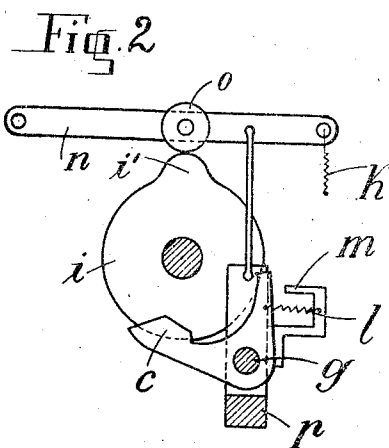
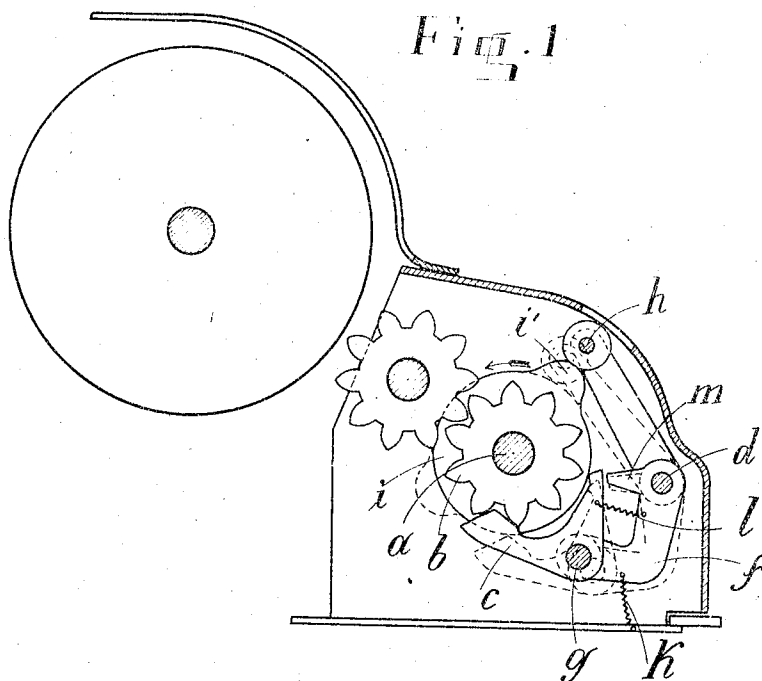


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 MECHANISM FOR DISENGAGING ANCHOR ESCAPEMENTS IN CALCULATING MACHINES.
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Patented May 30, 1911.



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UNITED STATES PATENT OFFICE.

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MECHANISM FOR DISENGAGING ANCHOR-ESCAPEMENTS IN CALCULATING-MACHINES.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, VALENTIN JAKOB ODHNER, a subject of the King of Sweden, and residing at St. Petersburg, Russia, have invented certain new and useful Improvements in Mechanism for Disengaging Anchor-EscapeMENTS in Calculating-Machines, of which the following is a specification.

My invention relates to calculating machines, and a primary object is to provide improved mechanism for throwing out of gear the anchor-escapeMENTS that coact with the gears of the accumulator disks or adding wheels, the anchor-shaft being shifted at the commencement of the rotation of the counting-mechanism shaft by means of a cam mounted on the latter. Similar devices, in which a shaft parallel to the counting-mechanism shaft is displaced at the commencement of the rotation of the counting-mechanism shaft by a cam fast on the latter and a lever coacting with the cam are well-known, (see German Patent No. 214,403) but in these devices the adjustment of the auxiliary shaft consists only in rotating it and its purpose is to remove braking members arranged on the shaft from the addition wheels and to place stops in the path of projections on the addition wheels. In contradistinction to these known arrangements, according to my invention the cam does not bring about a partial rotation of the axle carrying the anchor-escapeMENTS, but a sluing of the same, and the purpose of sluing the anchor-shaft is to remove each arm of an anchor located in its operative position out of its appertaining counting wheel, without causing the other arm to engage with the wheel; the latter would be the case when employing the above mentioned known devices, and consequently the anchors would not be completely disengaged from the counting wheels.

