No. 703,270. Patented June 24, 1902.

G. F. HUTCHINS.

REGISTER.

(Application filed Mar. 26, 1902.)

(No Model.)

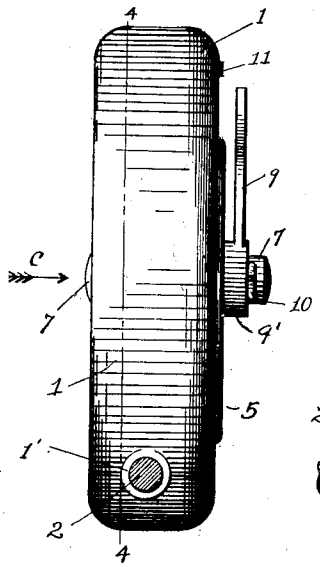


Fig. 2.

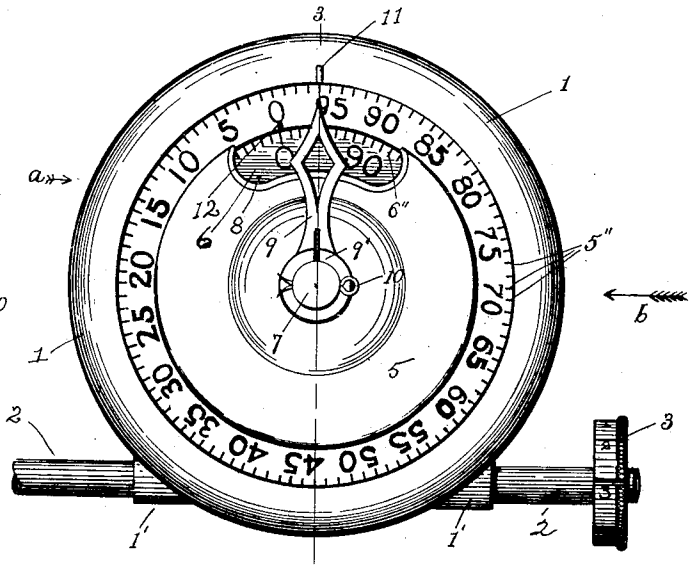


Fig. 1

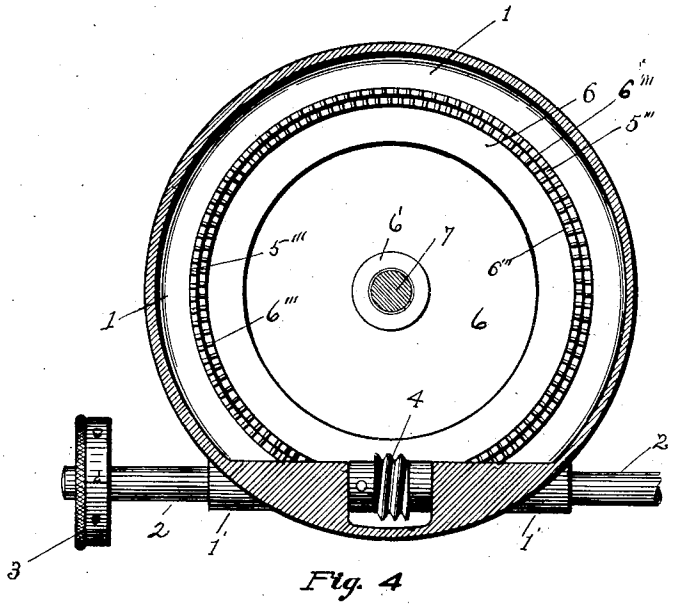


Fig. 4

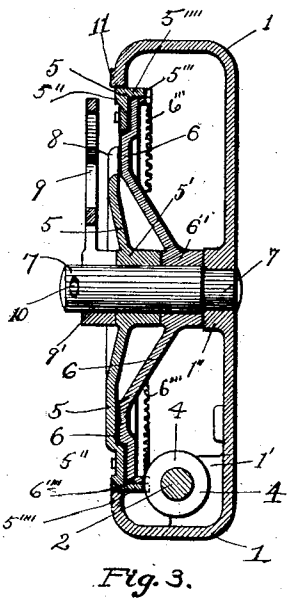


Fig. 3.

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UNITED STATES PATENT OFFICE.

GEORGE F. HUTCHINS, OF WORCESTER, MASSACHUSETTS, ASSIGNOR TO CROMPTON & KNOWLES LOOM WORKS, OF WORCESTER, MASSACHUSETTS, A CORPORATION OF MASSACHUSETTS.

REGISTER.

SPECIFICATION forming part of Letters Patent No. 703,270, dated June 24, 1902.

Application filed March 26, 1902. Serial No. 100,034. (No model.)

To all whom it may concern:

Be it known that I, GEORGE F. HUTCHINS, a citizen of the United States, residing at Worcester, in the county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Registers, of which the following is a specification.

My invention relates to a register or a device for measuring and indicating the length of fabrics or materials as they are manufactured on looms or other machines or for indicating the number of revolutions of a shaft or wheel, &c.

My register in measuring and indicating the length of fabrics, &c., woven on a loom is adapted to be attached to or connected with a roll over which the fabric passes and automatically measure and indicate the number of yards of fabric made on the loom or other machine as the loom or the machine operates.

The object of my invention is to provide an automatic register or device of simple and compact construction and in which the operative parts will all be assembled and concealed within a case of small dimensions which will not be accessible to the operator; and my invention consists in certain novel features of construction of my register, as will be hereinafter fully described.

