(No Model.) 2 Sheets—Sheet 1.

M. LA FOUNTAIN, Jr.

CLOTH REEL.

No. 565,466. Patented Aug. 11, 1896.

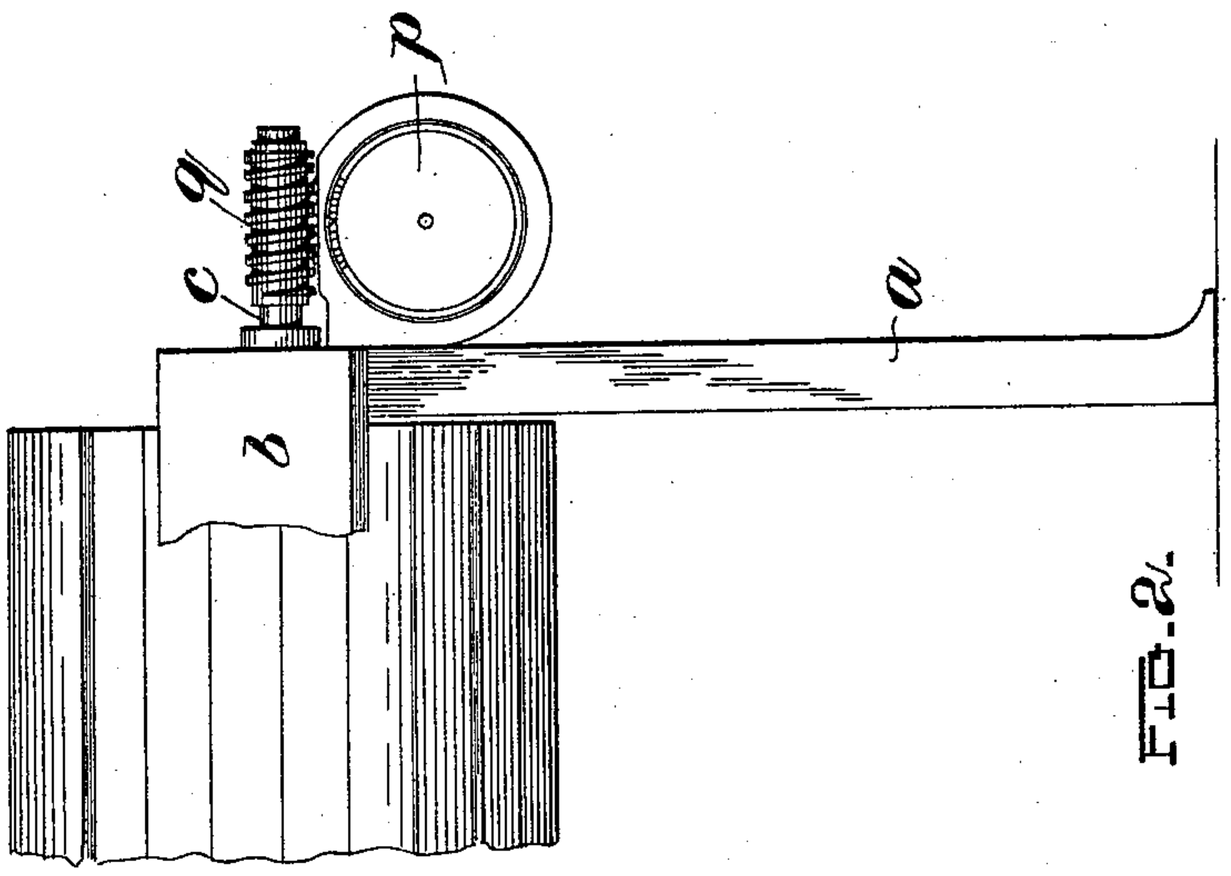

FIG. 2.

