

No. 618,359.

Patented Jan. 24, 1899.

F. LAMBERT.
REGISTER.

Application filed July 23, 1898.

(No Model.)

Fig. 1.

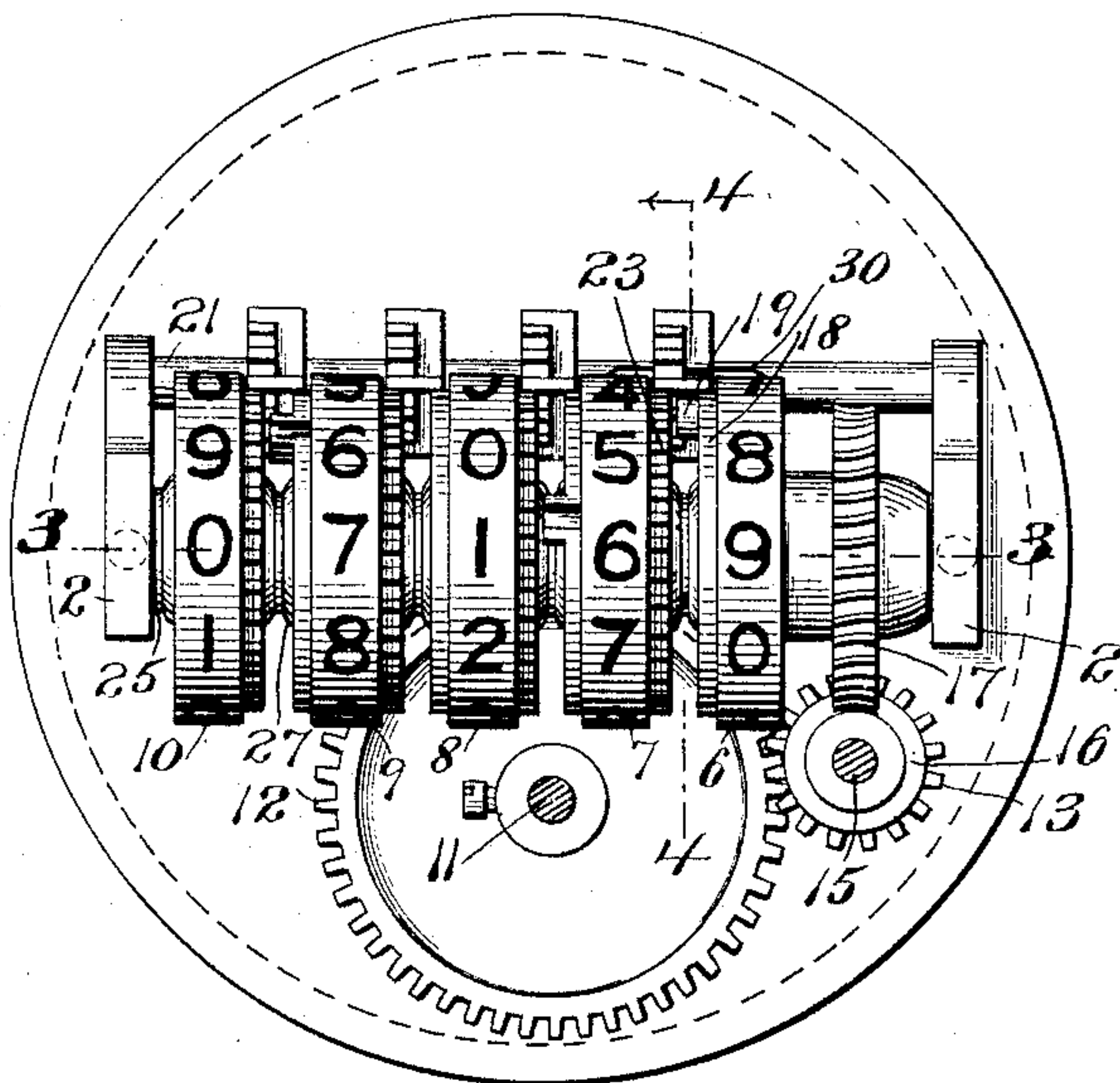


Fig. 2.

