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K. J. SVENSSON ET AL.

REVOLUTION COUNTER FOR ROTATING BODIES

Filed Aug. 13, 1923

Fig. 1.

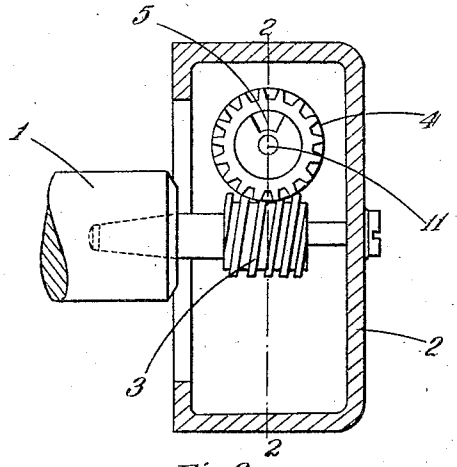


Fig. 2.

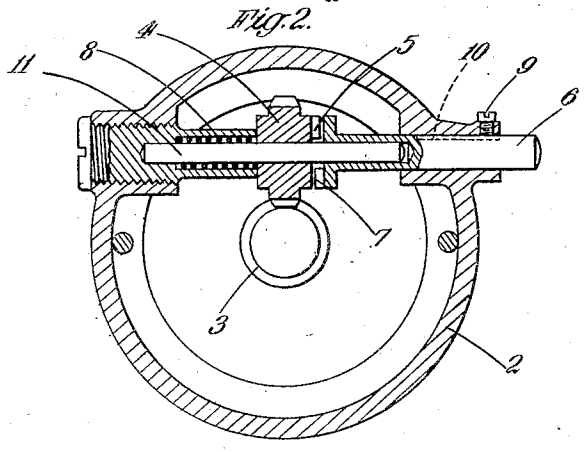
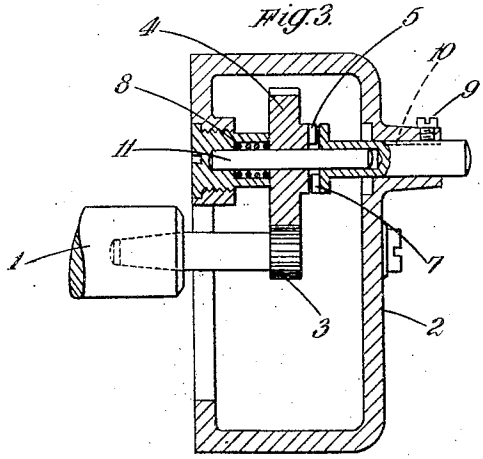


Fig. 3.



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KARL JOHAN SVENSSON AND KARL AXEL PATRIK NORLING, OF LONDON, ENGLAND.

REVOLUTION COUNTER FOR ROTATING BODIES.

Application filed August 13, 1923. Serial No. 657,175.

To all whom it may concern:

Be it known that we, KARL JOHAN SVENSSON, formerly of Lidingo, Sweden, and KARL AXEL PATRIK NORLING, formerly of Skondalsbro, Sweden, now both of 16 Woburn Square, London, W. C., England, subjects of the King of Sweden, have invented certain new and useful Improvements in or Relating to Revolution Counters for Rotating Bodies, of which the following is a specification.

It is often desirable and even important to have on a machine with rapidly rotating parts means for enabling the speed of such parts to be ascertained and for this purpose simple revolution counters are generally employed consisting of gearing for reducing the speed to enable the number of revolutions per time-unit to be counted directly, or of a bell the clapper of which is connected with gearing so that it strikes the bell at every revolution of the gearing. Alternatively use is often made of a so-called "touch-peg or pinion," adapted to bear against a heel, cam or like projection from a gear-wheel or its shaft, and to which is imparted a pronounced movement for every revolution of the wheel. By pressing one's hand or fingers against this touch-peg or pinion, one can easily count the number of impulses per time-unit, and as the gear ratio of the revolution counter is known the speed of the rotating machine part can be ascertained easily.

In such revolution counters with a touch-peg or pinion as used heretofore the touch-peg or pinion bears against the said heel or cam only so long as it is pressed, i. e. it is disconnected when the revolution counter is not in use, but on the other hand the gearing of the revolution counter runs continuously so long as the machine is at work.

The present invention relates to a revolution counter having a touch-peg or pinion and has for its object to obviate the disadvantages, such as undue wear, arising from the continuous intermeshing and running of the gearing for actuating said touch-peg or pinion.

To this end and in accordance with this invention one of the wheels of the gearing is adapted to be put into driving engagement only when pressure is brought to bear upon a touch-peg or the like, and to be disconnected automatically as soon as such pressure is released, i. e. the gearing runs only during such time as the revolution counter is actually in use. For this purpose the gear wheel is normally held out of driving connection by a spring or in the case of a gear-wheel with helical or like teeth by the axial pressure caused thereby between the intermeshed wheels, driving engagement between the wheels being brought about by pressure of the hand upon the touch-peg or the like.

