

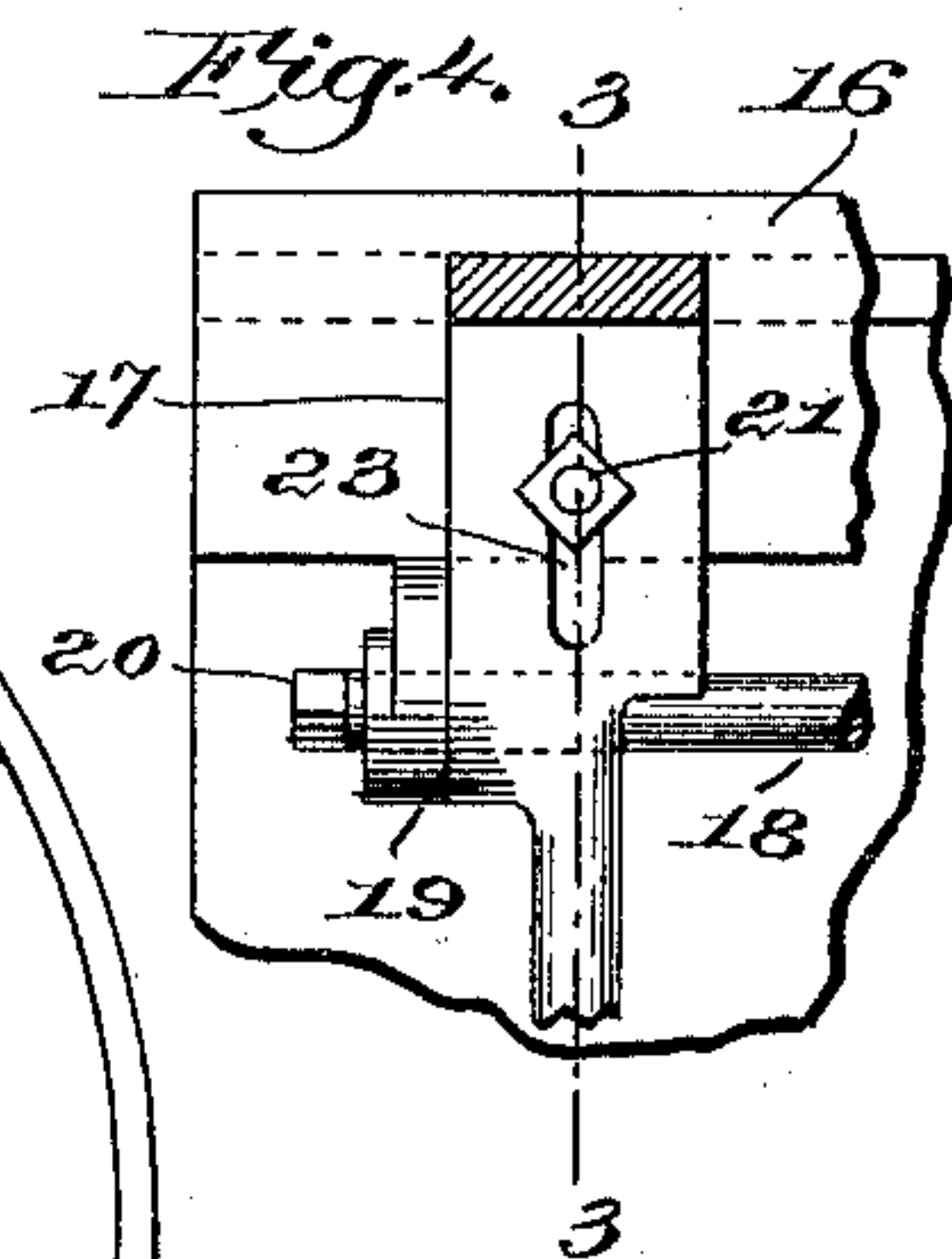
