

No. 822,495.

PATENTED JUNE 5, 1906.

A. C. VAN HOUWELING.

GOVERNOR.

APPLICATION FILED APR. 13, 1905.

Fig. 1.

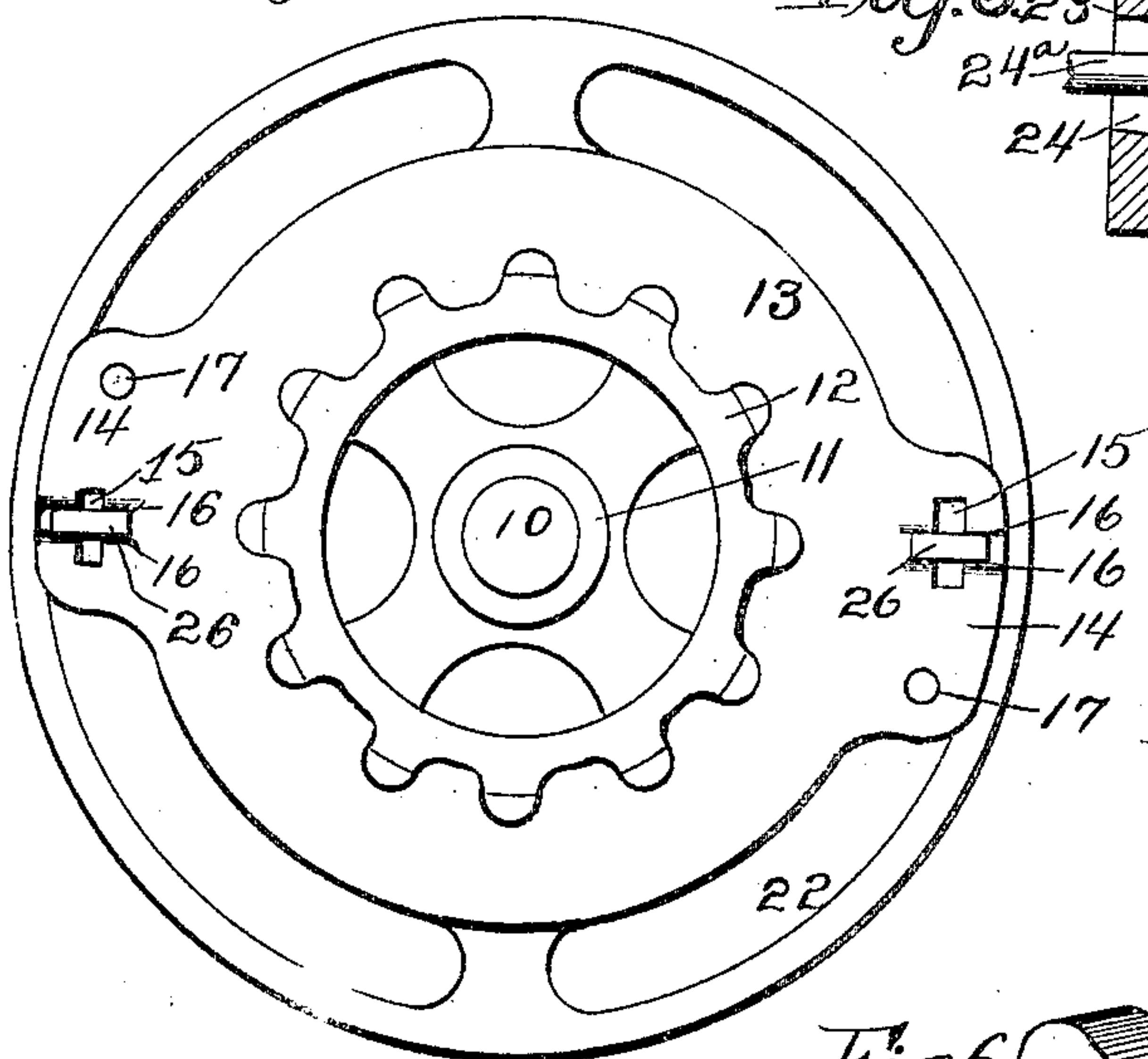


Fig. 523

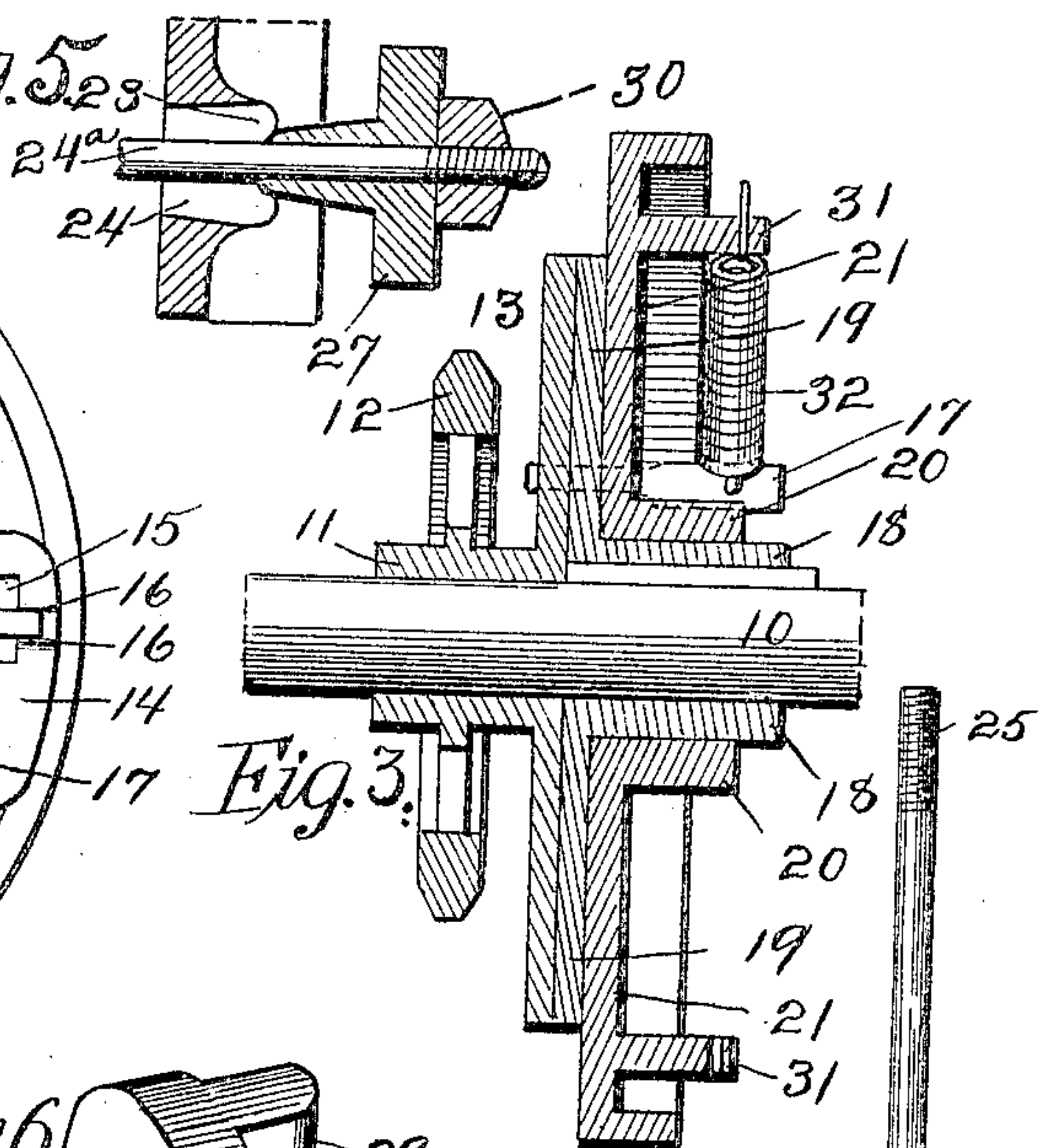


Fig. 3.

