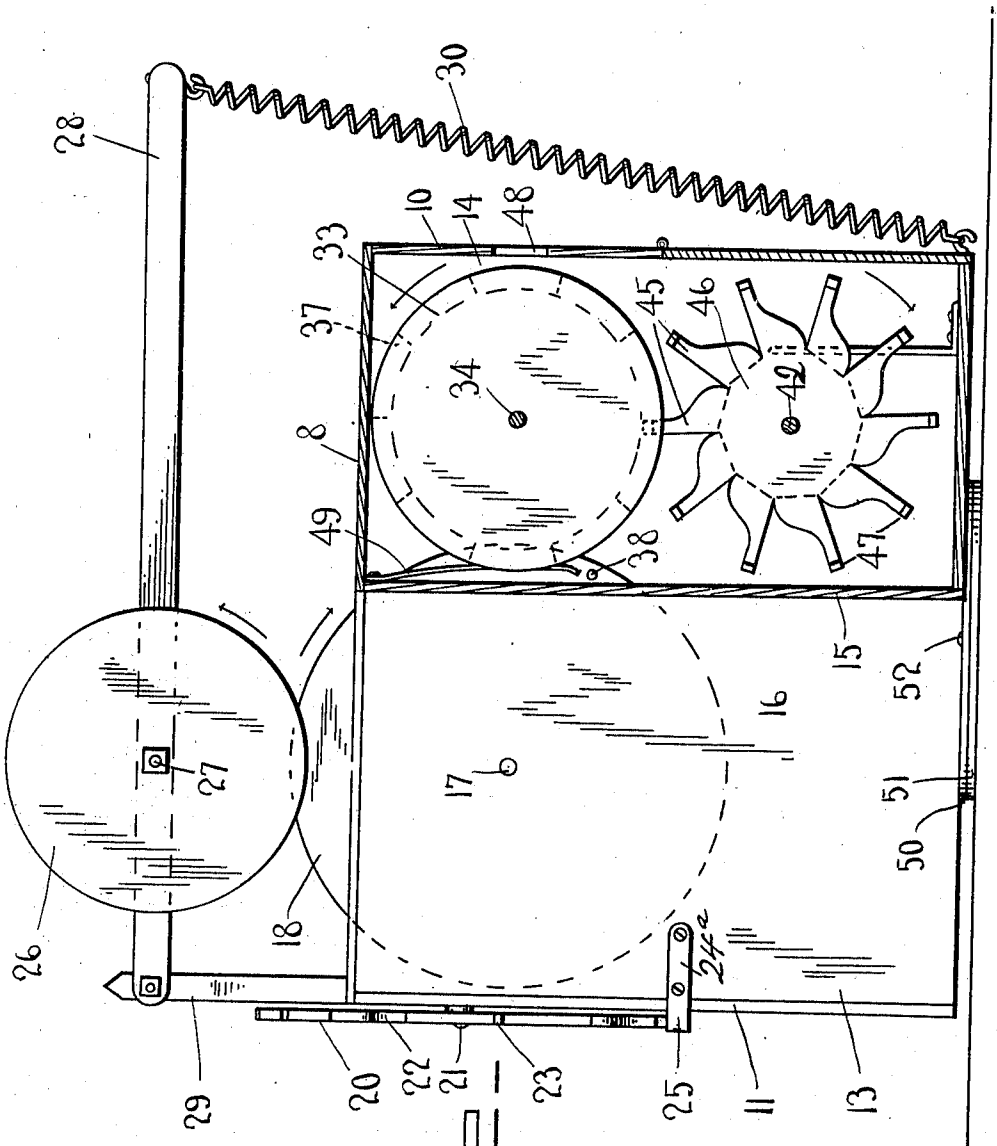

FIG. 2.

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4 SHEETS—SHEET 3.

FIG. 6.