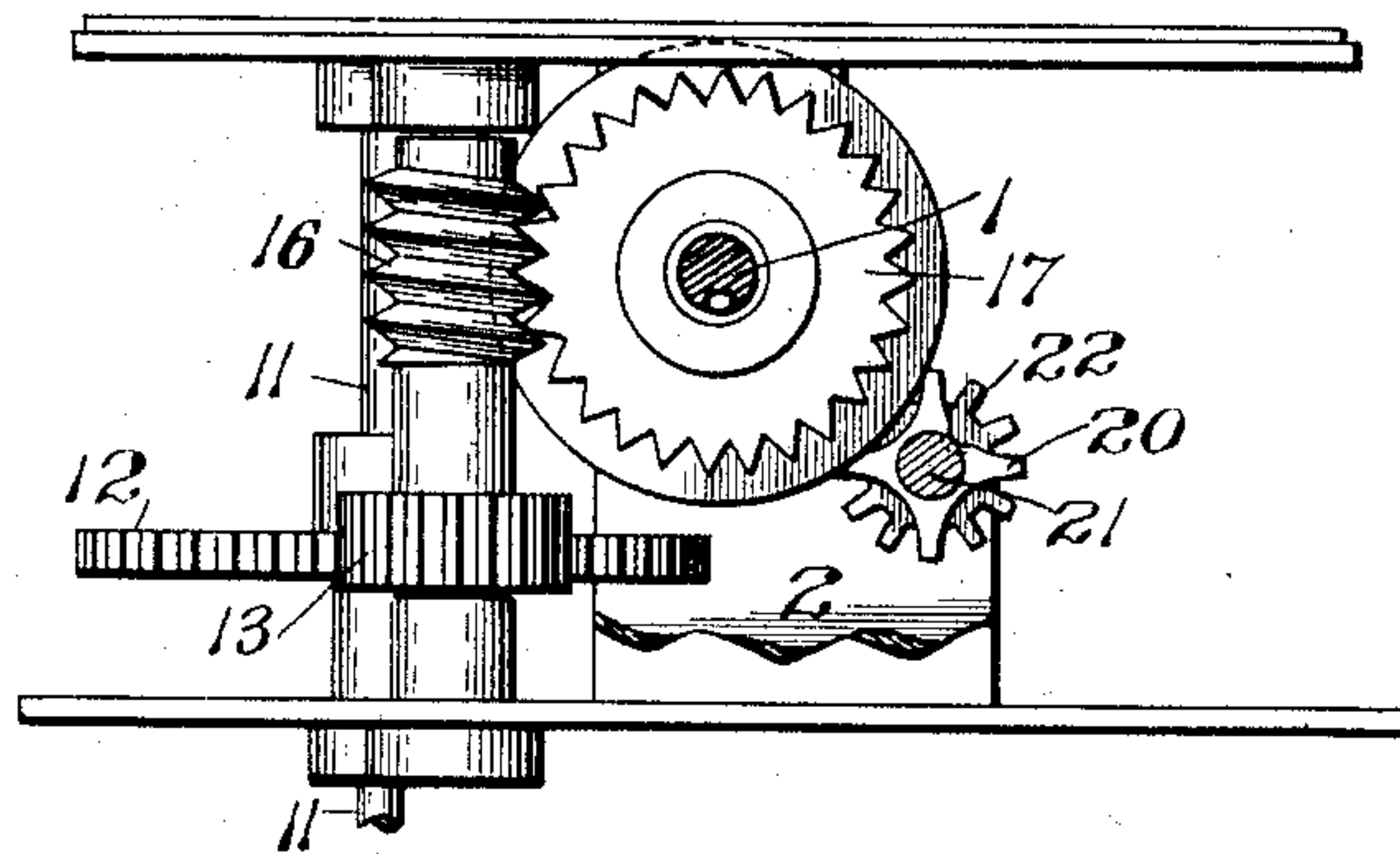


Fig. 3.