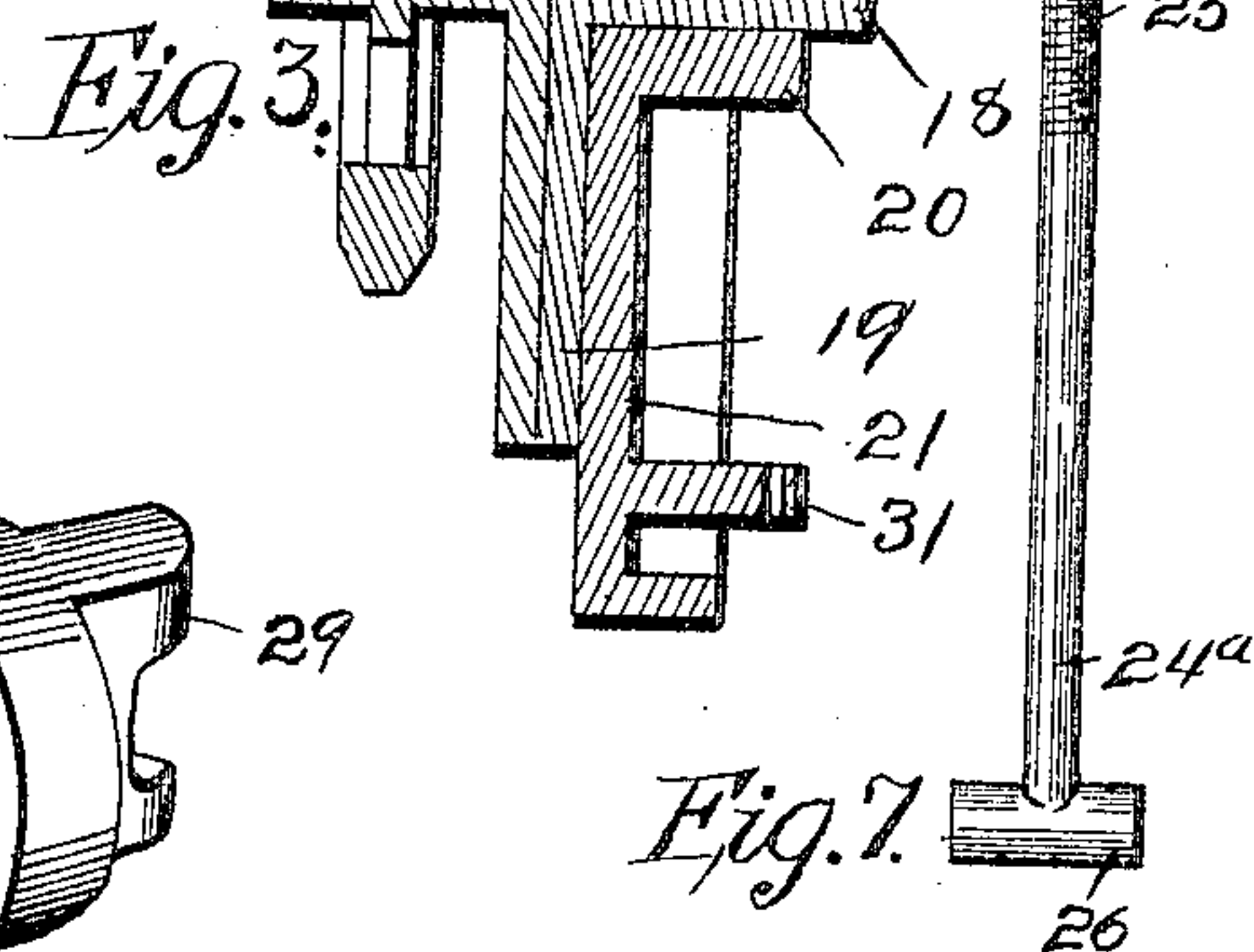


Fig. 6.