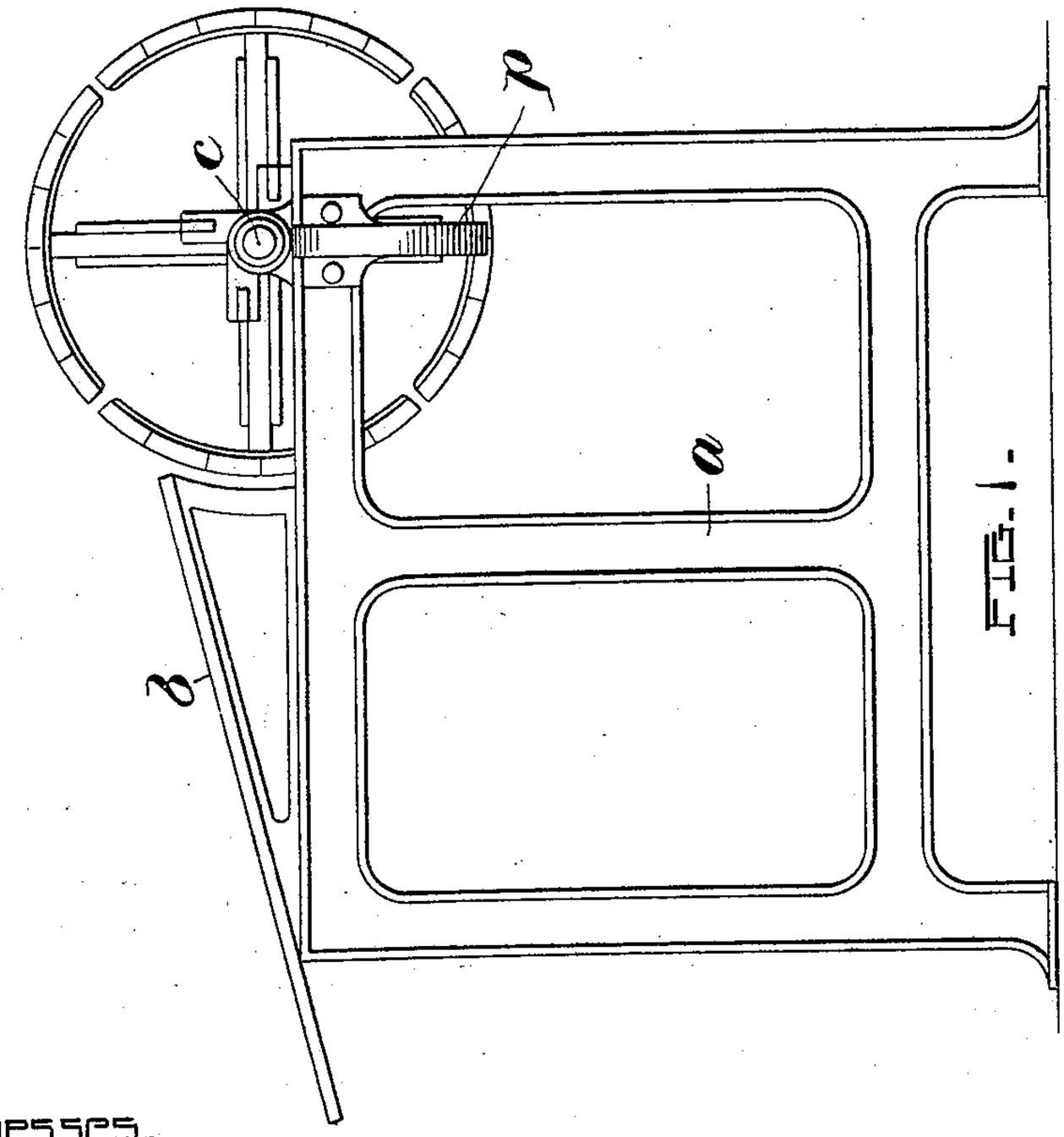

FIG. 1.

Witnesses.
Arthur J. Laudell
C. C. Stocker

Inventor.
M. La Fountain jr
by A. W. Crossley
his atty

(No Model.) 2 Sheets—Sheet 2.

