R. E. HART.

REGISTER.

APPLICATION FILED MAY 24, 1915.

1,192,193.

Patented July 25, 1916.

2 SHEETS—SHEET 1.

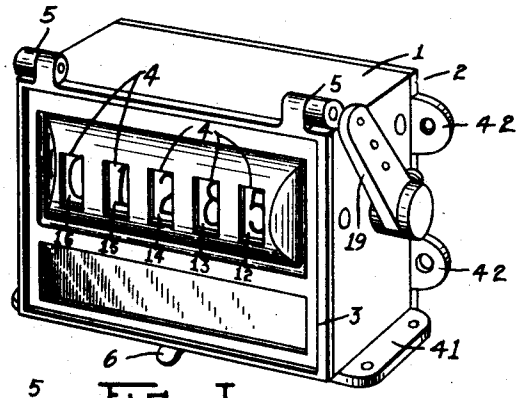


Fig. I.

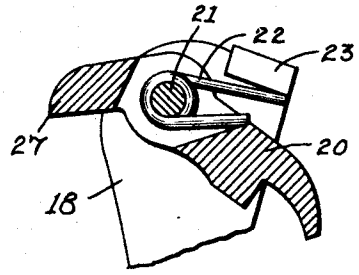


Fig. IV.

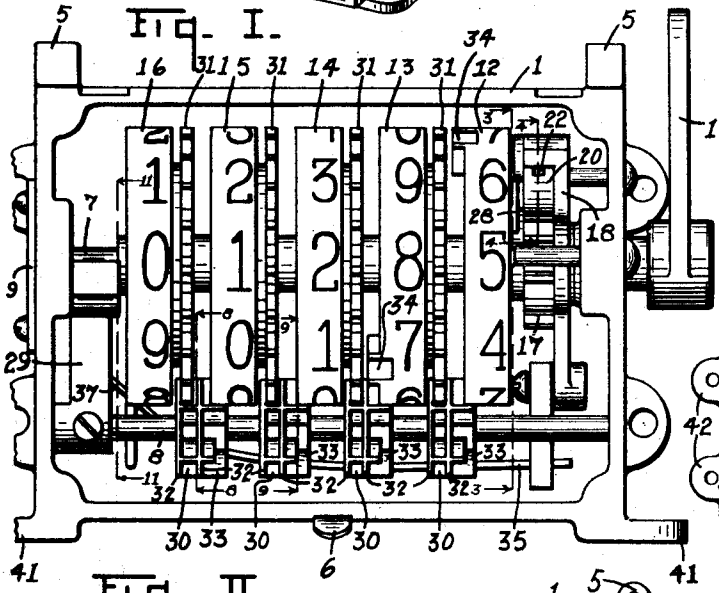


Fig. II.

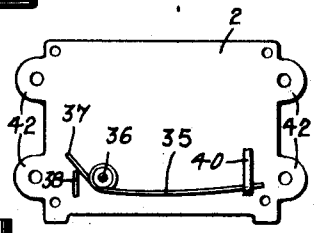


Fig. V.

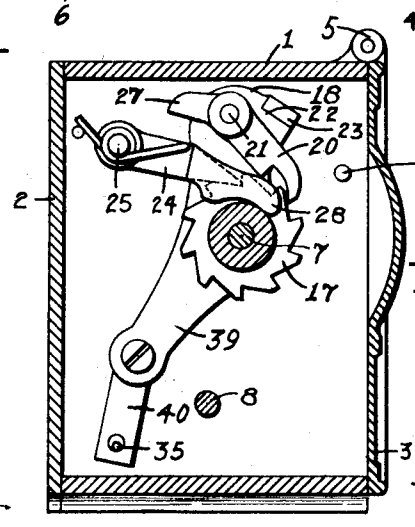


Fig. III.

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REGISTER.

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2 SHEETS—SHEET 2.

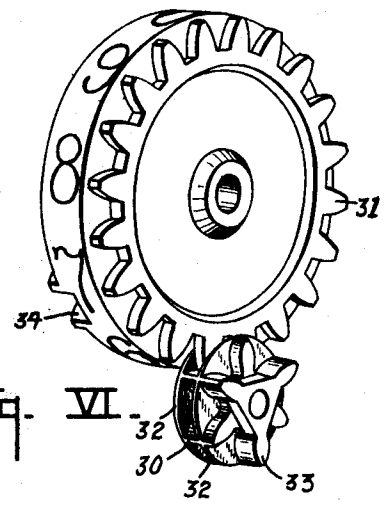


Fig. VI.

