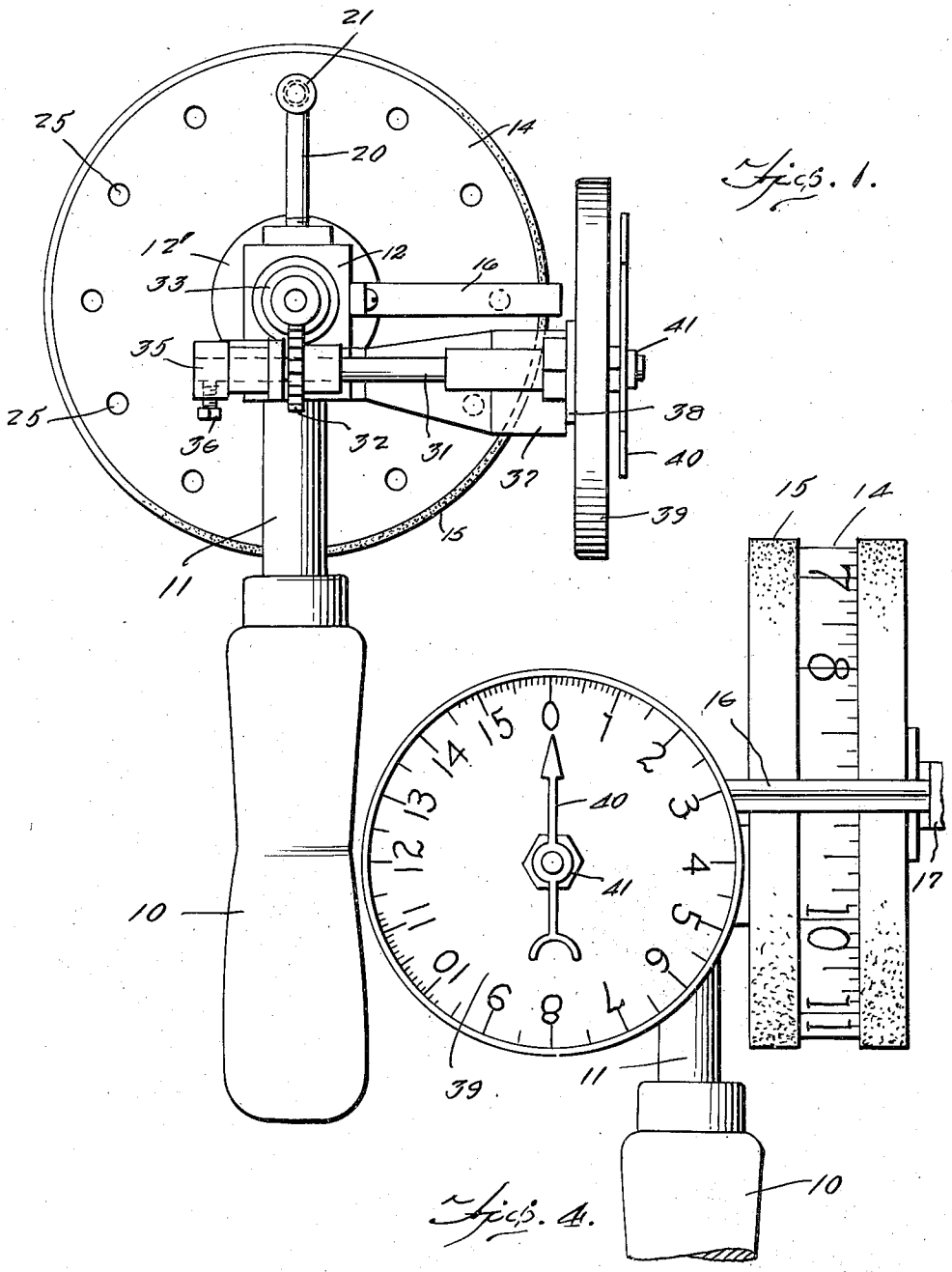
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AUTOMATIC RULE

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Figs. 1.

Figs. 4.

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Fig. 2.