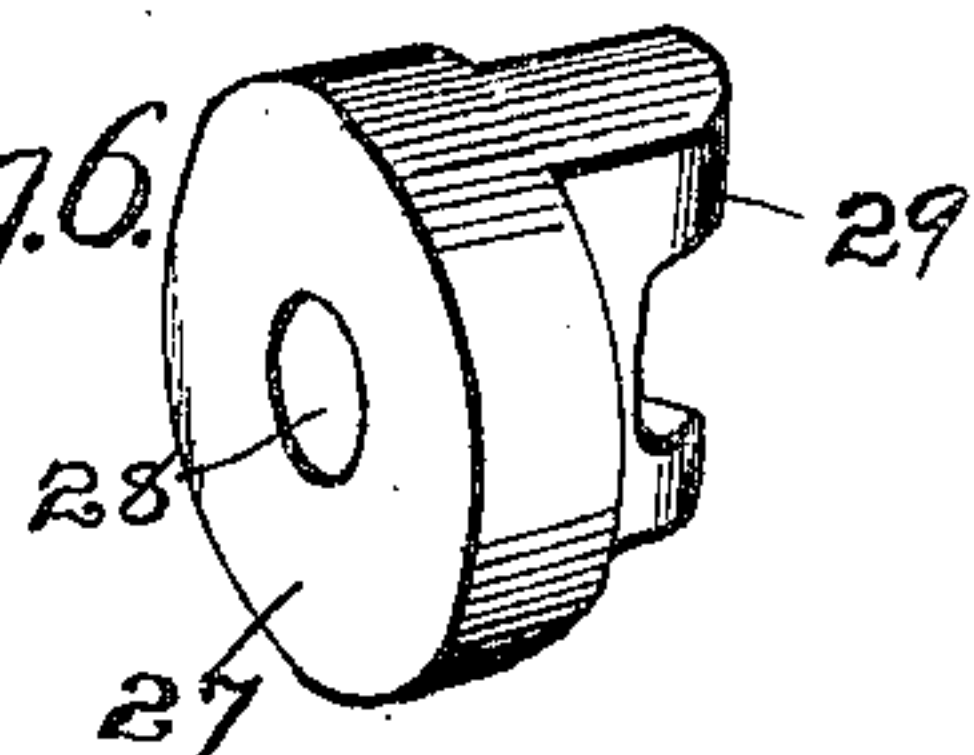


Fig. 7.



Fig. 2.