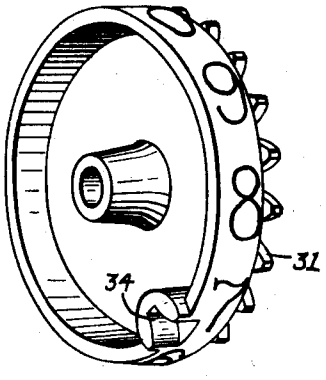


Fig. VII.

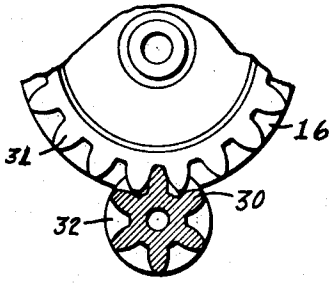


Fig. VIII.

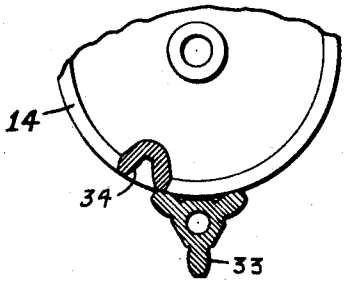


Fig. IX.

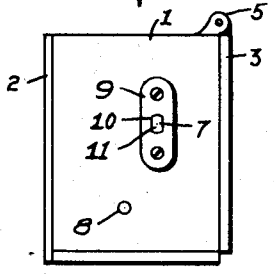


Fig. XII.

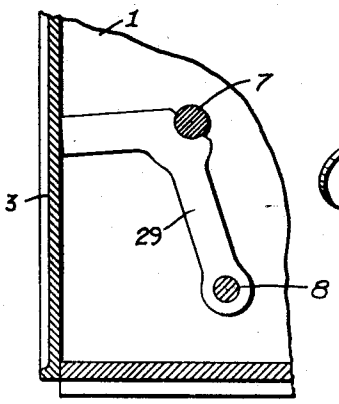


Fig. XI.

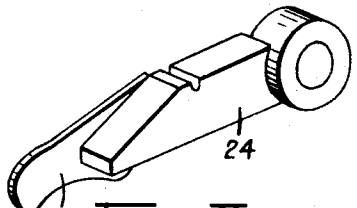


Fig. X.

WITNESSES:

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UNITED STATES PATENT OFFICE.

RAY E. HART, OF BATTLE CREEK, MICHIGAN.

REGISTER.

1,192,193. Specification of Letters Patent. Patented July 25, 1916.

Application filed May 24, 1915. Serial No. 30,085.

To all whom it may concern:

Be it known that I, RAY E. HART, a citizen of the United States, residing at Battle Creek, Michigan, have invented certain new and useful Improvements in Registers, of which the following is a specification.

This invention relates to improvements in registers.

The main objects of this invention are: First, to provide an improved register which may be quickly and easily set back to zero and one in which the mechanism is simple and durable. Second, to provide in a register an improved transfer gearing. Third, to provide an improved register which is simple and economical in structure and very durable in use.

Further objects, and objects relating to details and economies of construction and operation will definitely appear from the detailed description to follow.

I accomplish the objects of my invention by the devices and means described in the following specification.

The invention is clearly defined and pointed out in the claims.

A structure constituting a preferred embodiment of my invention is illustrated in the accompanying drawing forming a part of this specification, in which:

Figure I is a front perspective view of a structure embodying the features of my invention. Fig. II is a front view with the front wall removed. Fig. III is a detail vertical transverse section on a line corresponding to line 3—3 of Fig. I. Fig. IV is an enlarged detail section of the actuating pawl on a line corresponding to line 4—4 of Fig. II. Fig. V is a detail plan view of the rear wall showing the mounting of the pawl return spring thereon. Fig. VI is a perspective from the front side of one of the number wheels and its transfer gear. Fig. VII is a perspective from the rear side of the transfer number wheels shown in Fig. VI. Fig. VIII is a detail section on a line corresponding to line 8—8 of Fig. II. Fig. IX is a detail section on a line corresponding to line 9—9 of Fig. II, showing details of the Geneva stop or intermittent transfer gear. Fig. X is a perspective view of the stop pawl. Fig. XI is a detail vertical section on a line corresponding to line 11—11 of Fig. II, showing the lock for retaining the number wheels in position. Fig. XII is an end view of the casing showing the means for supporting the number wheel shaft against rotation.

