(No Model.) 2 Sheets—Sheet 1.

J. D. BOATWRIGHT.

CORDAGE MEASURING MACHINE.

No. 530,385. Patented Dec. 4, 1894.

Fig. 9.

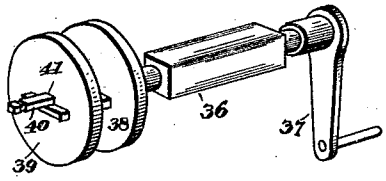


Fig. 1.

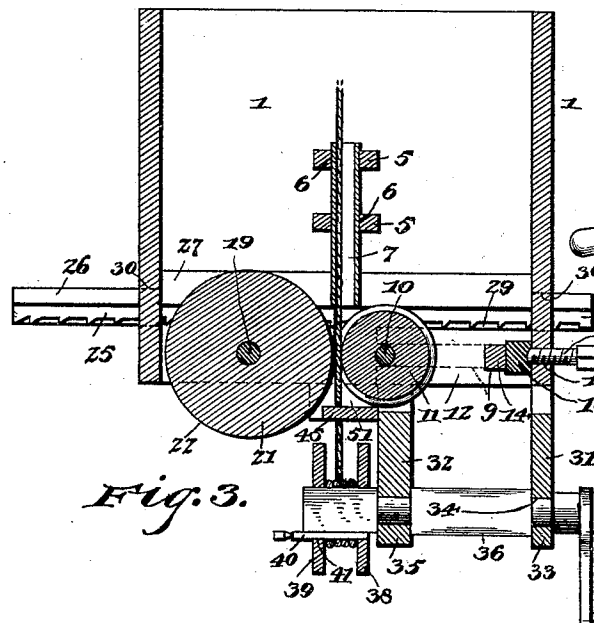


Fig. 3.

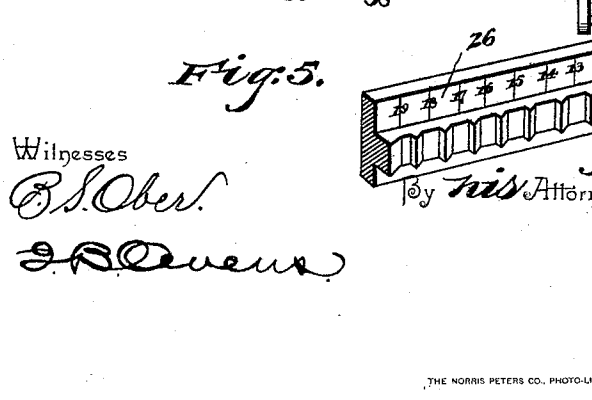
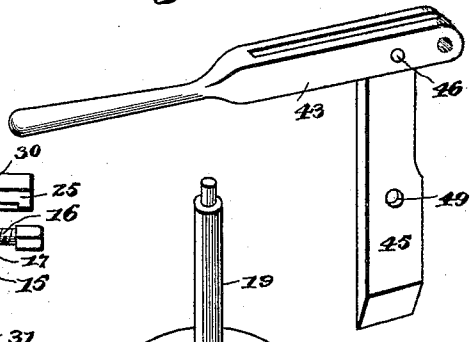
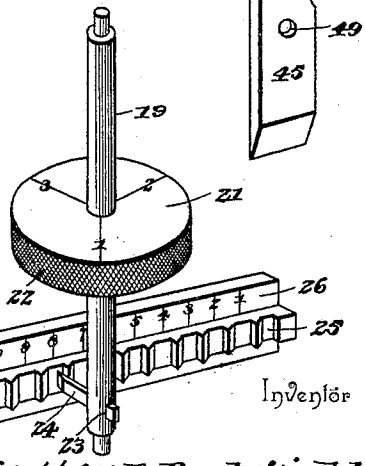
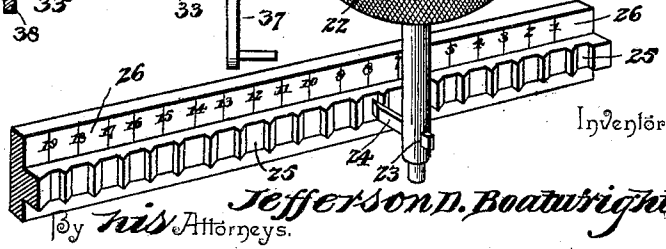


Fig. 5.