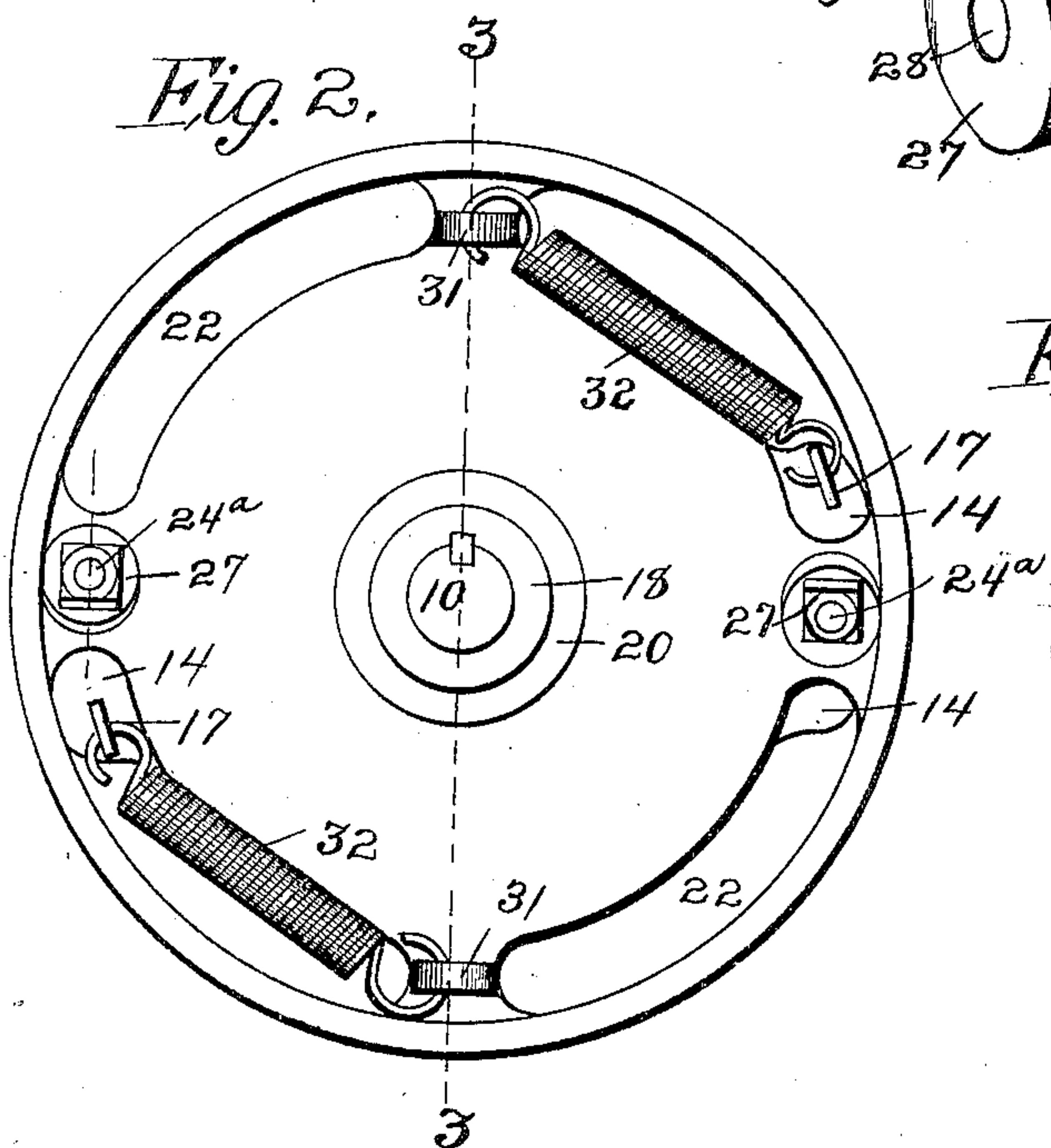