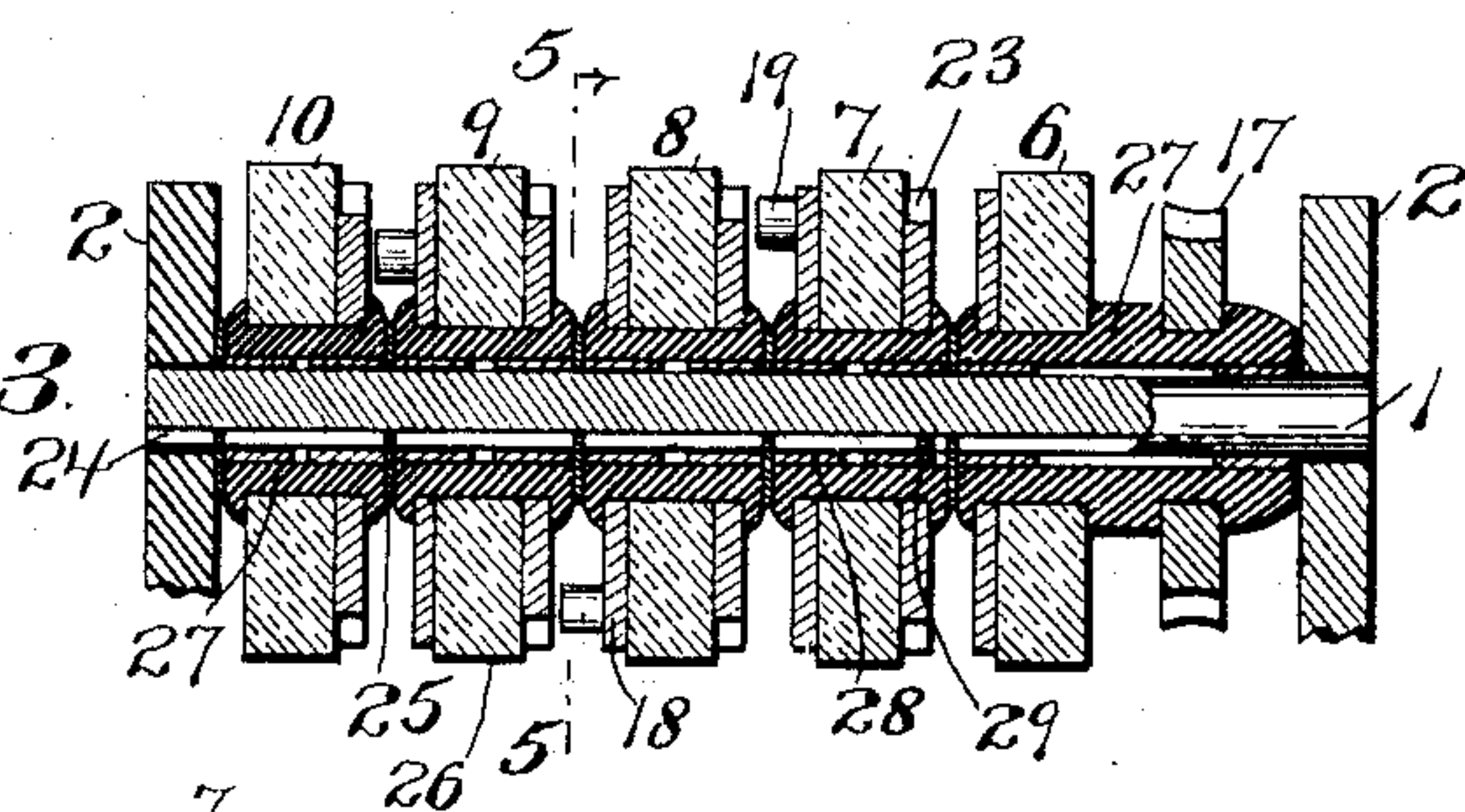


Fig. 6.

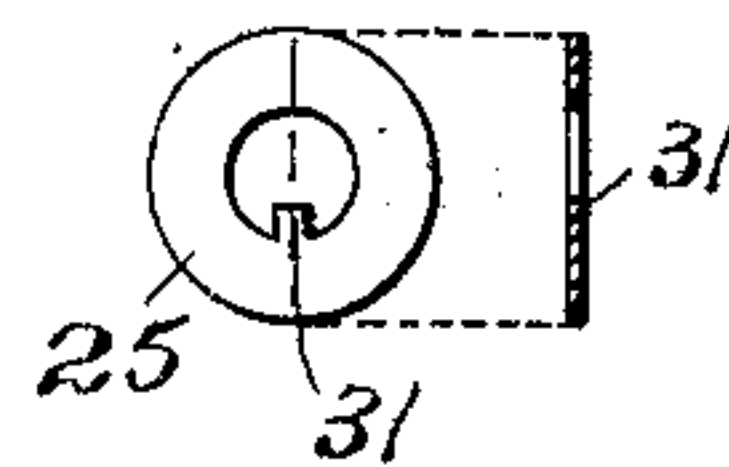


Fig. 4.