Fig. 6.







Witnesses
E. S. Ober.
J. R. Queen

Inventor
Jefferson D. Boatwright,
by his Attorneys.
C. A. Snow & Co.

(No Model.) 2 Sheets—Sheet 2.

J. D. BOATWRIGHT.

CORDAGE MEASURING MACHINE.

No. 530,385. Patented Dec. 4, 1894.

Fig. 2.

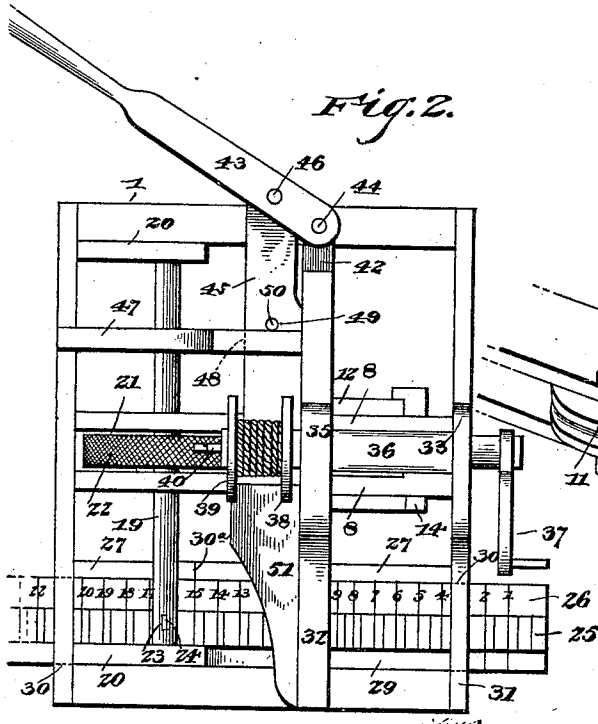


Fig. 7.

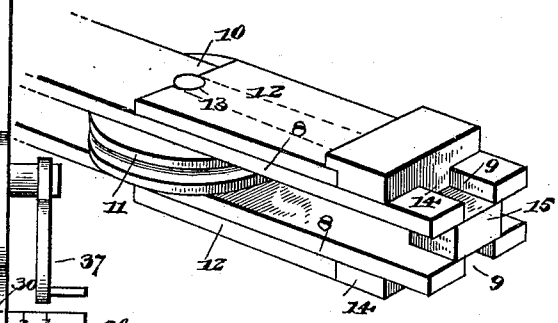


Fig. 8.

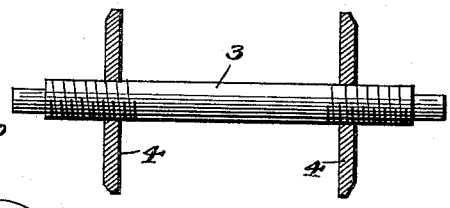
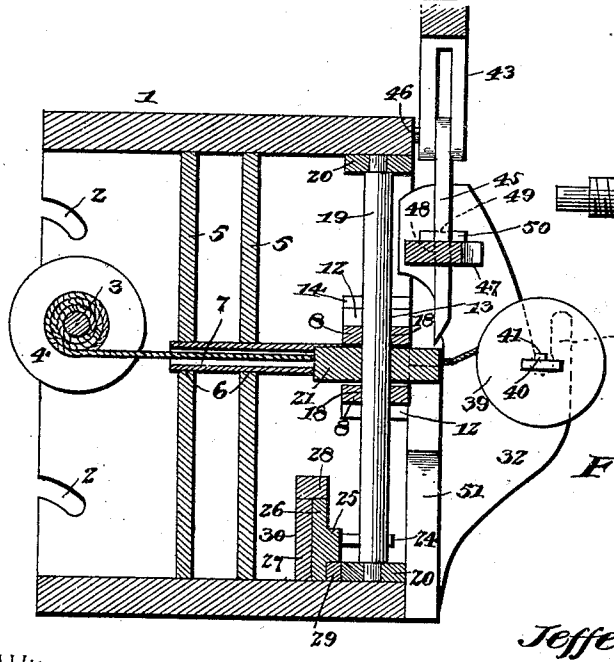


Fig. 4.