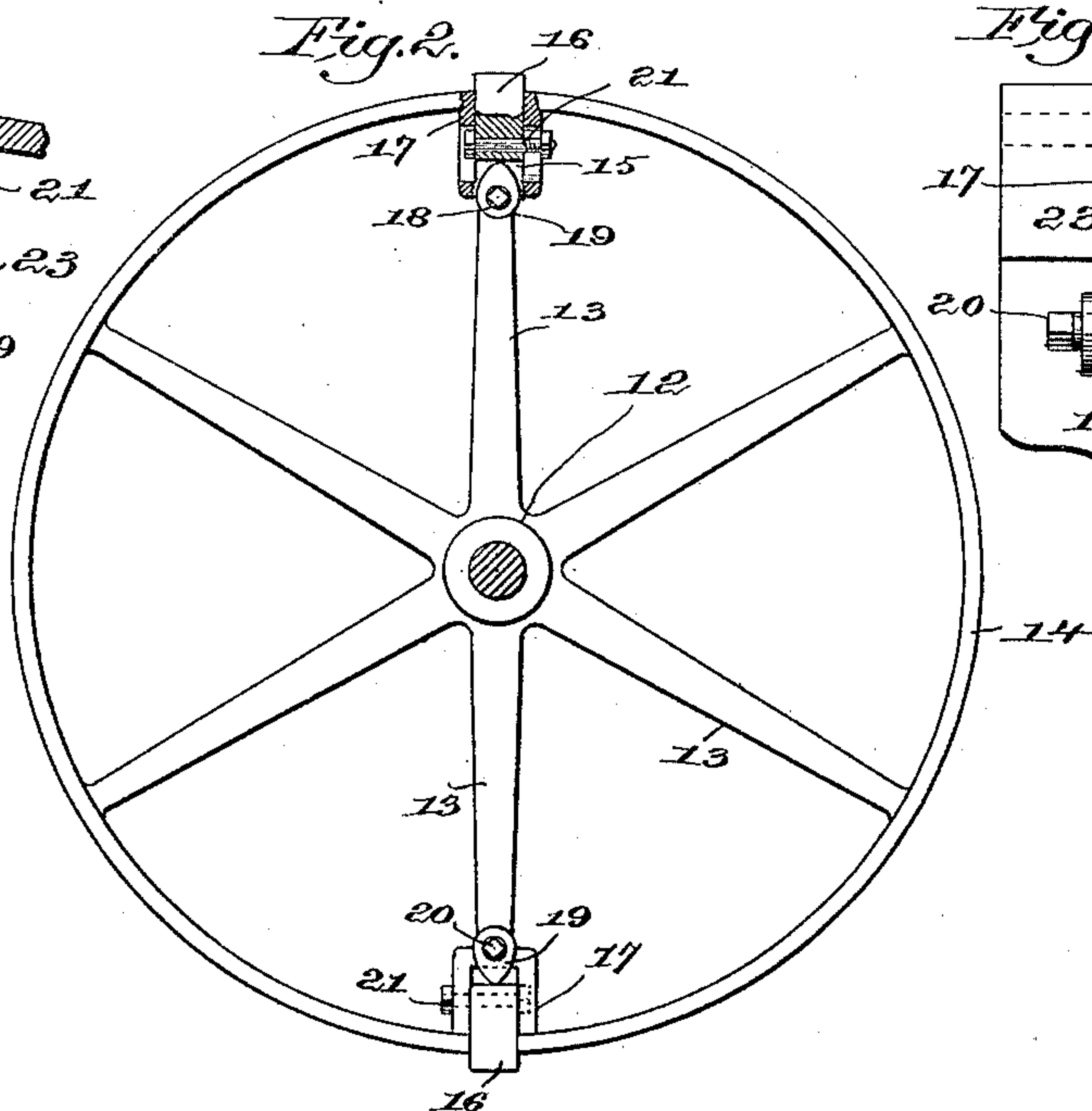