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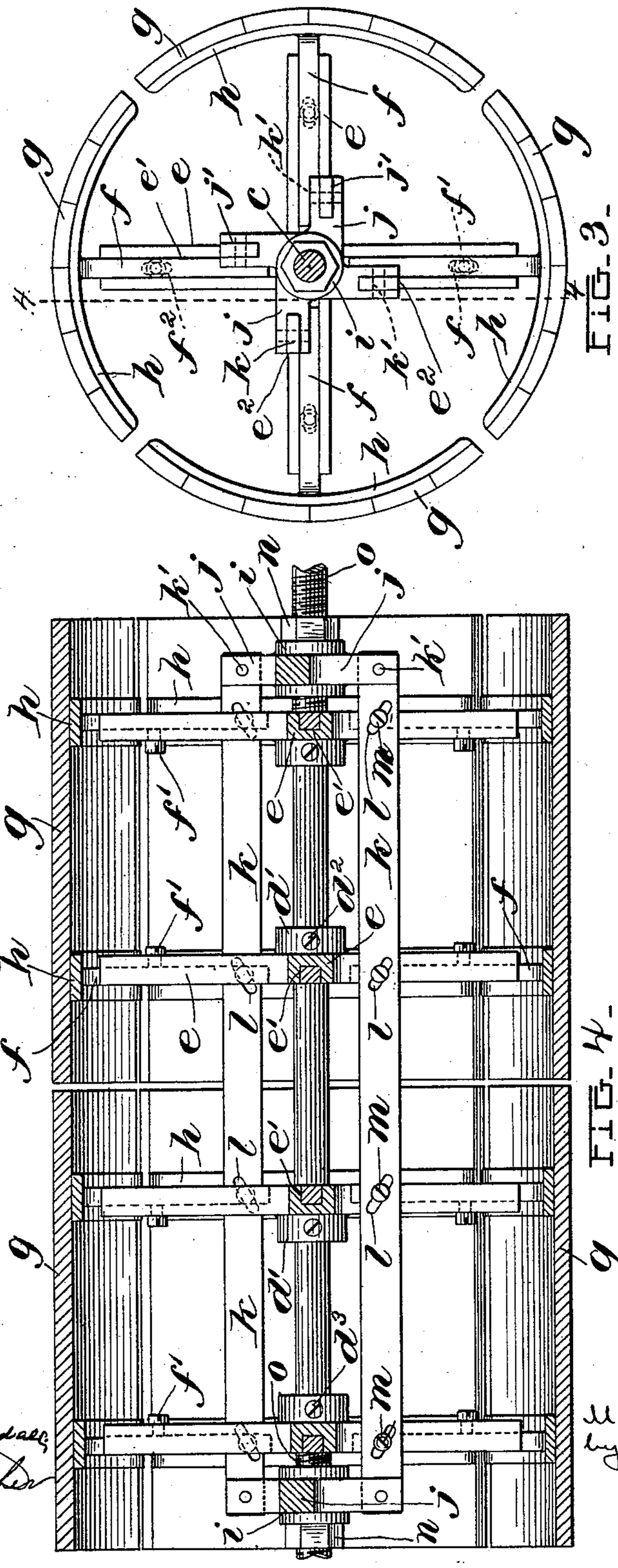

FIG. 3.

FIG. 4.

Witnesses.
Arthur J. Randall
C. C. Stecher

Inventor.
M. La Fountain jr
by A. W. Rossley
his atty.

UNITED STATES PATENT OFFICE.

MAXIM LA FOUNTAIN, JR., OF SPRINGFIELD, VERMONT.

CLOTH-REEL.

SPECIFICATION forming part of Letters Patent No. 565,466, dated August 11, 1896.

Application filed January 5, 1895. Serial No. 533,985. (No model.)

To all whom it may concern:

Be it known that I, MAXIM LA FOUNTAIN, Jr., of Springfield, in the county of Windsor and State of Vermont, have invented certain new and useful Improvements in Cloth-Measuring Machines, of which the following is a specification.

This invention relates to certain new and useful improvements in machines for measuring cloth. It is now more or less common to use revolving cylinders, over which the cloth passes at the surface speed of the cylinders, there being a recording device attached to the latter for registering the number of yards in the fabric; but in using such measuring-cylinders I have found that the correct number of yards is frequently not registered, for the reason that some kinds of fabric will stretch more than others, and that therefore a cylinder must be provided which can be adjusted as to its circumferential length in order to compensate for the additional stretch of the fabric. This has been done in some cases by splitting the exterior rings of the cylinder at a single point on a line parallel to its axis and utilizing adjusting devices for separating the contiguous ends of the rings. But such a construction is more or less defective, in that the rings are not at all times concentric to the axis of the revolving cylinder, thereby causing the latter to rotate unevenly.

My invention therefore consists in splitting the peripheral shell of the measuring-cylinder into two or more independent segments and combining with the latter means for simultaneously adjusting them radially relatively to the axis of the cylinder.

This invention further consists in the various details of construction which will be hereinafter more fully described, and set forth in the claims.

Reference is to be had to the annexed drawings, and to the letters marked thereon, forming a part of this specification, the same letters designating the same parts or features, as the case may be, wherever they occur.

In the drawings, Figure 1 is an end view of a portion of a machine sufficient to illustrate my invention. Fig. 2 is a front elevation of the same, part of the machine being broken away. Fig. 3 is an end view of the measuring-cylinder enlarged. Fig. 4 is a section on the line 4 4, Fig. 3.

The revoluble measuring-cylinder may be mounted upon a machine of any type or may be combined with other devices, but for the purposes of illustration I have shown it as mounted in bearings on a frame having end standards *a*, of any suitable shape and braced together in any convenient way. Upon the frame I provide, if desired, a guide *b* for the traveling fabric as it is being fed to the cylinder.