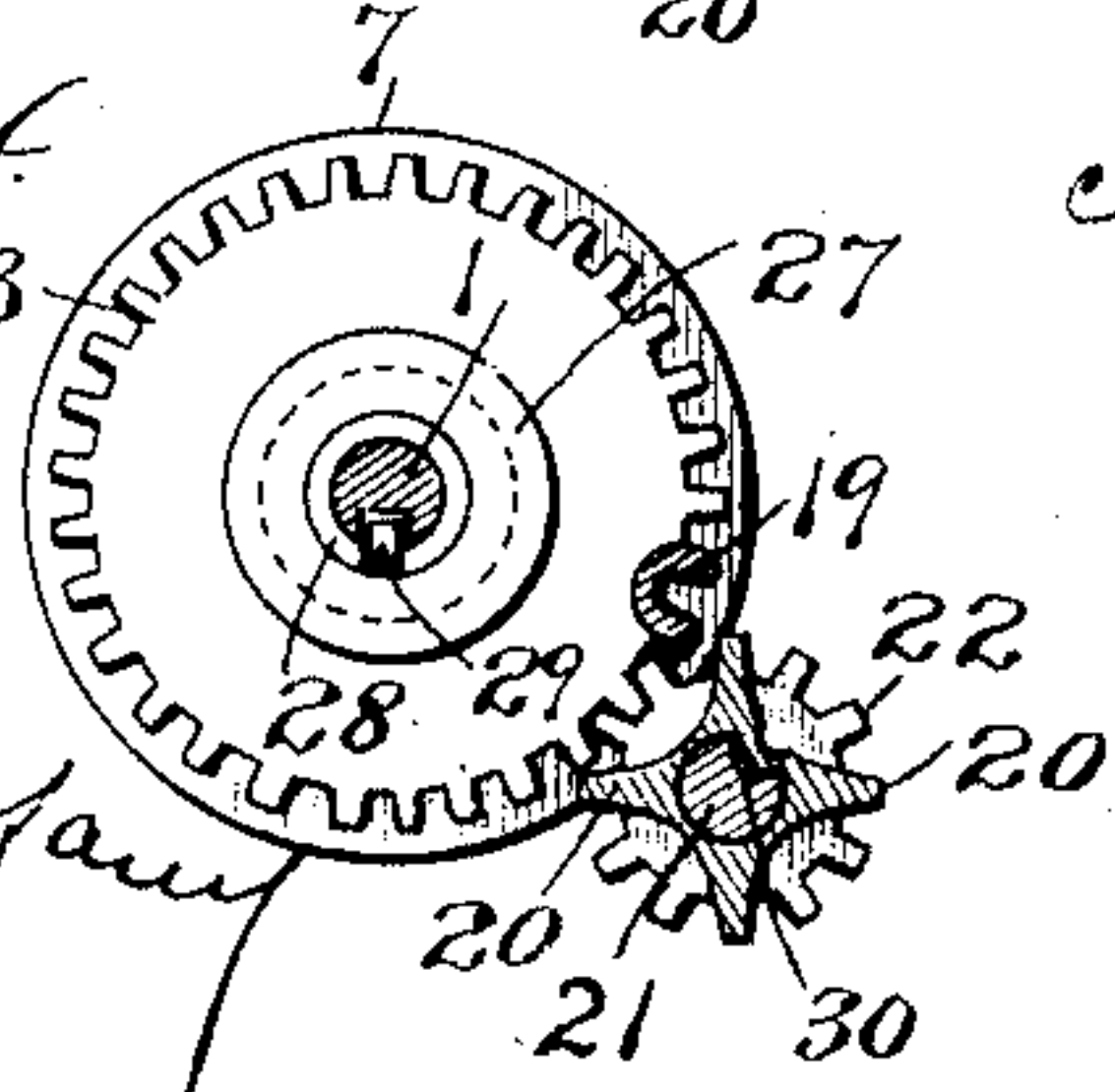
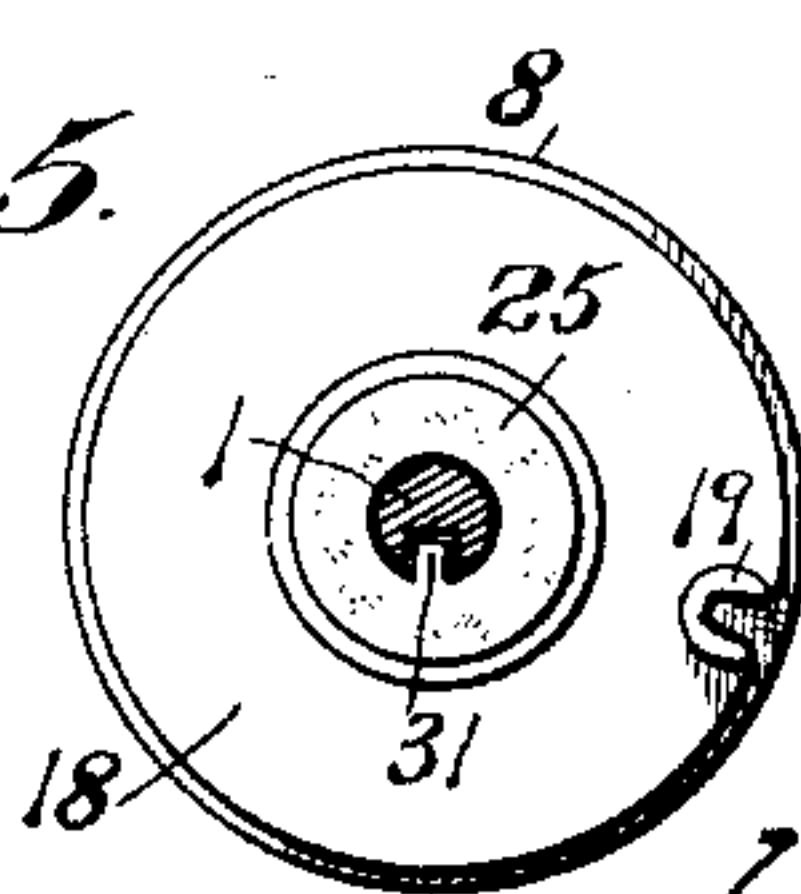