Referring to the drawings, Figure 1 is a front view of a register embodying my improvements. Fig. 2 is an edge view looking in the direction of arrow *a*, Fig. 1. Fig. 3 is a central vertical section on line 3 3, Fig. 1, looking in the direction of arrow *b*, same figure; and Fig. 4 is a vertical section on line 4 4, Fig. 2, looking in the direction of arrow *c*, same figure.

In the accompanying drawings, 1 is the case or shell of the register, preferably made of metal and of circular shape, as shown. On one edge and in the lower part of the case 1 are bearings 1′ for a driven shaft 2, which may be geared to a roll over which the fabric passes before it is wound on the winding-up roll of a loom or other machine. The proportions of the gearing for the shaft 2 are preferably such that the shaft 2 revolves once for every yard of fabric or material which passes over the roll geared to the shaft 2.

A thumb or fractional wheel 3 is mounted on the end of the shaft 2, having in this instance its periphery graduated or divided into eight parts, each graduation or part representing one-eighth of a yard to allow of the reading of eighths of a yard.

Fast on the shaft 2 is a worm 4, which meshes with the teeth on two disks or wheels 5 and 6 to rotate said wheels. The teeth 5‴ and 6‴ on the disks or wheels 5 and 6, respectively, are preferably formed on an inwardly-extending annular rim or flange 5⁗ and 6⁗, respectively, on the periphery of the wheels 5 and 6. The teeth 5‴ and 6‴ extend in a direction parallel to the axis of rotation of the wheels 5 and 6 and overlapping each other engage the side of the worm 4, as shown in Figs. 3 and 4. By this construction the parts of the register are more compact and the worm 4 is brought up within the case 1 in substantially the same horizontal plane as the outer edges of the disks or wheels 5 and 6.

The hubs 5′ and 6′, respectively, of the two wheels 5 and 6 are loosely mounted on a stud 7, riveted or otherwise secured at its inner end in a boss 1″ within the case 1. (See Fig. 3.) The outer wheel 5 has in this instance on its outer face one hundred graduations or marks 5″, numbered from "0" to "95," and on its inner surface one hundred teeth 5‴, corresponding to the number of graduations 5″ on its face. The inner wheel 6 has in this instance on its outer face, which in this instance is partially exposed through an opening 8 in the face of the wheel 5, (see Figs. 1 and 2,) ninety-nine graduations or marks 6″, numbered from "0" to "95," or one less than the wheel 5. On the inner surface of the wheel 6 are ninety-nine teeth 6‴, corresponding to the number of graduations 6″ on its face.

A pointer 9 is supported on the front of the stud 7 outside of the wheels 5 and 6, and its split hub 9′ fits closely on said stud and is held thereon by a split pin 10. The pointer 9 may be turned around on the stud 7 to point to any desired graduation 5″ on the

wheel 5 and will remain in its adjusted position.

On the outer upper part of the case 1 there is in this instance a line 11, forming a mark for reading the scale on the wheel 5. The scale on the wheel 5 may also be read from the pointer 9.

The scale on the wheel 6 is in this instance read from a mark or line 12 below the zero-mark on the scale on the wheel 5. (See Fig. 1.)

The operation of my register is as follows: Supposing the zero-mark on the scale on the wheel 5 to be in line with the line 11 on the case 1 and the pointer 9 to be also on said line 11 and the zero-mark on the scale on the wheel 6 to be on the line 12 below the zero-mark on the wheel 5, every revolution of the shaft 2 will through the worm 4 in engagement with the teeth on the wheels 5 and 6 move the wheel 5 one graduation or one point on the scale on said wheel, indicating one yard. The wheel 6 will also be moved one graduation of its scale at each revolution of the shaft 2; but as there are only ninety-nine teeth on the wheel 6, while there are one hundred teeth on the wheel 5, there will be a gradual gain of the wheel 5 on the wheel 6, so that when the shaft 2 has made one hundred revolutions the wheel 5 will have made one complete revolution with the zero-mark opposite the mark "11" on the case 1, indicating one hundred yards. During this same time the wheel 6 will have made one revolution and one graduation on its scale over one revolution—that is, the graduation on its scale to the left of the zero-mark will be in line with the line 12 under the zero-mark on the scale on the wheel 5, which graduation will then represent one hundred yards, and so on, each mark on the scale on the wheel 6 representing one hundred yards, counting from the line 12 on the scale on the wheel 5 up to nine thousand nine hundred yards, while the scale on the wheel 5, counting from the line 11 on the case 1 or from the pointer 9, represents yards, and one complete revolution one hundred yards, making a total of ten thousand yards. The graduations on the thumb-wheel 3, as above stated, indicate eighths of a yard, or one-eighth of the revolution of the shaft 2.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A register comprising in its construction, a case, two disks or wheels rotatably supported within said case and having overlapping and inwardly-turned peripheral flanges, said inwardly-turned flanges being provided with an unequal number of teeth, a driven shaft provided with a worm also supported within the case and to the rear of the disks or wheels, said worm being in engagement with the teeth on the overlapping inturned flanges of the disks or wheels.

2. A register, comprising in its construction a case, a stud supported within said case, two disks or wheels rotatably supported on said stud within the case and each having an inwardly-turned flange, said flanges overlapping each other, and provided with teeth parallel to the axes of said disks or wheels, a driven shaft provided with a worm also supported within said case in rear of the disks or wheels, said worm being in engagement with the teeth on the overlapping inturned flanges of the disks or wheels, whereby the parts are compactly arranged and all within a single case.

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