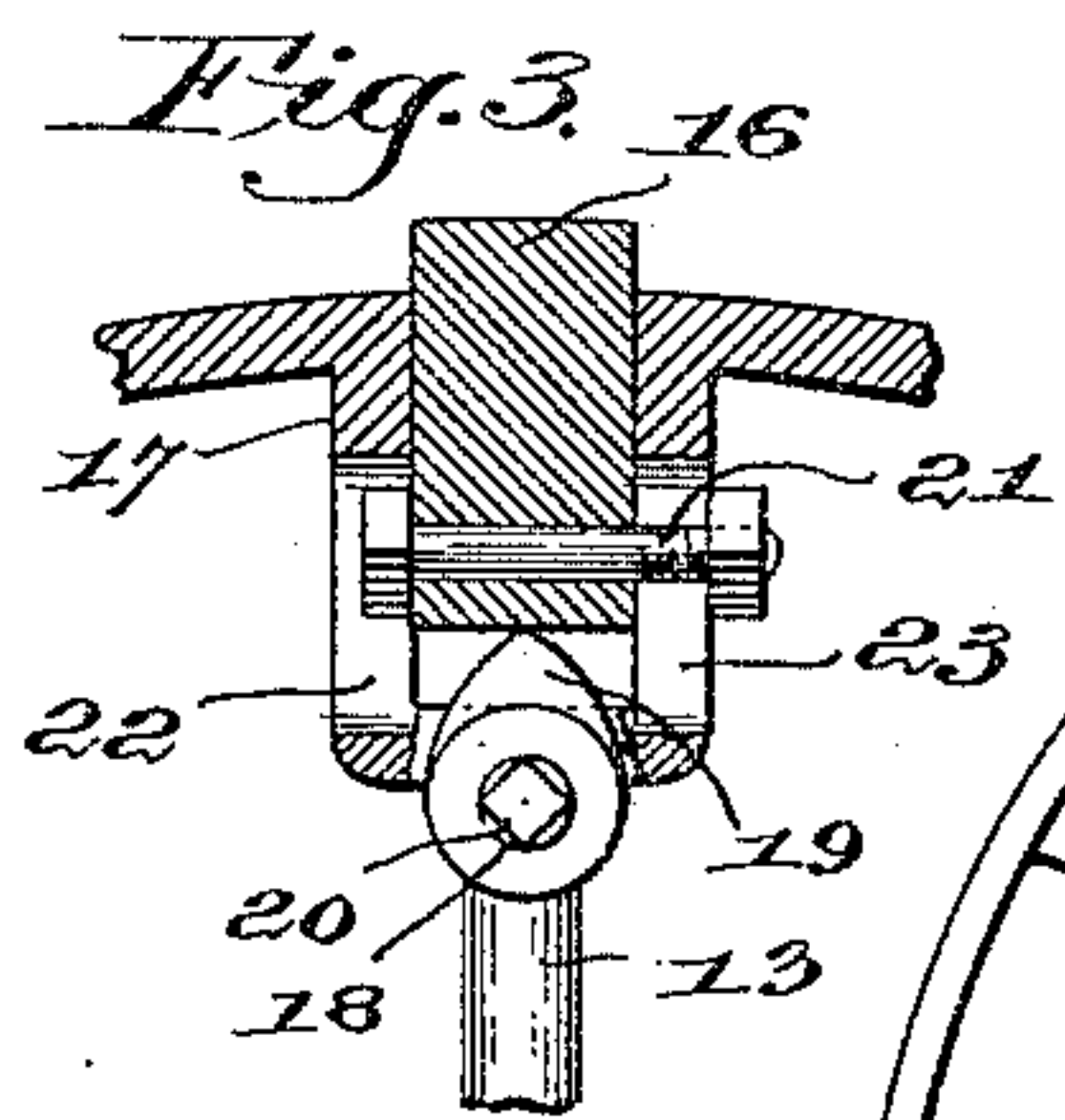