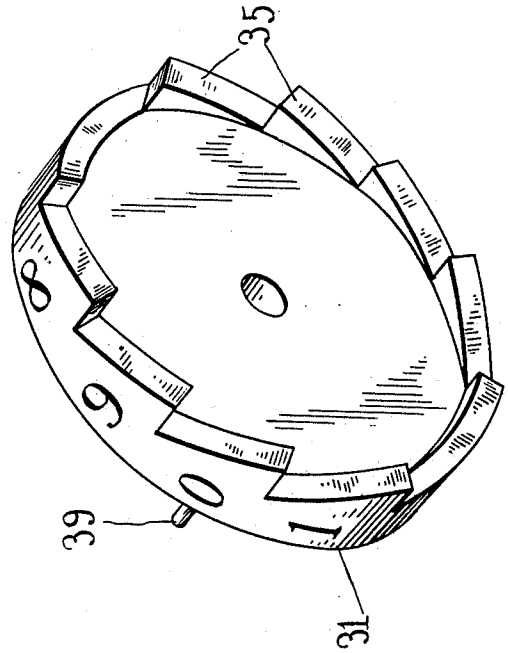
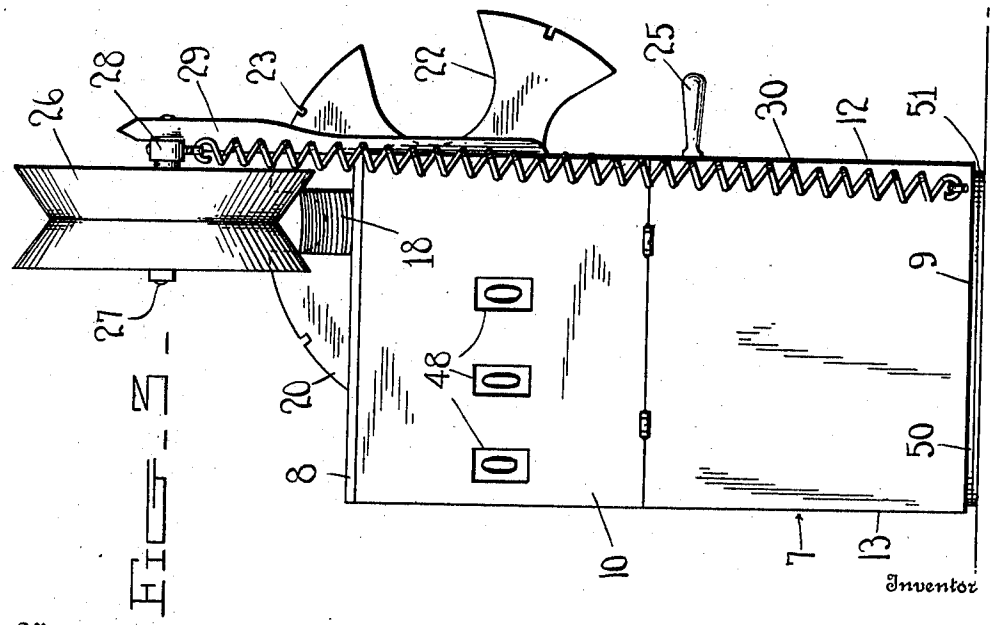


FIG. 5.