In the accompanying drawings Figure 1 is a sectional side elevation of one form of the invention in which the drive is effected through worm gearing and Figure 2 is a section on the line 2—2, Figure 1, whilst Figure 3 is a sectional side elevation of a modified construction in which the drive is effected through spur gearing.

In all the figures 1 denotes the rotary machine part the speed of which is to be measured, 2 the case or housing of the revolution counter, 3 the driving gear wheel (worm in Figures 1 and 2 and spur in Figure 3) mounted axially on the rotary machine part 1. 4 is an axially slidable driven gear-wheel with an inclined heel or ramp 5, 6 is the so-called touch-peg with its inclined heel or ramp 7, whilst 8 is a coiled spring adapted normally to press the gear wheel 4 out of mesh with the worm or pinion 3 as the case may be. 9 is a screw or key projecting into a groove 10 in the touch-peg 6 to prevent the latter from turning, and 11 is the shaft for the axially slidable driven gear wheel 4.

It is to be observed that the gear wheel 4 is brought into mesh with the worm or pinion 3, as the case may be, only when the touch-peg 6 is pressed inwards against the action of the spring 8 consequently there is driving engagement only when the counting mechanism is to be used with the result that undue wear of idly driven gearing is entirely obviated.

We claim:—

1. A revoluion counter comprising gear wheels, a so-called "touch-peg" means for imparting to said touch-peg a pronounced impulse per revolution of a gear wheel in the mechanism when said "touch-peg" is pressed, means for bringing one of said gear wheels into engagement with its driving member only when pressure is applied to the "touch peg" and for disengaging said gear wheel from its driving member when the pressure applied to the "touch peg" is released, substantially as set forth.

2. A revolution counter for measuring the

number of revolutions of rotary machine parts and fitted with gearing as well as a so-called "touch-peg" a projection on a rotary member adapted to coact with said touch-peg and thus to impart to it a pronounced impulse per revolution of said rotary member, whereby the number of revolutions of the rotary machine part per time-unit can be ascertained when the gear ratio of the revolution counter is known, a driven gear wheel which runs free of the driving wheel when the revolution counter is not in use and means adapted, when pressure is applied to the "touch-peg" to cause the driven gear wheel to mesh with the driving wheel by shifting said driven wheel in an axial direction, and adapted, as soon as the pressure applied to the "touch-peg" is released, to permit said driven wheel to be disengaged from said driving wheel by being shifted far enough, in an axial direction towards the "touch-peg," to be free of said driving wheel.

3. A revolution counter for measuring the number of revolutions of rotary machine parts and fitted with gearing as well as a so-called "touch-peg" a projection on a rotary member adapted to coact with said touch-peg and thus to impart to it, a pronounced impulse per revolution of said rotary member, whereby the number of revolutions of the rotary machine part per time-unit can be ascertained when the gear ratio of the revolution counter is known, a driven gear wheel which runs free of the driving wheel when the revolution counter is not in use and a spring exerting a lateral thrust on said driven wheel in the direction of the "touch-peg" and tending always to disengage the driven wheel from the driving wheel by sliding the former in an axial direction towards the "touch-peg" thereby throwing the gear of the revolution counter out of action except when the latter is brought into use by applying pressure to the "touch-peg."

4. A revolution counter for measuring the number of revolutions of rotary machine parts and fitted with gearing, in which there is an axial thrust existing between the various members thereof, as well as a so-called "touch-peg," which coacts with a projection on a rotary member and thus has imparted to it a pronounced impulse per revolution of said rotary member, whereby the number of revolutions of the rotary machine part per time-unit can be ascertained when the gear ratio of the revolution counter is known, a driven gear wheel which runs free of the driving wheel when the revolution counter is not in use, and means adapted to cause the axial thrust between the members of the gearing to tend always to disengage the driven wheel from the driving wheel by sliding the former in an axial direction towards the "touch-peg" thereby throwing the gear of the revolution counter out of action except when the latter is brought into use by applying pressure to the "touch-peg."

5. A revolution counter for measuring the number of revolutions of rotary machine parts and fitted with gearing, in which there is an axial thrust existing between the various members thereof, as well as a so-called "touch-peg," which coacts with a projection on a rotary member and thus has imparted to it a prounounced impulse per revolution of said rotary member, whereby the number of revolutions of the rotary machine part per time-unit can be ascertained when the gear ratio of the revolution counter is known, a driven gear wheel which runs free of the driving wheel when the revolution counter is not in use, and means adapted to cause the axial thrust between the members of the gearing in conjunction with the thrust of a spring to tend always to disengage the driven wheel from the driving wheel by sliding the former in an axial direction towards the "touch-peg" thereby throwing the gear of the revolution counter out of action except when the latter is brought into use by applying pressure to the "touch-peg."

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