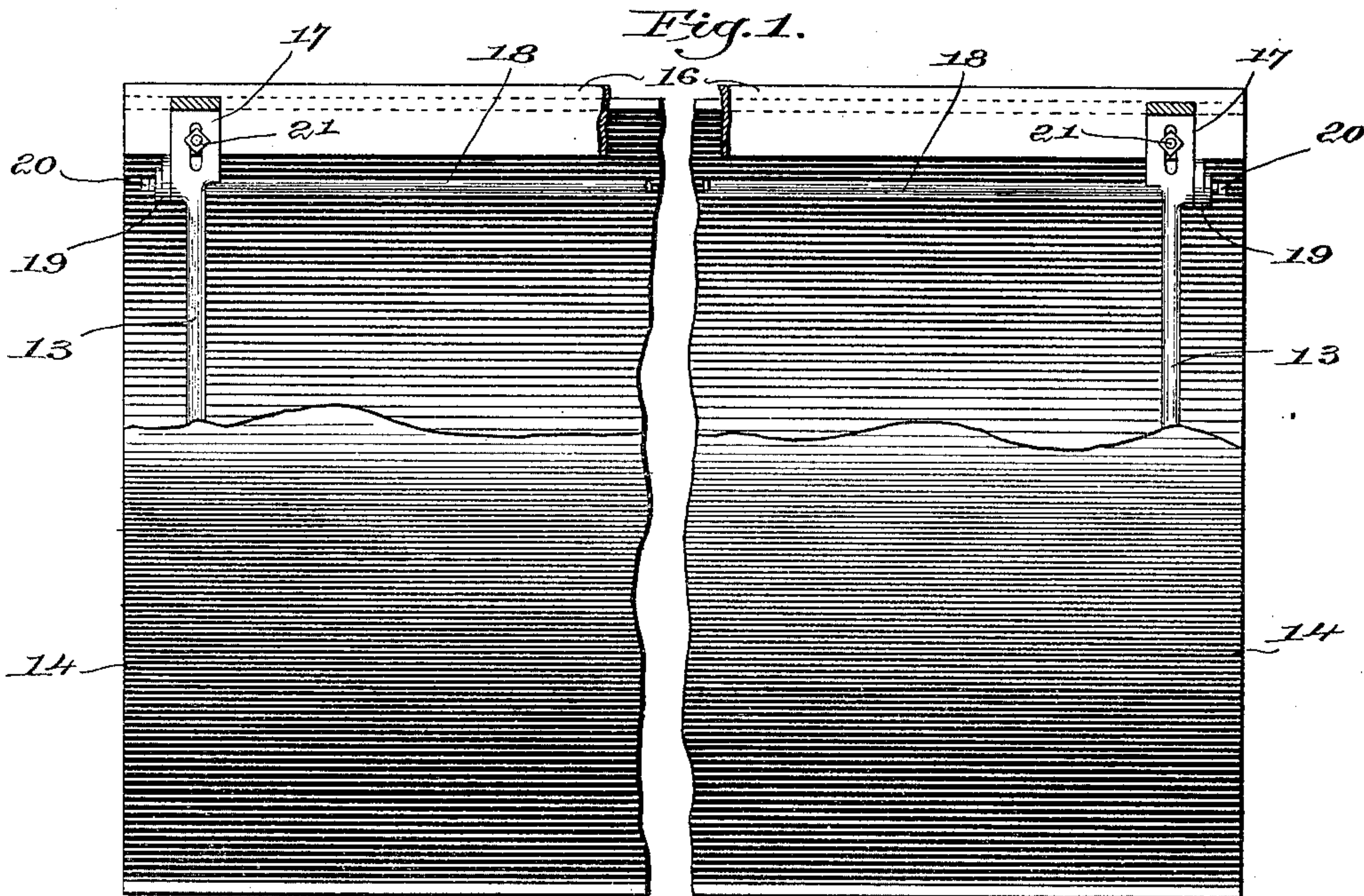
No. 688,143.