Fig. 5.



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UNITED STATES PATENT OFFICE.

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REGISTER.

SPECIFICATION forming part of Letters Patent No. 618,359, dated January 24, 1899.

Application filed July 23, 1898. Serial No. 686,669. (No model.)

To all whom it may concern:

Be it known that I, FRANK LAMBERT, a citizen of the United States, residing at New York, (Brooklyn,) Kings county, New York, have invented Improvements in Registers, of which the following is a specification.

My invention relates to mechanism in which a series of intermittently-moving wheels are used, such as registers, and has for its object to so construct the same that the frictional surfaces of all the wheels are automatically cleaned at intervals to avoid the formation of any incrustation.

Where registers are used for certain purposes—as, for instance, in meters—the register-wheels representing the higher denominations are moved only at long intervals, and it is not unusual for oxidation to take place, thereby causing the parts to become so clogged that they are virtually welded together. This not only prevents the register from operating, but some part of the mechanism might break under the pressure developed from the meter.

The drawings represent a straight register or one having the register-wheels mounted on a common axle, and by my invention I provide means whereby the relative positions of the friction-surfaces of the wheels and the parts adjacent thereto are automatically changed, and the consequent rubbing of said surfaces against each other keeps them bright or clean and prevents accumulation of deposits which clog the parts.

In the accompanying drawings, Figure 1 is a sectional plan of a registering mechanism, taken just below the top or index plate. Fig. 2 is an end view of such register, the bracket supporting the axles being cut away. Fig. 3 is a sectional elevation on line 3 3 of Fig. 1. Fig. 4 is a section taken on line 4 4 of Fig. 1. Fig. 5 is a section taken on line 5 5 of Fig. 3. Fig. 6 shows a side view and cross-section of one of the disks.

The axle 1, mounted in end brackets 2 2, so as to be freely rotated, carries the register-wheels 6 7 8 9 10. The spindle 11, rotated by the meter or other mechanism, transmits the sum of its rotations to the register-wheels by means of gear 12, fast on spindle 11, meshing with gear 13, free to turn on its spin-

dle 15. Worm 16, Fig. 2, also in one with gear 13, engages gear 17, which latter is fast with the unit or first wheel 6 of the register.