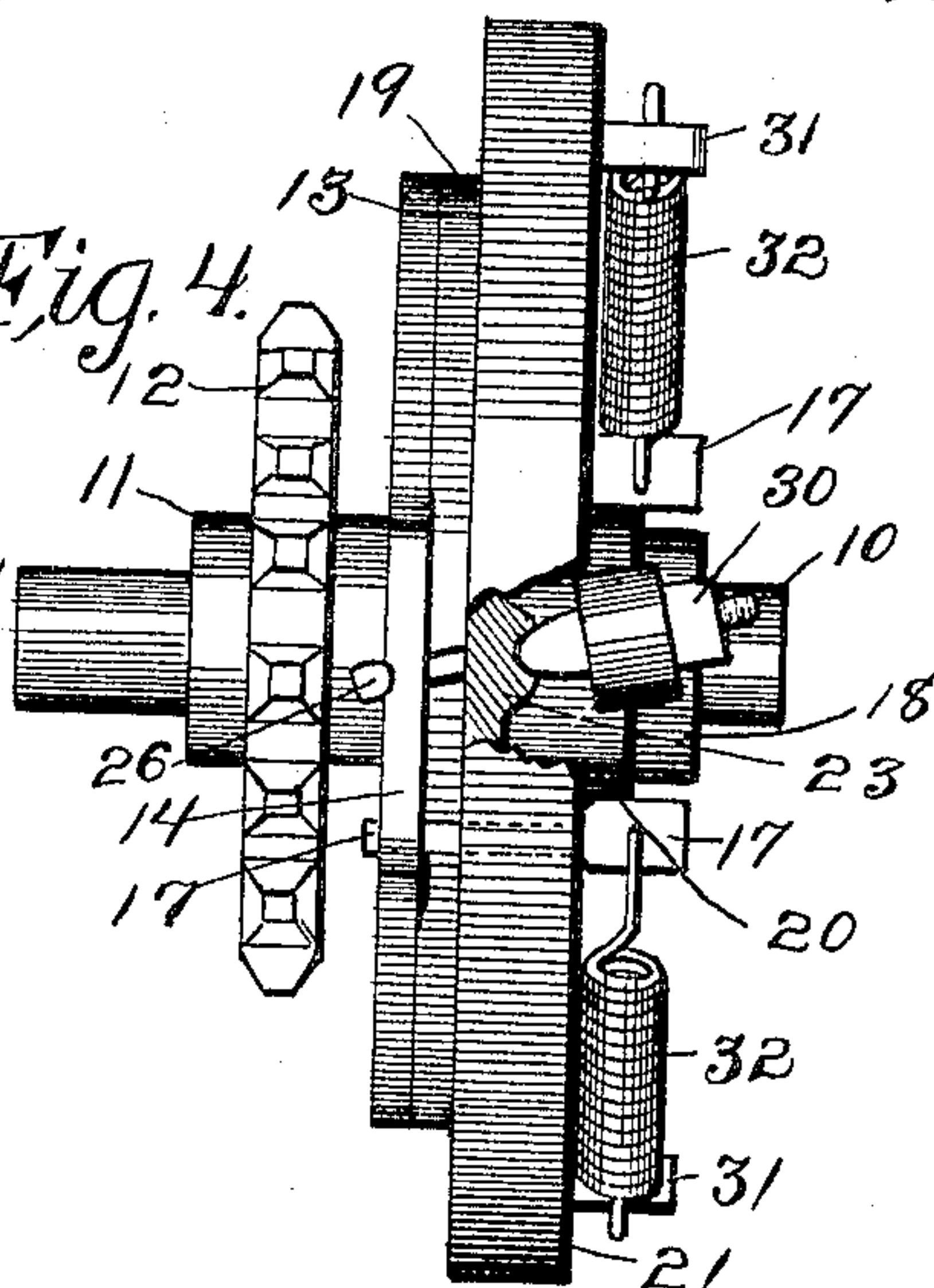