Patented Dec. 3, 1901.

J. E. WINDLE.  
CLOTH MEASURING ROLL.

(Application filed Aug. 1, 1900.)

(No Model.)



Witnesses.  
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# UNITED STATES PATENT OFFICE.

JOHN E. WINDLE, OF NORTH GRAFTON, MASSACHUSETTS.

## CLOTH-MEASURING ROLL.

SPECIFICATION forming part of Letters Patent No. 688,143, dated December 3, 1901.

Application filed August 1, 1900. Serial No. 25,509. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN E. WINDLE, a resident of North Grafton, county of Worcester, State of Massachusetts, have invented an Improvement in Cloth-Measuring Rolls, of which the following description, in connection with the accompanying drawings, is a specification, like figures on the drawings representing like parts.

10 This invention relates to cloth-measuring rolls or drums; and the object of the invention is to provide a simple device of this character especially adapted for accurately measuring cloth notwithstanding variations in the length of the same due to stretching or from other causes.

15 The device constituting the subject-matter of this invention and represented in one simple embodiment thereof in the accompanying drawings is in the nature of an improvement upon the machine set forth in Letters Patent No. 507,300, granted to me October 24, 1893, and it includes as one of its features a roll having means for varying its working periphery to compensate for any inaccuracy in the said measuring-roll, and I accomplish this by providing the said roll in its periphery with an adjustable member, and also provide means to effect the adjustment of said member and to hold the same in any desired position. In some cases the outer or working edge of the adjustable member will be in the plane of the periphery, so that the outer surface of the roll will be in effect a continuous or unbroken one.

20 In the drawings, Figure 1 is a front elevation of a measuring-roll involving my improvements in one convenient form thereof, the upper part of the roll being broken away and the middle portion thereof being removed to permit showing the roll upon an enlarged scale. Fig. 2 is an elevation of the roll as seen from the left hand, Fig. 1. Fig. 3 is a transverse section taken in the line 3-3, Fig. 4, and looking toward the right; and Fig. 4 is an elevation as seen from the right in Fig. 3.

25 The roll or drum represented includes in its construction a central hub or sleeve, as 12, adapted to receive a shaft, and from which spokes radiate at opposite ends thereof, each spoke being denoted by 13. The spokes are

joined at the outer ends thereof to the cylindrical body or shell 14, the outer face of which constitutes the working portion of the device, and which may be roughened, as described in the Letters Patent hereinbefore mentioned, so that the cloth in contact with said roughened periphery can be drawn at the surface speed of the roll, each rotation of said cylinder being indicated upon a suitable register.

30 Cloth varies considerably as to its elasticity, one kind stretching much more than another when being fed in contact with a measuring-roll, and therefore to compensate for these irregularities and to secure in all cases accurate measurements I provide a member carried by the roll and means to adjust its outer edge more or less toward and from the periphery of the roll in accordance with the variation to be compensated for, such adjustable member being ordinarily and conveniently seated in a recess in the cylindrical shell 14.

35 When measuring goods which stretches considerably, I set the adjustable member with its outer edge some distance from the periphery of the roll, (this distance varying according to the elasticity of the goods,) so that the working periphery of said roll has a greater lineal measurement than normal, this greater lineal measurement corresponding to the increased length of the cloth as it stretches when passing over the measuring-roll, thus accurately measuring the cloth.

40 The shell 14 (see Fig. 2) is represented as recessed, as at 15, at diametrically opposite sides thereof, and the recesses receive in them bars or blades 16, adjustable radially with respect to the roll, so as to project more or less beyond the periphery of the cylindrical shell 14. When the outer edges of these blades are in the plane of the periphery of the roll, said periphery presents in effect a continuous unbroken surface.

45 It will be seen upon inspection of Fig. 1 that the bars or blades 16 extend entirely across the roll. While I have shown two of these adjustable bars or blades, it is evident that this is not essential, and it is likewise apparent that if necessity requires it a greater number can be used, this being simply within



the discretion of the person employing the roll. The blades 16 are seated in bifurcations or yokes, as 17, formed on the outer ends of aligned spokes 13, the blades being snugly received in the recess 15 and within the bifurcations or yokes 17, so as to prevent any side motion, although the fit should be sufficiently free as to permit ready adjustment of the blades. While this construction constitutes convenient bearings for the blades, it is evident that it may be varied within the scope of the claims, and the same statement applies with equal force to other features of the invention.