In one form of register the wheels 6, 7, 8, &c., are loosely mounted on the axle, and, as shown in the drawings, the unit-wheel is provided with a disk 18, carrying a tooth or notched projection 19, adapted to engage a star-pinion 20 on auxiliary shaft 21 at each revolution of the units-wheel. Star-pinion 20 is in one with pinion 22, which engages gear 23, fast to the tens-register wheel 7. This tens-wheel also carries a notched projection to engage the next star-pinion to operate the hundreds-wheel 8, and so on, which mechanism is well known.

When the register is in use, the units and tens wheels are frequently rotated on the axle 1; but it may be months before the wheels denoting the higher places are moved, and not only does it occur that these higher-denomination wheels become fast to the axle, but adjacent wheels become rigidly joined together. To avoid these defects, I so mount one of the frequently-moving wheels, such as 6 or 7, that the axle 1 rotates with the said wheel, and as the remaining register-wheels are not moved by the rotation of said axle the constant rubbing and displacement of the axle within the hubs of the wheels prevent accumulations. I also provide the axle 1 with a longitudinal groove 24, the sharp forwardly-moving edge of which tends to scrape away from inside the hubs any deposit thereon. Furthermore, I mount disks 25 (shown separately in Fig. 6) on axle 1, so as to rotate therewith, these disks being placed between the surfaces to be kept clean. The rotation of these disks between the adjacent sides of the register-wheels and between the last register-wheel and the bracket 2 acts in the same way as the axle 1, moving inside the hubs to prevent accumulation of deposits.

Preferably the tens-wheel 7 is secured rotatively to the axle 1, as this wheel moves often enough in an ordinary register to effect my object. As shown in the drawings, Fig. 3, these register-wheels are made up of a porcelain body 26, on the periphery of which the figures appear, disk 18 carrying the tooth 19 and (with the exception of the units-wheel)

gear-wheel 23, which parts are united together by white-metal hub 27. Inside each hub formed by the white metal are inserted two brass sleeves 28, forming the bearing-sur-
 5 face on the axle 1, the outer edges of which sleeves constitute the bearing ends of the wheel-hubs. The space at the center of the wheel between these sleeves 28 varies accord-
 10 ing to the thickness the porcelain body 26 takes in setting.

While any method of securing one of the register-wheels to the axle 1 may be employed, a simple manner is shown in the drawings. Referring to Figs. 3 and 4, a double longitu-
 15 dinal cut is made in the end of one of the sleeves 28 and the metal bent inward, as shown at 29, and this bent-in portion is passed into the groove 24 on the axle 1. The disks 25 may be secured to axle 1 by means of in-
 20 wardly-projecting portions 31 on said disks 25 entering the groove 24. The auxiliary axle 21 is also made free to be rotated in its bearings in brackets 22, and one of the star-
 25 pinions 20, with its pinion 22, is secured to this axle 21, so that the said axle rotates with it. To secure the star-pinion to the axle, a longitudinal groove 30 is formed in axle 21 and the metal of one of the star-pinions bent into the said groove to act as a driving-feather.

30 I claim as my invention—

1. The combination of an axle, a series of register-wheels moving at various intervals, mounted on said axle, and means for clean-
 35 ing the side faces of said register-wheels when one of them is operated.

2. The combination of an axle, a series of register-wheels moving at various intervals, mounted on said axle, and means for auto-
 40 matically cleaning the friction-surfaces between the wheels and the axle, and the side

faces of said wheels when one of them is operated.

3. The combination of an axle, a series of register-wheels mounted thereon, means for automatically rotating said axle within said
 45 wheels, and means operated by the rotation of said axle to clean the side faces of said wheels.

4. The combination of a series of register-wheels, an axle on which said wheels are
 50 mounted, and disks on the same axle between said wheels, with means for automatically rotating said disks independently of the motion of said wheels.

5. The combination of a series of register-
 55 wheels, an axle on which said wheels are mounted and disks between said wheels, with means for automatically rotating said axle and said disks without affecting the registering.
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6. The combination of a series of register-wheels, an axle on which said wheels are mounted, a fixed bracket, and a disk mounted between the face of the end wheel and the
 65 said bracket, with means for rotating said disk independently of said wheel.

7. The combination of a series of register-wheels, and a common axle therefor, with a series of disks, one of the said register-wheels and the said disks being rotatively secured
 70 to the said axle, all substantially as and for the purpose set forth.

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

FRANK LAMBERT.

Witnesses:

MARKUS HELFAUD,
 EDITH J. GRISWOLD.