

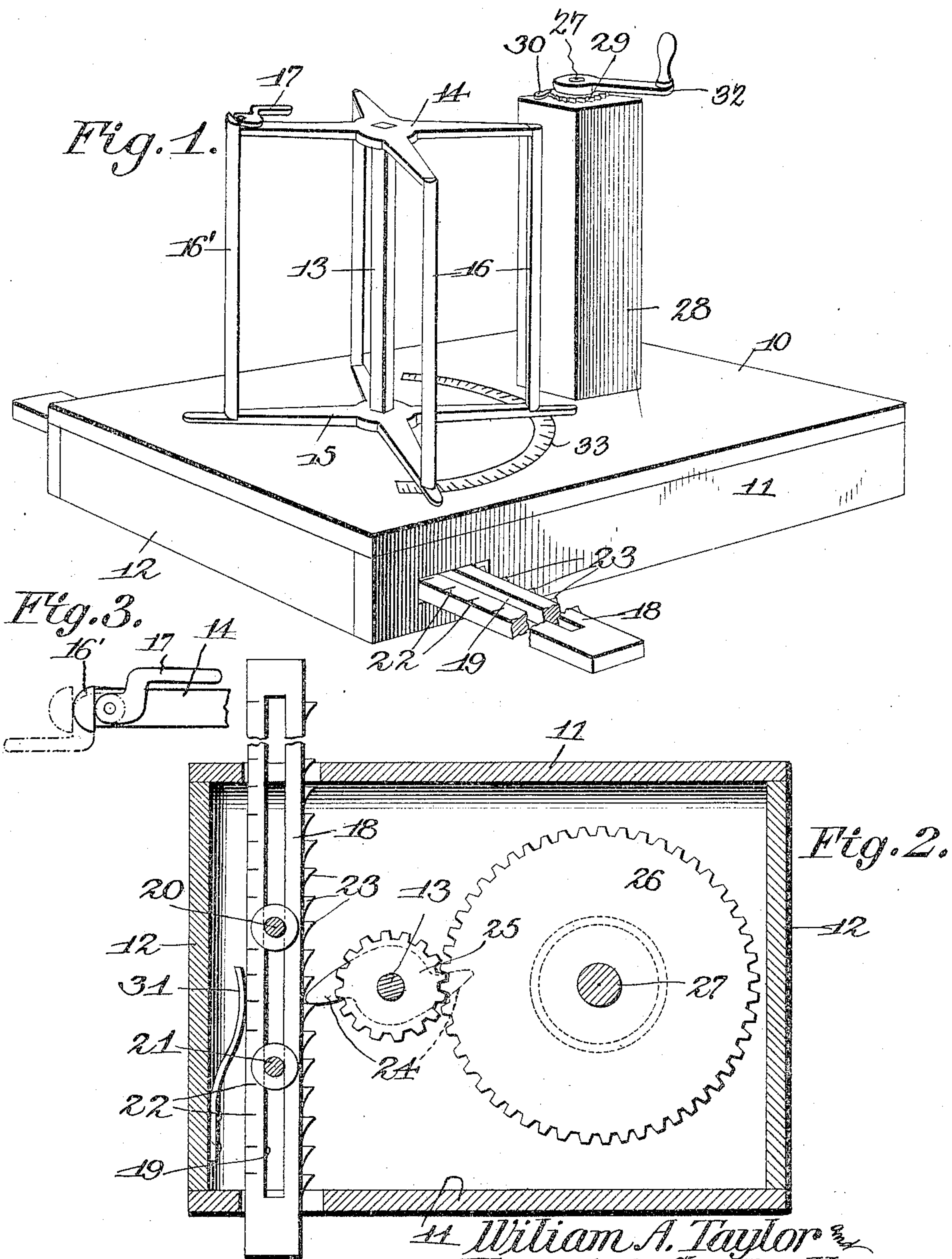
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W. A. TAYLOR & T. R. CHURCHWELL.

CLOTH MEASURING DEVICE.

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Witnesses

E. H. Stuart
C. N. Woodward.

44 *William A. Taylor* and
Theodric R. Churchwell, Inventors
by *C. A. Snow & Co.*
Attorneys

UNITED STATES PATENT OFFICE.

WILLIAM A. TAYLOR AND THEODRIC R. CHURCHWELL, OF CUMBY, TEXAS.

CLOTH-MEASURING DEVICE.

SPECIFICATION forming part of Letters Patent No. 790,934, dated May 30, 1905.

Application filed June 1, 1904. Serial No. 210,696.

To all whom it may concern:

Be it known that we, WILLIAM A. TAYLOR and THEODRIC R. CHURCHWELL, citizens of the United States, residing at Cumby, in the county of Hopkins and State of Texas, have invented a new and useful Cloth-Measuring Device, of which the following is a specification.

This invention relates to devices for measuring lengths of cloth and other materials, and has for its principal object to provide a measuring-reel on which a quantity of cloth may be wound and its length correctly indicated.

A further object of the invention is to provide a collapsible reel of such nature as to permit the ready removal of the cloth without unwinding.

A still further object of the invention is to provide a means for indicating or measuring a portion of the cloth for the purpose of correcting errors due to the gradual increase in the quantity of cloth taken on at each successive revolution of the reel.

With these and other objects in view, as will more fully hereinafter appear, the invention consists in certain novel features of construction and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and particularly pointed out in the appended claims, it being understood that various changes in the form, proportions, size, and minor details of the structure may be made without departing from the spirit or sacrificing any of the advantages of the invention.