Now it is true devices are known in calculating machines, (see German Patent No. 185,060, for example) in which the two-armed anchor is revoluble about a shaft which can be rocked about an axis located near the place of engagement of the anchor-pallet which remains in its operative position; in these well-known devices for temporarily diminishing the locking action of anchor-escapeMENTS in calculating machines and the like, the anchor-escapeMENT is, however, formed in such manner that its acts on two gears connected with one another, and

the arm of the anchor engaging with the one of these two gears is brought out of its operative position by sluing the shaft, while the other arm of the same anchor remains in its operative position, *i. e.* in engagement with the second gear. My improved mechanism differs from these known devices in that both the arms or pallets of one and the same anchor coact with one single gear, and when the anchor-shaft is slued or moved transversely the two arms of each anchor are completely disconnected from the appertaining gear. In this manner very simple and very effective mechanism is obtained which is a great advantage, particularly for calculating machines which are otherwise relatively complicated, because the simpler the mechanism having at least equal efficiency can be made, the less will be the injurious resistances and the danger of disturbances in working.

Two illustrative embodiments of my invention are represented by way of example in the accompanying drawing, wherein:—

Figure 1 is a front sectional elevation showing one form of my mechanism, and Fig. 2 is an elevation showing the principal parts of another form.

Referring firstly to Fig. 1, the counting wheels *b* and the numbered disks, not shown, are mounted on the axle *a*. The two arms of an anchor *c* engage alternately, in like manner as in timepiece mechanism, in the teeth of each counting wheel *b*. All the anchors are mounted on a common shaft *g* which is journaled in the one end of a two-armed lever *f* able to rock about an axle *d*. The other end of the lever *f* carries an anti-friction roller *h* which is pressed by a spring *k* against a cam *i* mounted on the axle *a*. To the one arm of the anchor *c* is attached a spring *l* which tends to pull it outward until it abuts against a lug *m* provided on the lever *f*. The projection *i'* of the cam *i* is arranged in such manner relatively to the numbered disks that, when these have been returned to zero, it lifts the roller *h* and rocks the lever *f* so that the anchors *c* lock the wheels *b* in the required manner.

Now when the numbered disks have moved, during a calculation, out of their zero position and are to be returned to zero, the axle *a* is rotated in the direction of the arrow in known manner by a winged nut or the like. The projection *i'* of the cam *i* slides away from the roller *h*, and this is

pressed by the spring *k* against the circular periphery of the cam, so that the lever *f* occupies the position shown in dotted lines and brings the anchor *c* out of engagement with the teeth of the wheel *b*, so that when the axle *a* is turned farther the numbered disks are at once placed into their zero position.

Referring now to Fig. 2, instead of the double lever *f* shown in Fig. 1, I provide a one-armed lever *n* carrying an antifriction roller *o* resting against the cam *i* and pressed against the latter by a spring *k*. In contradistinction to the form according to Fig. 1 this lever *n* does not directly carry the anchor *c* but can move a slide *p*, which on its part, revolubly carries the shaft *g* on which the anchors *c* are mounted. The mode of operation of this modified form is otherwise the same as that of the form described above with reference to Fig. 1.

I claim:—

1. In mechanism for disengaging anchor-escapements in calculating machines, the

combination with an axle, carrying counting wheels, and a cam, of a shaft, anchors normally engaging said wheels mounted on the shaft, and means revolubly carrying said shaft, coacting with said cam, and adapted to displace said shaft and completely disengage the anchors from the counting wheels.

2. In mechanism for disengaging anchor-escapements in calculating machines, the combination with an axle, carrying counting wheels, and a cam, of a shaft, anchors normally engaging said wheels mounted on the shaft, and means comprising a lever coacting with said cam, revolubly carrying said shaft and adapted to displace said shaft and completely disengage the anchors from the counting wheels.

In testimony whereof, I affix my signature in the presence of two witnesses.

VALENTIN JAKOB ODHNER.

Witnesses:

H. A. LOVIAGUINE,
Aug. MICHIZ.