Witnesses
B. S. Ober.
[illegible]

Inventor
Jefferson D. Boatwright,
By his Attorneys.
C. A. Snow & Co.

UNITED STATES PATENT OFFICE.

JEFFERSON D. BOATWRIGHT, OF BARACHIAS, ALABAMA.

CORDAGE-MEASURING MACHINE.

SPECIFICATION forming part of Letters Patent No. 530,385, dated December 4, 1894.

Application filed June 28, 1894. Serial No. 515,996. (No model.)

To all whom it may concern:

Be it known that I, JEFFERSON D. BOATWRIGHT, a citizen of the United States, residing at Barachias, in the county of Montgomery and State of Alabama, have invented a new and useful Cordage-Measuring Machine, of which the following is a specification.

The invention relates to an improvement in machines for measuring cordage in retail stores, and it has for its object to produce a device which will be more accurate, and at the same time one which can be operated with comparative ease.

To this end the invention consists in an improved measuring dial, and in a sliding register connected with the dial and moving in unison therewith, whereby as the dial operates to register a certain length, the sliding plate or register will indicate each revolution of the dial, and consequently a similar number of its circumferential lengths on the rope. Various features of construction and subordinate combinations are collateral to this main point, and all will be more fully described hereinafter, and finally embodied in the claim.

In the drawings: Figure 1 represents a plan view of my machine, showing the top portion of the frame broken away; Fig. 2, a front elevation thereof; Fig. 3, a horizontal section, taken through the registering dial or disk; Fig. 4, a vertical cross-section, taken through the axis of said disk; Fig. 5, a detail perspective of the disk aforesaid, together with its shaft and the sliding indicating plate or register, the parts being shown in operative adjustment; Fig. 6, a detail perspective of the rope-severing knife; Fig. 7, a similar view of the means for adjusting the wheel which co-operates with the registering disk, the view extending to said wheel and to the horizontal plates for supporting the same; Fig. 8, a detail section of the reel for primarily receiving the cordage, showing the means for adjusting the flanges thereon; and Fig. 9, a detail perspective of the reel for receiving the measured rope.

The frame of the machine consists of a square box 1, the sides of which are rigidly joined, while the front and rear ends or sides are left open. Formed in the rear sides of the box 1, and extending inwardly and downwardly therefrom are the segmental slots 2, Fig. 4 which are preferably three pairs, and which are adapted to receive the shaft 3 of the rope-carrying reel. The shaft 3 extends transversely from one side of the frame to the other, and has its ends reduced so as to fit snugly within the respective slots 2. The shaft 3 is threaded at its ends, so as to receive the flanges or disks 4, which have central orifices therein similarly threaded and adapted to screw over the threaded portions of the shaft 3, whereby the flanges 4 are secured in place and whereby they may be adjusted to suit the size of the coil wound on the shaft 3.

By means of the multiplied number of slots 2 the device may hold a plurality of reels or rolls of cordage, though I have shown but one in the drawings. Rigidly secured to the bottom of the frame 1, and arising vertically therefrom to the under side of the top, to both of which they are secured, are the parallel standards 5, which are provided at their middles with the longitudinally-aligned openings 6, in which the tube 7 is securely and immovably fastened. The tube 7 is adapted to receive the cordage from the reel or shaft 3; and the front end of the tube projects to a point very near the front end of the machine. Fixed to each side of the frame 1, at about the middle thereof, are the horizontally-extending beams 8, which are two in number and which are parallel with each other. The left-hand ends of the beams 8 Fig. 7 are slotted longitudinally, at 9, said slots extending to points very near the middles of the beams and being vertically aligned with each other. Located in the slots 9, and extending above and below the same, is the vertical spindle 10, which has affixed thereto, at a point between the beams 8, the wheel 11, which is grooved on its periphery so as to effectually engage the cordage or rope being operated upon.