Any convenient means may be employed for adjusting the blades 16 with respect to the periphery of the roll. For this purpose I have shown them operated by cam mechanism, now to be described, said cam mechanism being independent of the roll—i. e., not forming a part of the roll. The aligned spokes 13, which have the seats for the adjustable bars 16, have bearings to receive shafts, as 18, in proximity to the inner sides of the bars, and each shaft is represented as having cams, as 19, arranged outside of the spokes 13 and the working faces of which are adapted to engage the inner edges of the bars 16. The cams can be secured to the shafts for rotation therewith in any convenient manner, and said shafts are illustrated as having at their extremities squared portions, as 20, which can be embraced by a wrench to turn the same, so as to operate the cams 19 in such manner as to force the blades 16 outward. It is evident that the blades may be adjusted separately, and if the extreme adjustment of one is not sufficient to compensate for the stretch that may be in the goods the other one can be adjusted until the object is accomplished. After rocking the working faces of the cams away from the inner edges of the bars 16 the latter can be forced inward by hand to carry their outer edges toward the periphery of the roll.

While in some cases the cams might be relied upon to hold the bars 16 in their outer positions, still I have illustrated more positive means for this purpose, the same consisting of bolts, as 21, adapted to pass through longitudinal slots, as 22 and 23, in the branches of the yokes or bifurcations 17 and also transversely through the blades 16 at opposite ends thereof. (See Fig. 3.) The bolts move with the bars.

The slots 22 are somewhat wider than the slots 23, so that the former can receive the heads of the bolts, while the narrower slots 23 prevent the entrance of the nuts of said bolts thereinto, so that the said nuts can be tightened up against the bifurcations 17.

In Fig. 3 the blade 16 is shown at the extreme limit of its adjustment. To force the same back into its seat the nuts of the bolts 21 will be loosened and the shaft 18 will be turned by a wrench or other suitable tool, thereby carrying the working portions of the

cams 19 away from the inner edges of the blade 16, whereby the latter can be forced inward the desired distance. When adjusted, the nuts will be tightened to firmly hold the same.

The invention, as previously set forth, may be modified within the scope of the appended claims.

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

1. A measuring-roll having a shell or periphery an adjustable member the outer edge of which normally forms part of the periphery of the roll, means independent of the roll structure, but carried thereby for positively moving said adjustable member radially outward from the roll, and means to hold said member in any desired position, whereby the lineal measurement of the circumference of the roll may be varied.

2. A measuring-roll, having an adjustable member the outer edge of which is normally flush with the periphery of the roll, said member being movable toward and from the periphery of the roll, a cam to move said member in one direction, and means to hold said member in any desired position.

3. A measuring-roll having a shell and a peripheral recess therein, an adjustable member in said recess the outer portion of which normally forms part of the periphery of the roll, adjusting mechanism independent of the roll structure but carried thereby to positively move the outer edge of said member from the periphery of the roll, and means to positively hold said member in any desired position, whereby the lineal measurement of the circumference of the roll may be varied.

4. A measuring-roll having an adjustable member, the outer edge of which normally is in the circumferential line of the periphery of the roll, adjusting devices independent of the roll structure, but carried thereby for positively moving said adjustable member radially outward from the roll, said adjusting devices operating to maintain the adjustable member in constant parallelism with the axis of the roll, and means independent of the adjusting devices to hold said member in any adjusted position.

5. A measuring-roll, having a peripheral recess extending the entire length of the same, and an adjustable member equaling in length that of said roll and fitted in said recess with its outer edge normally flush with the periphery of the roll, means to move said adjustable member outward radially, and means to hold said member in any adjusted position, whereby the lineal measurement of the circumference of the roll is increased.

6. A measuring-roll having a peripheral recess, an adjustable member in said recess, the outer edge of which is movable toward and from the periphery of the roll, a cam to move said member in one direction, and means to hold said member in a desired position.



7. A measuring-roll having a peripheral recess, an adjustable member in said recess, a seat to receive said adjustable member, having a longitudinal slot, and a bolt carried  
5 by said adjustable member and projecting through said slot.

8. A measuring-roll comprising a hub, a shell, and spokes uniting the hub and shell, certain of the spokes being bifurcated and  
10 the shell having a recess, a bar fitted for adjustment in said recess and between the

branches of said bifucations, a cam to move the bar, and means to hold said bar positive in an adjusted position.

In testimony whereof I have signed my  
15 name to this specification in the presence of two subscribing witnesses.

JOHN E. WINDLE.

Witnesses:

GEO. W. GREGORY,  
LOUIS C. SMITH.