In the accompanying drawings, Figure 1 is a perspective view of a reel constructed in accordance with the invention. Fig. 2 is a sectional plan view taken through the base of the reel. Fig. 3 is a detail plan view of one of the reel-bars and its adjacent spider-bar.

Similar numerals of reference are employed to indicate corresponding parts throughout the several figures of the drawings.

The base of the device is in the form of a box 10, having side members 11 and 12, the members 11 being provided with guiding-openings for the passage of a longitudinally-movable indicator referred to hereinafter.

In the top of the box or casing is an opening for the passage of a vertical reel-shaft 13, to which are secured spiders 14 and 15, that are connected to each other by vertical bars 16, one of said bars, 16', being secured to the lower spider 15 in such manner that its upper end may be sprung outward or moved toward and from the shaft 13. Against the inner face of bar 16' bears a pivotally-mounted cam 17, carried by the upper spider, and this cam may be turned in order to force the upper end of the reel-bar outward to the same extent as the remaining bars of the reel; but when necessary the cam may be turned to allow the upper end of the bar to move inward and by thus reducing the diameter of the upper portion of the reel permit the ready removal of the cloth mounted thereon. As the cloth is removed from the top of the reel the outer ends of the arms of the spider 14 do not project beyond the line of the reel-bars; but the arms of the lower spider are extended outward for a short distance in order to prevent the falling of the cloth or other material wound upon said reel.

In the openings formed in the side walls 11 of the box or casing is mounted a longitudinally-movable indicator-bar 18, that is slotted for the greater portion of its length, as indicated at 19, for the reception of vertically-disposed guide-pins 20 21, that depend from the top 10 of the box or casing, and in order to prevent excessive movement of the indicator-bar a spring 31 is arranged to bear on one side of the bar at a point between the two guide-pins and forms a friction-brake for said bar. The bar is provided with graduations 22 on its upper face and on one edge has teeth 23, spaced to correspond to the distance between the graduations.

The shaft 13 is provided with two projecting teeth or arms 24, which successively engage the teeth 23 and move the indicator-bar in the direction of its length to the extent of two graduations for each complete revolution of the shaft 13. This shaft is further provided with a pinion 25, that intermeshes with a gear 26, carried by a vertically-disposed shaft 27. The shaft 27 passes upward through an inclosing casing or standard 28 and is provided

with an operating-crank 32. The shaft further carries a ratchet-wheel 29, with which engages a pawl 30, pivotally mounted on top of the casing or standard 28 in order to prevent reverse movement of the shaft 27.

In the operation of the device the cam 17 is turned to force the reel-bar 16' outward to its fullest extent, and the cloth or other material to be measured is then wound around the reel. If the reel is of such size as to receive one yard of material at its first revolution, the second revolution would wind more than a yard, owing to the increased diameter due to the thickness of the material; but as the apparatus is intended more especially for the winding of comparatively short lengths of cloth the variation will not be excessive, and the length, as shown on the indicator-bar, will be approximately correct. In order, however, to provide for the correction of measurement, a scale 33 is arranged on top of the platform to permit the measuring of inches or other fractional parts necessary to be subtracted from the total measurement before the cloth is cut. After the cutting operation the edge of the cloth may be pinned or otherwise secured to the remaining layers of material on the reel, and the cam 17 is then turned to permit the inward movement of the reel-bar 16'. This reduces the diameter of the reel to an extent sufficient to allow the ready removal of the measured cloth.

Having thus described the invention, what is claimed is—

1. In a device of the class described, a base, a reel-shaft supported thereby, a pair of spiders mounted on the shaft, the arms of the lower spider being of greater radial extent than the arms of the upper spider, a plurality of reel-bars connecting the two spiders, the point of connection of the upper ends of such reel-bars being at the outer ends of the upper spider, and the lower ends of the reel-bars being connected at points intermediate the

ends of the arms of the lower spider, and a cam carried by the upper spider for adjusting the position of one of said reel-bars.

2. The combination with a hollow base, of a reel-shaft supported thereby, a reel mounted upon the shaft, a toothed and graduated indicator-bar supported by the base, projecting teeth or arms secured to the reel-shaft and adapted to engage the teeth of the indicator-bar, a crank-shaft, and gearing connections between the two shafts.

3. The combination with a hollow base having guiding-openings in its vertical side walls, of a graduated indicator-bar extending through said openings and provided on one edge with teeth spaced to correspond to the distance between the graduations, a reel-shaft extending upward from the base, a reel mounted upon the shaft, a crank-shaft, and gearing connections between the two shafts.

4. The combination with a hollow base having openings in its vertical side walls, of a slotted and graduated indicator-bar adapted to said openings, guide-pins depending from the top or cover of the base and extending through the slots, a leaf-spring bearing frictionally on one side of the indicator-bar, a reel-shaft extending upward from the base, a reel carried by the reel-shaft, a casing or standard on top of the base, a crank-shaft extending therethrough, a ratchet-wheel secured to the crank-shaft, a pawl carried by the standard and engaging said ratchet-wheel, gears connecting the two shafts, and projecting teeth or arms arranged on the reel-shaft for engaging the teeth upon the indicator-bar.

In testimony that we claim the foregoing as our own we have hereto affixed our signatures in the presence of two witnesses.

WILLIAM A. TAYLOR.

THEODRIC R. CHURCHWELL.

Witnesses:

R. R. WILLIAMS,

O. GILL.