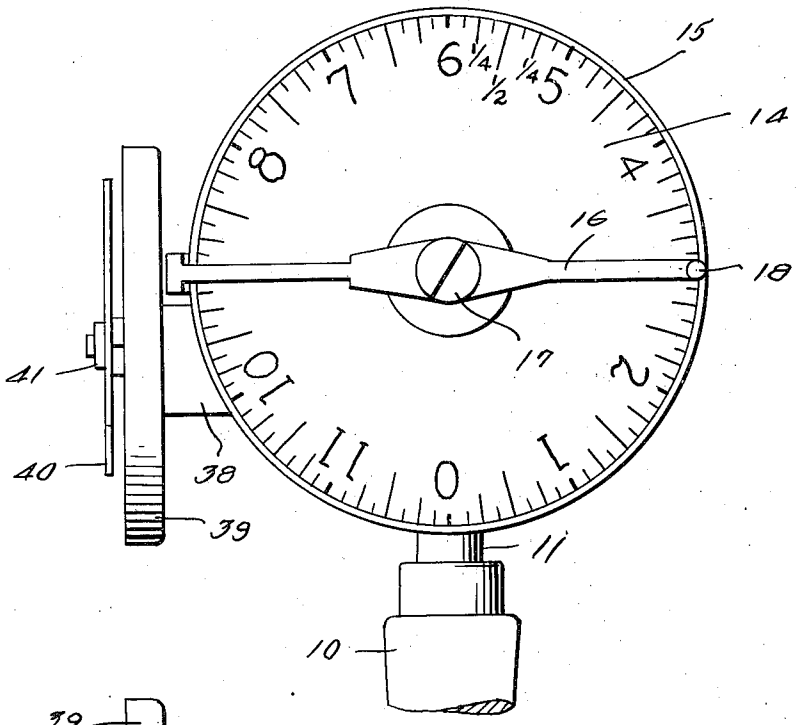
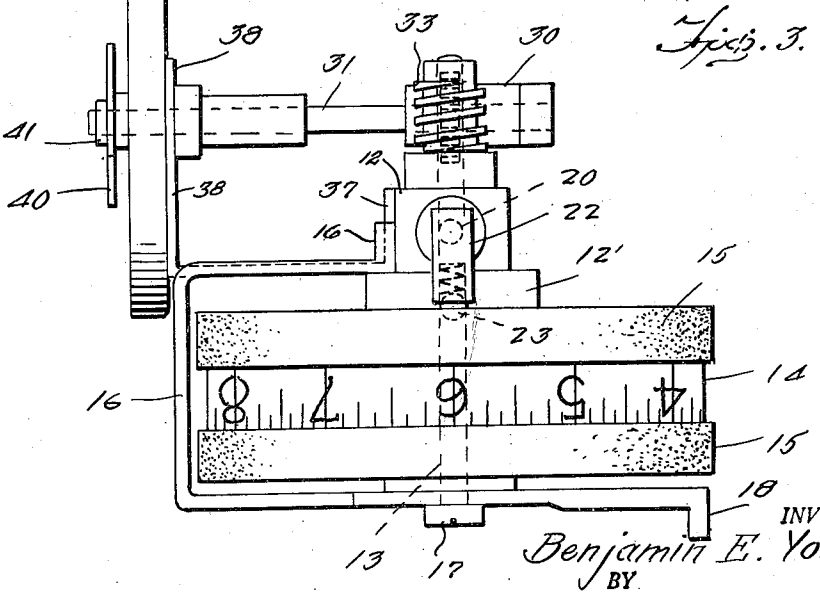


Fig. 3.



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AUTOMATIC RULE

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Application June 3, 1947, Serial No. 752,038

1 Claim. (Cl. 33—141)

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This invention relates to an automatic rule, and more particularly to that type of rule wherein there is provided a rotary disc having indicia thereon adapted to be rotated along a surface to be measured, the relative position of the indicia at the completion of the measuring indicating length, circumference, or the like, of the article so measured.

A primary object of this invention is the provision of an improved measuring implement of this character provided with means for indicating multiples of the length measured by the rotating disc.

A further object of the invention is the provision of means in association with a device of this character including a detent engageable with the rotating wheel at predetermined intervals.

A still further object of the invention is the provision of a device of this character provided with a relatively wide rotating wheel, having friction bands thereon facilitating the rotation thereof and the accurate straight-line movement thereof.

Still another object of the invention is the provision of such a device which is sturdy and durable in construction, reliable and efficient in operation, and relatively simple and inexpensive to manufacture and assemble.

Other objects will in part be obvious and in part be pointed out as the description of the invention proceeds, and shown in the accompanying drawings, wherein there is disclosed a preferred embodiment of this inventive concept.

In the drawings:

Figure 1 is a rear elevational view of one form of device embodying features of the instant invention.

Figure 2 is a front elevational view, partially broken away, of the device disclosed in Figure 1.

Figure 3 is a top plan view of the construction.

Figure 4 is a side elevational view of the device as disclosed in Figure 1, and viewed from the right.

Similar reference characters refer to similar parts throughout the several views of the drawings.

Referring now to the drawings in detail, there is indicated at 10 a handle provided with a shaft or shank 11, and terminating in a boss 12, within which is journaled for rotation an axle 13, which supports a rotary disc measuring wheel 14. The disc 14 is of a desired circumference, for example, one foot, and is graduated on its front face, as best shown in Figure 2, in graduations corresponding to inches and fractions thereof. As best shown in Figure 3, similar graduations are provided on the edge of the wheel and positioned intermediate thereof.