Fig. 4.



Witnesses:

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by Owing Lane Attys

UNITED STATES PATENT OFFICE.

ARTHUR C. VAN HOUWELING, OF PELLA, IOWA.

GOVERNOR.

No. 822,495.

Specification of Letters Patent.

Patented June 5, 1906.

Application filed April 13, 1905. Serial No. 255,455.

To all whom it may concern:

Be it known that I, ARTHUR C. VAN HOUWELING, a citizen of the United States, residing at Pella, in the county of Marion and State of Iowa, have invented a certain new and useful Governor, of which the following is a specification.

The object of my invention is to provide a governor of simple, durable, and inexpensive construction to be connected with a driving-wheel and a driven shaft and whereby the rotary movement of the driving-wheel is normally imparted to the shaft, and by the application of a friction-brake to the friction-wheel of the governor the driving-wheel is freed to rotate independent of the shaft.

My invention consists in the construction, arrangement, and combination of the various parts of the device whereby the objects contemplated are attained, as hereinafter more fully set forth, pointed out in my claims, and illustrated in the accompanying drawings, in which—

Figure 1 shows a side elevation of the complete governor mounted on a driven shaft. Fig. 2 shows a similar view taken from the opposite side. Fig. 3 shows a sectional view on the line 3 3 of Fig. 2. Fig. 4 shows an edge view of the complete governor mounted on a shaft. Fig. 5 shows an enlarged detail sectional view of one of the rockers and its clamp-rod and chair. Fig. 6 shows a detail perspective view of one of the rockers, and Fig. 7 shows a plan view of one of the rocking clamp-rods.

Referring to the accompanying drawings, I have used the reference-numeral 10 to indicate a driven shaft. Loosely mounted on the driven shaft 10 is a hub 11, carrying a sprocket-wheel 12 or other means by which the hub may be rotated. Mounted on the same hub is a disk 13, having a smooth flat face on the side opposite from the sprocket-wheel 12 and also having two outwardly-projecting lugs 14 at diametrically opposite points. In each lug 14 is a slot 15, and at right angles to said slot are the ribs 16 to form a groove between them. On each of said lugs 14 is a rigid arm 17 to project parallel with the shaft away from the sprocket-wheel 12 for purposes hereinafter made clear.

Adjacent to the hub 11 is a second hub 18, keyed to the shaft. This hub is provided with a disk 19, having both surfaces smooth and flat, its diameter being substantially the same as that of the disk 13. Rotatably

mounted upon the hub 18 is a hub 20, having thereon a brake-disk 21, formed with a smooth flat face adjacent to the fixed disk 19. This brake-disk is formed with a series of segmental slots 22 between its periphery and the periphery of the fixed disk 19. The arms 17 project through these slots. Formed on the brake-disk 21 at diametrically opposite points are two chairs 23, each having a concave groove formed therein and also formed with slots 24 in the center of each chair.

The symbol 24^a indicates a rocking clamp-rod having a screw-threaded end 25 and a rounded cross-head 26. Each of said rods is provided with a rocker 27, having a central opening 28, through which the rod 24^a is passed, and having a convex lug 29 to rest in the chair 23. The said rods 24^a are placed in position by first inserting their heads 26 through the slots 15, then turning them at right angles and permitting said heads to rest in the grooves between the ribs 16. The body portions of the rods 24^a then extend across the periphery of the fixed disk and through the slots 24 of the brake-disk, and the rockers 27 are placed on the opposite ends of said rods and secured in position by the nuts 30. Said rods are such a length and so arranged that when they stand substantially parallel with the shaft the disks 13 and 21 may separate far enough to permit the central disk 19 to freely rotate, and said disks 13 and 21 may be turned relative to each other far enough to permit the rods 24^a to stand at an angle relative to a line drawn parallel with the shaft, so that the said disks 13 and 21 will firmly engage the central disk 19 and rotate it with them. I provide for yieldingly holding the two outer disks in such position relative to each other that they will clamp the middle disk firmly between them, as follows: On the brake-disk 21 are two lugs 31, and each of the lugs 31 has attached to it a contractible coil-spring 32, the opposite end of which is attached to one of the arms 17. In this way the resiliency of the springs is exerted in a direction to tilt the rods 24^a at an acute angle relative to a line parallel with the shaft, and thus cause the two outer disks to firmly grip the middle one. It is obvious that if the brake-disk 21 is engaged by a brake-shoe or otherwise retarded in its rotation it will move against the pressure of its springs to position permitting the rods 24 to stand parallel with the shaft, and

thus allow the two outer disks to separate and permit the inner one to stand still, while the two outer ones rotate, and as soon as said brake-disk is released the springs 32 will at once move the two outer disks relative to each other as required to permit the outer disks to move relative to each other and tilt the rods 24^a and clamp the inner disk between them.