Witnesses

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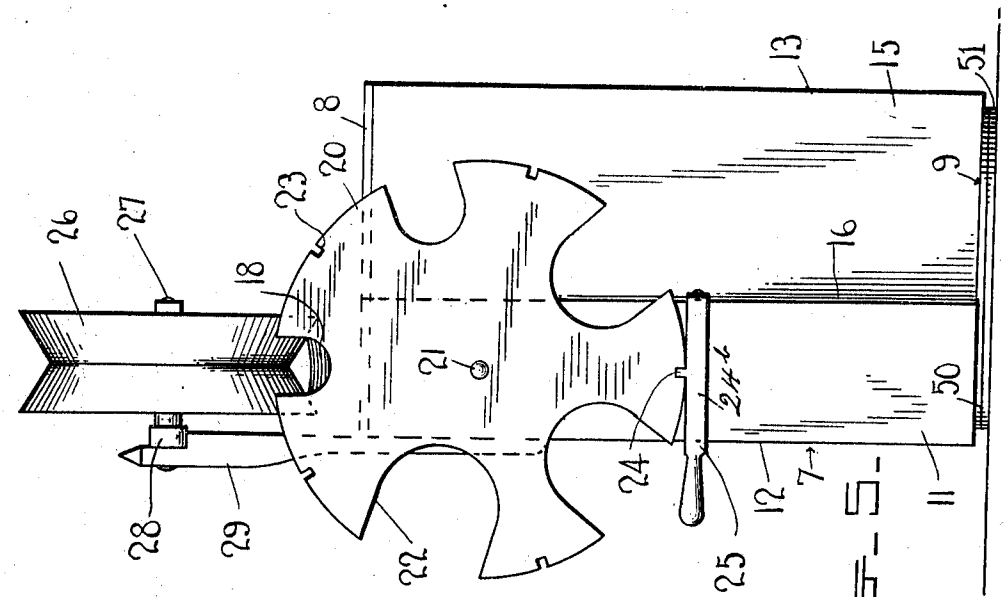

FIG. 5.

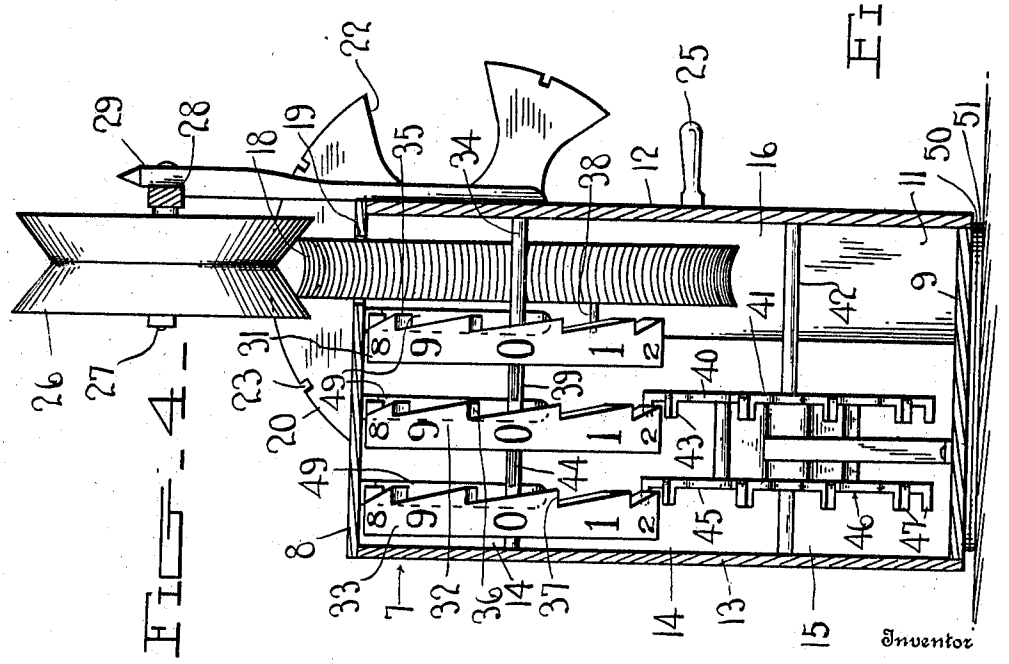

FIG. 4.

Witnesses

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UNITED STATES PATENT OFFICE.

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ROPE-MEASURING MACHINE.

982,460. Specification of Letters Patent. **Patented Jan. 24, 1911.**

Application filed September 9, 1909. Serial No. 516,827.