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Also, as best shown in Figure 3, the disc 14 is of substantial width, and is provided with peripheral resilient friction bands 15 positioned on opposite sides of the indicia on the edge thereof, leaving a clear view of such indicia, but providing a firm traction tread, and due to the spaced alignment thereof permitting ready straight-line measurement.

Secured to the boss 12 and rearwardly of the wheel 14 is a bracket 16 of generally U-shaped configuration extending around the circumference of the wheel and forwardly, being pivotally mounted by a screw 17 on the outer end of shaft 13, and extending therebeyond to the opposite edge of the periphery of the wheel, terminating in an upwardly extending portion 18.

It will thus be seen that the bracket, which in effect comprises a pointer, serves to indicate a zero setting to form a starting point for the disc. On the side of boss 12, set at substantially right angles to the bracket 16, is an arm 20, terminating in a right angularly disposed cup 21, within which is positioned a spring 22 which biases a ball detent 23 into engagement with the rear face of the wheel or disc 14. Spaced depressions 25 are positioned at suitable intervals about the rear periphery of the disc, and correspond to spaced indicia on the front thereof. The engagement of the detent with its associated depressions is insufficient to materially retard rotation of the disc 14, but will serve as indicia, and, if the disc is set with pointer 18 indicating the zero, any movement of three or more inches, for example, the distance may be determined audibly by the click as the detent engages and disengages its associated depressions.

Means are further provided for indicating multiples of rotation of the disc 14, and take the form of a supplemental boss 30 secured to the rear extremity of the boss 12, and in which there is journaled for rotation a shaft 31 which carries a worm gear 32. The worm gear 32 is adapted to be engaged by a worm 33 mounted on the shaft 13, the arrangement being such that a full rotation of wheel 14 and its associated shaft 13 will cause a corresponding partial rotation of the shaft 31.

It is to be noted that the shaft 13 is held within its associated journal, as by means of a collar 35 and set screw 36.

The boss 12 has secured further thereto on the side toward which the shaft 31 extends, a U-shaped bracket 37, including a longitudinally

extending arm 38 parallel to the axis of rotation of shaft 13, which arm carries a fixed dial 39, provided, as best shown in Figure 4, on its front face with suitable indicia, comprising multiples of the indicia on the face of disc 14. Shaft 31 extends through a suitable opening in the center of dial 39 and is provided at its extremity with a pointer 40, secured in position, as by a nut 41. It will now be seen that as disc 14 and its associated shaft 13 is rotated a full rotation, the worm and worm gear arrangement previously described will move the pointer 40 a distance corresponding to one full rotation of the wheel, or, in the illustrative example given, one foot, and correspondingly from zero to one, as indicated in Figure 4. Subsequent revolutions of disc 14 will obviously continue the process indefinitely.

From the foregoing it will now be seen that there is herein provided an improved measuring wheel, which accomplishes all the objects of this invention, and others, including many advantages of great practical utility and commercial importance.

As many embodiments may be made of this inventive concept, and as many modifications may be made in the embodiment hereinbefore shown and described, it is to be understood that all matter herein is to be interpreted merely as illustrative and not in a limiting sense.

I claim:

In an automatic rule comprising a boss, a shaft rotatably mounted on the boss, a worm on one end of the shaft and a traction disc fixed on the other end thereof, the traction disc having a circular series of detent recesses on one side thereof, a second shaft rotatably mounted at right angles to the first-mentioned shaft, a worm gear mounted on the second shaft is mesh with the worm on said first-mentioned shaft, an arm fixed on the boss having a socket in one end thereof, and a spring biased detent in said socket

disposed in effective position to engage successively in the recesses on the one side of said traction disc, the features which include an elongated handle fixed to said boss with the longitudinal axis thereof disposed at right angles to the axes of the first and second shafts, two series of corresponding numerical indicia disposed on the other side and on the periphery of said traction disc, a stationary pointer fixed upon said boss rearwardly of said disc and extending radially out and then forwardly transversely of the periphery thereof and finally terminating in a diametrally directed end disposed adjacent and parallel to the other or forward side of said disc in effective position to indicate simultaneously the indicia on said forward side and upon the periphery of the same disc, a bracket secured to said boss and rotatably supporting the second shaft, a fixed dial secured upon said bracket in a plane parallel to the axis of said first-mentioned shaft and said handle, said second shaft at the end remote from the worm mounted thereon extending through said dial, and the latter having numerical indicia representing multiples of the indicia on the traction disc, and a movable pointer fixed on the end of said second shaft extending through said dial.

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