Located on the upper and lower sides, respectively, of the two beams 8 are the plates 12, which are one for each beam and which have their inner ends formed with semi-circular notches 13 therein, adapted to receive the extremities of the shaft 10, so that said shaft will be capable of revolving therein. The outer ends of the plates 12 are rigidly

secured to the vertically-extending plate or beam 14, which extends through the slots 9 of the beams 8, and which has its ends projected beyond the beams, and enlarged to an extent commensurate with the width of the plates 12. By these means the plates 12 are connected to each other, and made to move in unison.

Bearing against the left-hand side of the plate 14 is the rubber buffer-block 15, which is located between the beams 8, and which is engaged by the set-screw 16, operating in the internally-threaded passage 17 in the left-hand side of the frame 1. By these means the buffer 15, and consequently the plate 14, may be moved inwardly causing the shaft 10 and affixed wheel 11 to move correspondingly. The purpose for this will appear with more clearness hereinafter. Formed in the plates 8, and in the left-hand portions thereof, are the vertically-aligned openings 18, in which the shaft 19 is revolubly mounted. The shaft 19 extends vertically from the top to the bottom of the frame and has its respective ends revolubly journaled in the plates 20, fixed to the top and bottom of the frame.

Fixed to the shaft 19, at a point between the beams 8, is the measuring dial or disk 21, which is arranged in a horizontal plane with the wheel 11, and which has its roughened periphery 22 in close relation to the periphery of the wheel 11. The disk 21 has its upper face graduated and provided with characters indicating three feet or one yard, and the size of the disk should be such that its circumference will be equal to this length. From the tube 7 the cordage or rope passes horizontally between the wheels or disks 11 and 21. Fixed to the lower end of the shaft 19, by passing through an opening 23 therein, is the pin 24, which has one end projecting past or beyond the shaft so as to engage with the rack-bar 25, of the indicating plate 26. The indicating plate 26 extends horizontally at the lower portion of the body 1, and is guided by the similarly-extending plate 27, fixed to the sides of the body portion and provided with a rib 28, bearing upon the upper edge of the plate 26, while the lower edge of the plate is confined by a rib 29, adapted to engage the front side thereof. Formed in the sides of the body portion, and directly adjacent to the plate 27, are the horizontally and laterally aligned slots 30, through which the plate 26 is adapted to pass in its operation. The front face of the plate 26 is provided with a scale, which may be of any extent, and which is adapted to have each of its units register one revolution of the disk 21. This is effected by means of the pin 24, which, as has been described, is fixed to the shaft 19 and which will engage a tooth on the rack-bar at each revolution of the shaft 19. Since the shaft revolves in unison with the disk 21, this engagement of the pin and rack-bar, will be contemporaneous with each revolution of said disk. The rib 28 may be provided with a scale line 30^a, which will serve as an indicating line for the plate 26, and it is with this line that the numeral 1 on said plate should align when the operation of the machine is started.

Fixed to the front side of the frame 1, and extending vertically throughout the height thereof, are the beams 31 and 32, which are two in number and which are substantial duplicates, differing only in hereinafter described details. The beam 31 is provided with an upwardly-extending offset stud 33, which forms an indentation or recess 34, and this recess is aligned with a similar recess on the beam 33, and formed by an offset stud 35, similar to the stud 33. Journaled in these recesses or bearings is the shaft 36, which is provided with reduced portions at said bearings and has its left-hand end extended to permit the connection of the crank 37 thereto, whereby the shaft is revolved. The right-hand end of the shaft 36 is extended beyond the plate 33 and is formed rectangular in cross-section and provided with the disk 38, which is fixed thereto and located directly adjacent to the beam 32, and with the disk 39, which is removably secured to the shaft and held in place by a key 40, passing through an opening 41 in the disk. By these means the disk 39 may be removed so as to permit the removal of the coil of cordage, which may have been wound on the shaft in the operation of the machine. The upper end of the beam 32 is reduced to form the vertically-extending arm 42, to which the bifurcated end of the lever 43 is pivotally connected by means of a pin 44. The lever 43 is pivotally connected to the vertically-extending knife-plate 45, by means of a fulcrum pin 46.