To all whom it may concern:

Be it known that I, MINA E. BARTON, a citizen of the United States, residing at Greeley, in the county of Weld, State of Colorado, have invented certain new and useful Improvements in Rope-Measuring Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The present invention has reference to improvements in rope measuring machines, and it resides primarily in the production of an extremely simple, inexpensive, and efficient machine of the type specified, constructed in such a manner as to accurately register the length of the span of rope drawn therethrough during the time that it is in operation, and to admit of its turning freely in any direction during such time, to accommodate itself to the movements of the rope and thus lessen the strain upon its registering mechanism.

More especially, however, the invention resides in the particular construction of the elements which comprise the registering mechanism, in the provision of devices for holding the registering wheels against accidental displacement after each partial rotation thereof, in the specific construction of the main drive wheel, which operates the above mentioned mechanism, and in the provision of a guide wheel for directing the rope to said drive wheel. The guide wheel is formed with a peripheral series of inwardly extending openings of different sizes, whereby the machine is adapted for use in connection with ropes of any of the standard thicknesses.

The preferred embodiment of the invention is illustrated in the accompanying drawings, wherein,

Figure 1 is a plan view of the improved machine. Fig. 2 is a side elevation thereof, with one of the side members of the casing omitted. Fig. 3 is a front elevation. Fig. 4 is a view similar to Fig. 3, with the front member of the casing omitted. Fig. 5 is a rear elevation. Fig. 6 is an enlarged perspective view of one of the toothed registering wheels.

Reference being had to the drawings, and to the designating numerals marked thereupon, the main working parts of the machine are shown as inclosed within a casing indicated in a general manner by the numeral 7 and comprising top and bottom members 8 and 9, front and rear members, or ends, 10 and 11, and left and right hand side members 12 and 13. The front portion of the casing has about twice the width of the rear portion, the right hand side member thereof being composed of three separate sections 14, 15, and 16 fastened together in any desired manner.

Through the rear portion of the casing extends a transversely disposed, horizontal shaft 17 having secured thereto the main drive wheel 18, whose upper portion projects through a longitudinal slot 19 formed in the top member 8. Directly to the rear of this wheel is located exteriorly of the casing a guide wheel 20 mounted upon a lateral pin 21 set into the end member 11. The periphery of the guide wheel has formed therein a series of inwardly extending openings 22, which are of different sizes, to correspond to the various standard thicknesses of rope carried in stock by the dealer owning the machine, the wheel being designed to be turned manually in either direction to bring the proper opening in line with the concave periphery of the drive wheel 18.

A catch 25 is employed to retain the guide wheel in adjusted position. The said catch is made of steel or some other suitable spring material and comprises an arm 24^a which is secured to one side of the casing and an arm 24^b which is at right angles to the arm 24^a and normally, by reason of the elasticity of the said catch bears against one end of the casing. The said arm 24^b is provided on its upper side with a detent 24 which may be engaged with any one of a series of peripheral notches 23 with which the guide wheel is provided. By moving the free end of the arm 24^b laterally the said detent may be disengaged from any notch to permit the guide wheel to be partly turned as may be required and it will be understood that when the desired notch comes opposite the detent the latter, by reason of the elasticity of the catch will engage said notch and hold the guide wheel in adjusted position.

Above the drive wheel is located a presser

wheel 26 revolubly mounted upon a lateral pin 27 carried by a bar 28 arranged longitudinally of the casing, the rear end of the bar being pivoted to the upper end of a vertical standard 29 bolted to the left hand side member of the casing, while the front end thereof is connected to one end of a retractile coil-spring 30, whose other end is fastened to the bottom member 9, the tension of the spring causing the grooved periphery of the presser wheel to engage the rope and hold the same upon the periphery of the drive wheel.