10 In practical use and assuming that the sprocket-wheel 12 is being continuously rotated in one direction the springs 32 will hold the disks 13 and 21 in such position relative to each other that the rods 24^a may tilt and the
15 central disk be clamped between the outer ones as required to rotate the shaft 10 in unison with the sprocket-wheel. If a friction-brake is applied to the surface of the friction-disk 21, it will overcome the resiliency of the
20 spring sufficiently to permit the two outer disks to rotate relative to each other to position where the rods 24^a will lie parallel with the shaft, whereupon the said two outer disks may continue to rotate without driving the
25 central disk and its shaft 10. As soon as the brake-disk is released it will permit the springs to act, and thus clamp the central disk. Obviously as the surfaces of the disks that are in contact wear away the nuts 30
30 may be adjusted to take up the wear, so that the disks may always be placed in proper working distance relative to each other.

Having thus described my invention, what I claim, and desire to secure by Letters Patent of the United States therefor, is—

35 1. In a governor, the combination of two clamping members spaced apart and capable of rotation relative to each other, a member to be clamped arranged between them, a
40 spring tending to rotate one of the clamping members relative to the other and means actuated by a rotary movement of one of the clamping members in one direction, relative to the other for forcing them toward each
45 other, said means also permitting the clamping members to release from the member to be clamped when one of the clamping members is rotated relative to the other in opposition to the pull of the spring.

50 2. A central disk, two outer disks, a spring attached to the outer disks tending to rotate them relative to each other, and a clamping device connected to the outer disks, in one position forcing them toward each other and
55 when one outer disk is moved in opposition to the pull of the spring permitting the outer disks to release from the central one.

3. The combination of a shaft, two clamping members loosely mounted on the shaft,
60 means for rotating one of said clamping members, rocking clamping-rods connecting the said members, in one position permitting the members to separate and in another position holding them toward each other, a member to
65 be clamped fixed to the shaft between said

clamping members, and springs normally holding the clamping members in position in engagement with the member to be clamped.

4. A central disk, two outer disks, a spring attached to the two outer disks tending to rotate them in opposite directions and rocking
70 clamping-rods connecting the outer disks, said rods operated by the springs to force the outer disks toward each other.

5. A central disk, two outer disks, a spring attached to the two outer disks tending to rotate them in opposite directions, and adjustable rocking clamping-rods connecting the
75 outer disks, said rods operated by the springs to force the outer disks toward each other.
80

6. The combination of a shaft, two disks loosely mounted on the shaft, means for rotating one of said disks, springs connecting said
85 disks, a disk between the aforesaid ones and fixed to the shaft and two clamping-rods connecting the outer disks, said rods normally inclined by the springs to position where they will force the outer disks into engagement with the central one.

7. The combination with a shaft, a disk loosely mounted on the shaft, means by which the disk may be rotated, a second disk
90 loosely mounted on the shaft, contractible coil-springs disposed circumferentially and connected with both disks, a central disk fixed to the shaft and clamping-rods connecting the two outer disks and capable of rocking
95 movement relative to each, said rods normally moved by the springs to position at an acute angle relative to a line parallel with the shaft and in that position holding the two
100 outer disks into engagement with the central one and when moved to position parallel with the shaft permitting the outer disks to free themselves from the central one.
105

8. The combination of a shaft, a hub loosely mounted on the shaft and formed with a disk and a sprocket-wheel thereon, said disk formed with extensions having slots
110 near its outer ends, a central disk fixed to the shaft and formed with a hub, an outer disk loosely mounted on said hub to engage the central one and formed with a brake-rim and also formed with lugs to project away from the
115 central disk, arms fixed to the first-mentioned disk, contractible coil-springs fixed to the said arms and to the said lugs, two rocking clamping-bars each having a cross-head, said cross-heads capable of passing through
120 the slots in the extensions of the first disk and of forming a rocking connection with said first disk, a rocker attached to each rod and having a rocking connection with the last-mentioned disk and a nut on each rod adjustably holding the rocker in position.

Des Moines, Iowa, March 10, 1905.

ARTHUR C. VAN HOUWELING.

Witnesses:

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JULIA B. SMUTNEY.