47 indicates a horizontally-extending brace, which is rigidly secured to the right-hand front of the machine and which extends horizontally to the brace 32, to which it is firmly secured. Formed in the brace 47 is the slot 48, in which the knife-plate 45 is located, and through which the knife-plate passes in its operation. The knife-plate is provided with a horizontally-extending opening 49, through which a key 50 may pass to secure the knife-plate in a raised position.

Rigidly secured to the right-hand side of the beam 32, and at the lower portion thereof, is the block 51, which has its upper end broadened and arranged in approximately horizontal alignment with the wheels 11 and 21, so that as the knife-plate 45 is moved downwardly its edge will engage with the upper end of the block 51 and sever the rope which may be located between the two parts.

In the operation of the invention the cordage to be measured is placed upon the shaft 3, and the disks 4 adjusted so as to hold the roll of cordage snugly in position. If more than one roll is to be attached to the machine, this may be done by multiplying or increasing the number of shafts 3 and placing them in the additional pairs of slots 2. After the rope has been arranged upon the reel, the

free end of the former is passed through the tube 7 and between the engaging peripheries of the wheels 11 and 21. When it is desired to measure a length of rope, the disk or wheel 21 is adjusted so that the zero of its scale will register with one side of the upper beam 8; and the plate 26 is so adjusted that its zero will register with the vertical line 30ª of the rib 28. The rope should now be drawn from between the wheels 11 and 21, whereupon the latter wheel will revolve, carrying it with the shaft 19. As the shaft 19 revolves, its pin 24 will engage with that tooth of the rack-bar 25 which is directly adjacent thereto, and such engagement will cause the plate 26 to move laterally a predetermined distance. This distance should be sufficient to place the character "1" of the scale of plate 26 in alignment with the line 30ª, thus registering, say one yard, of rope. The withdrawal of the rope should be continued until the requisite amount has been drawn out; whereupon, the pin 50 should be removed and the knife-plate 45 operated to sever the measured from the unmeasured rope. When this has been done the plate 26 and disk 21 should be readjusted so as to be in readiness for a second operation, or this may be left until it is desired to perform such operation, when it may be done with, of course, equal facility.

When the length of rope to be withdrawn is so great that it cannot be easily handled, the reel of shaft 36 may be used; and when the rope has been wound thereon, the disk 39 may be removed so as to facilitate removing the rope. By means of the set-screw 16 the wheel 11 may be pressed into engagement with the rope or cordage and the revolution of wheel or disk 21 insured.

I have shown my invention embodied in the particular mechanism here disclosed, since I regard this as best adapted to the purpose. It is obvious, however, that the invention is subject to various changes in the size, proportion and arrangement of parts which may be resorted to without departing from the spirit and scope thereof, and which will suggest themselves to any skilled mechanic. Therefore, I do not propose to limit myself to the precise construction herein shown, but consider myself entitled to all such variations as come within the spirit and scope of my invention.

Having thus described my invention, I claim—

In a machine for measuring cordage, the combination of a reel for primarily receiving the cordage, a pair of horizontally-extending and parallel beams, a vertical shaft journaled therein, a disk fixed to the shaft and located between the beams and by which the cordage passes on its way from the reel, a wheel located between the beams and capable of pressing the cordage into engagement with the periphery of the disk, the beams being slotted longitudinally so as to afford longitudinally-adjustable bearings for the trunnions of the wheel, a plate arranged at the outer side of each beam and bearing against the trunnions of the wheel, a vertically-extending beam projecting through the slots in the horizontal beam and engaged with the plates aforesaid, an expansive rubber block bearing against the vertically-extending beam, whereby it and consequently the wheel is given a tendency toward the disk, a pin fitting on the shaft and projecting radially therefrom, and an indicating plate provided with a rack-bar adapted to be engaged by the pin, whereby the indicating plate is moved a degree at each revolution of the shaft, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

JEFFERSON D. BOATWRIGHT.

Witnesses:
H. H. MATTHEWS,
DAVID JOHNSTON.