The registering mechanism, which is operated by the drive wheel, comprises a series of three ratchet wheels 31, 32 and 33, mounted for independent rotation on a transversely arranged horizontal shaft 34 and designed to respectively indicate the number of feet (or yards) in the span of rope in units, tens, and hundreds, to which end, each of these wheels has marked or otherwise indicated upon its periphery a series of figures running from 0 to 9. The teeth 35, 36, and 37 with which the registering wheels are provided correspond in number to the number of figures, and are located directly to the right of the latter, as shown in Fig. 6. The right hand or units wheel 31 is rotated by means of a lateral pin 38 set into the inner face of the drive wheel, the length of whose periphery is such that when said wheel has made a complete revolution, one foot (or yard- of rope has passed between the presser and guide wheels. Thus for each complete revolution of the drive wheel, the wheel 31 advances one-tenth of a revolution.

The registering wheel, above referred to, is likewise provided with a lateral pin 39, which projects toward the left and is arranged to successively engage the ten arms 40 of a star wheel 41 loosely mounted upon a shaft 42 disposed below and parallel with the shaft 34, for imparting a step-by-step rotary movement thereto. Each of the arms 40 has its free end bent to form a lateral finger 43, these fingers being designed to successively engage the teeth 36 of the tens wheel 32, which latter is thus rotated in a similar manner. The registering wheel last mentioned carries a lateral pin 44 arranged for engagement with the arms 45 of a second star wheel 46, which is also mounted on the shaft 42, the free ends of said arms being formed with fingers 47 which, in turn, are designed for operative engagement with the teeth 37 of the third, or hundreds, registering wheel 33. Thus, it will be apparent from the foregoing, that for each complete revolution of the drive wheel, the units wheel makes one-tenth of a revolution, thus changing the unit. When the units wheel has made one complete revolution, the tens wheel will have been advanced one-tenth of a revolution, thus bringing a different figure opposite the proper sight opening 48 formed in the front member of the casing, there being three of such openings, as will be understood. In like manner, when the tens wheel has made one complete revolution, the hundreds wheel will have been caused to make one-tenth of a revolution.

The three registering wheels, as shown in Fig. 4, are disposed at the left of the drive wheel 18, and hence in front of the central section 15 of the right hand side member 13. To the inner face of this section, there is secured a series of three depending leaf springs 49, Fig. 2 whose normally bowed central portions are arranged for contact with the outer of the three registering wheels. As a result of this construction, the pressure of the springs will hold said wheels normally motionless. When, however, the wheels in question are rotated, as above described, the springs will be flattened, and as the fingers 43 and 47 pass beyond the teeth 36 and 37, and the pin 38 beyond the teeth 35, the springs will be free to assume their normal position, their pressure overcoming the slight momentum of the wheels, so as to accurately center the figures exposed upon the latter with reference to the sight openings.

In order to permit access to the registering mechanism, as a whole, for cleaning or repairing the same, the front member 10 of the casing is formed in two sections which are hinged together at their mutually adjacent edges, the sight openings being located in the upper section.

The bottom casing member 9 is provided with a circular bearing plate 50, which is rigidly secured thereto in any preferred manner and is designed to turn upon a similar plate 51 fastened to the floor of the room in which the machine is located, the two plates being connected together by a central pivot bolt 52. By reason of this construction it will be apparent that the machine, as the rope is drawn between the drive and presser wheels, is free to turn in either direction, and thus accommodate itself to the movement of the rope.

Further description of the invention and its operation is deemed unnecessary in view of the foregoing.

What is claimed, is:—

The herein described rope measuring machine comprising a casing, a measuring wheel mounted therein for revolution and extending above the upper side thereof, a registering mechanism in the casing connected to and operated by the measuring wheel, a standard rising from one side of the casing, a bar pivoted to said standard, a presser wheel mounted on said bar, a spring connecting said bar and the casing and yieldingly engaging the presser wheel with the

upper side of said measuring wheel, a guide wheel mounted on one end of the casing at right-angles to the measuring wheel and presser wheel, said guide wheel having a series of peripheral gage openings and means co-acting with said guide wheel to lock the latter with either of its gage openings opposite and in line with the engaging faces of the measuring wheel and presser wheel.

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

MINA E. BARTON.

Witnesses:
JOHN WAGNER,
W. H. PLOURD.