The cylinder itself is supported upon and driven by a main shaft *c*. Upon this shaft *c* are rigidly mounted a series of spiders, preferably having elongated hubs *d'* fastened to the shaft by set-screws d^2. The radial arms *e* of the spiders are formed with guides or grooves *e'*, in which bars *f* slide radially to the axis of the shaft *c*. Each of the said bars *f* is retained in its guide *e'* by means of a bolt or set-screw *f'*, which passes through a slot f^2 in the radial spider-arms *e*. Upon each of these radial arms *f* is supported one section of the cylindrical shell, the shell in this case being split longitudinally into four sections or segments *g g*. Each arm *f* is cast or provided at its outer end with laterally-extending curved bars or braces *h*, to which a section or segment *g* is directly secured by screws, rivets, or otherwise.

It will be clearly understood that by simultaneously moving the bars *f f* outward or inward, as the case may be, the cylinder is varied as to its circumferential length, it at the same time preserving its concentricity relatively to the supporting and driving shaft. For accomplishing this purpose, namely, the simultaneous adjustment of the bars *f*, the following devices are employed: Upon the shaft *c*, at points outside the end spiders *d d*, I loosely mount supplemental spiders *i i*, having outwardly-extending arms *j j*, which are tangential to a circle described about the axis of the shaft. Each arm *j* is provided at its outer end with an open slot *j'* to receive the end of one of the longitudinally-arranged bars *k k*, which are secured in place by bolts or screws *k' k'*.

The spider-arms *e* are cut away, as at e^2, so

that the bars *k k* can lie close to the radially-sliding bars *f*, the spider-arms *j* being tangential for this purpose.

The two diametrically-opposite bars *k k* are provided with a series of converging slots *l l*, through which set-screws or bolts *m* pass, being screwed at their inner ends into the radially-sliding bars *f*. Thus it will be seen that when the bars *k* are moved in the direction of the arrow in Fig. 4 the bars *f* are moved simultaneously outward, and when the bars are moved in the other direction the bars *f f* are moved radially inward.

For adjusting the bars *k k* longitudinally of the shaft *c*, I employ nuts or taps *n n*, which bear against the outer ends of spiders *i i*, and which can be screwed backward and forward along shaft *c*, which is threaded at *o o* for this purpose.

The shaft *c* is connected to some recording device, one being conventionally shown at *p*, it being in this case operated by a worm *q* on said shaft *c*. The manner of adjusting the sections *g* is therefore quite simple. When cloth which stretches to a great degree is to be measured, the nuts *n n* are screwed along shaft *c* in the direction of the arrow. This forces spiders *i i* in the same direction, the inner walls of slots *l l* acting as wedges to force the screws *m* outward radially and with them the arms *f f*. As the arms *f f* move radially outward the sections or segments *g g* are separated and moved outwardly, thereby increasing the circumferential length of the cylinder. The movements of all of the parts are reversed when it is desired to reduce the cylinder to its normal radius.

It will be understood that I do not limit myself to all the details shown, as many changes may be made without departing from the spirit and scope of the invention. Thus, for instance, other means may be employed for moving the radial arms outward, or instead of using sections or segments *g* with continuous cylindrical surfaces longitudinal separated slats may be utilized.

It will be seen from the above description that the cylinder segments or sections *g* may be regarded as secured upon split rings *h*, and it will be understood that the rings may be split into any number of parts—two, three, or more—there being a corresponding radially-moving arm *f* for each ring-segment; and if slats, which I regard as the full equivalent of the cylinder-segments with continuous surfaces, be used, they can be secured to the rings in any desired way.

When I use the term "cylinder-segments" or "cylinder-sections," I wish to be understood as meaning segments or sections either having a continuous surface or composed of a series of parallel slats.

Having thus explained the nature of the invention and described a way of constructing and using the same, though without attempting to set forth all of the forms in which it may be made, or all of the modes of its use, it is declared that what is claimed is—

1. A cloth-measuring cylinder, comprising in its construction, a shaft, spiders on said shaft, radially-movable bars mounted in the spiders, bars longitudinal of the shaft for shifting the said radially-movable bars, and spiders for the longitudinal bars, having supporting-arms tangential to a circle described about the axis of the shaft.

2. A cloth-measuring cylinder comprising a plurality of cylindrical sections, a series of supporting-rings split into segments, radially-movable bars for supporting said rings, and a frame for adjusting said bars consisting of bars parallel with the shaft and having wedges for engaging said radially-movable bars, and spiders for supporting the parallel bars, having arms tangential to a circle described about the axis of the shaft.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 24th day of December, A. D. 1894.

MAXIM LA FOUNTAIN, JR.

Witnesses:

GEO. H. WHITCOMB,

M. L. LAWRENCE.