In the drawing similar reference characters refer to similar parts throughout the several views, and the sectional views are taken looking in the direction of the little arrows at the ends of the section lines.

Referring to the drawings, the casing designated generally by the numeral 1, is provided with a removable rear wall 2 and a hinged front wall 3 having window openings 4 therein. The wall 3 is hinged at 5 and is provided with a spring latch 6. Within the casing I mount a number wheel shaft 7 and a transfer pinion shaft 8, the shafts being arranged parallel. The shaft 7 is secured against rotation by means of the plate 9 which is provided with a non-circular hole 10 for the non-circular end 11 of the shaft.

The number wheels 12, 13, 14, 15 and 16 are rotatably mounted on the shaft 7. The wheels 13, 14, 15 and 16 are mounted for axial as well as rotative movement. The wheels may be independently adjusted axially except as they abut each other. The unit number wheel 12 is provided with a ratchet 17.

An actuating member 18 is pivotally mounted at the side of the ratchet on the shaft 7 and has a hub-like extension projecting through the casing and to which the actuating lever 19 is connected.

The actuating pawl 20 is mounted on the pivot 21 on the actuating member 18 to coact with the ratchet wheel 17. The pawl is held yieldingly in engagement by the spring 22 which is arranged on the pivot 21, one arm of the spring engaging the overhanging lug 23 and the other the pawl, see Fig. IV. A holding pawl 24 is mounted on the pin 25 so that it lies at the rear of the pawl 20.

A stop 26 is provided for the actuating member and is positioned so that when the actuating member is against the stop the actuating pawl lies under the stop, preventing its raising and thus preventing overthrow of the units number wheel, so that the actuating pawl serves the double purpose of actuating the ratchet and also as an overthrow stop.

The holding pawl 24 is positioned so that it is engaged by the actuating pawl 20 when the actuating member is swung to its rear

position, serving as a stop for the actuating member and the holding pawl is thereby held in engagement with the ratchet. The holding pawl is preferably provided with a flange-like extension 28 disposed between the ratchet and units wheel, supporting them against axial movement. Axial movement of the other number wheels is prevented by the lock 29 which is mounted on the transfer pinion shaft adapted to drop behind the last number wheel into engagement with the shaft 7, as shown in Fig. XI.

When the retaining member is swung down the number wheels 13, 14, 15 and 16 are free to be moved axially on the shaft 7.

The transfer pinions 30 are mounted on the transfer pinion shaft 8 for axial as well as rotative movement. The number wheels 13, 14, 15 and 16 are provided with transfer gears 31 meshing with these pinions. The pinions 30 are provided with flanges 32 engaging both sides of the gears 31 so that the pinions are shifted with the number wheels to disengage the intermittent transfer gears 33 from the number wheels. The number wheels are provided with indented gear teeth 34 with which the intermittent gears 33 coact. The gears 33 also coact with the peripheries of the number wheels, the gear being in effect a Geneva gear. By this arrangement, the transfer pinions can be disengaged from their preceding number wheels, but they are shifted with the succeeding number wheel or the number wheel driven thereby, and are prevented from getting out of mesh therewith by the flanges.

When the lock 29 is disengaged, the number wheels, with the exception of the units number wheel, may be shifted axially and as the transfer pinions are shifted with their respective number wheels, they are disengaged from the preceding number wheels and when so disengaged, the number wheels can be set to zero or the desired position. The parts are all brought into operative position by shifting them into position toward the units number wheel. This provides a very simple resetting means and one which is not likely to become disarranged.

The actuating member is returned by the rod spring 35 which is mounted on the stud 36 on the rear wall, the spring being coiled about the stud and providing an arm 37 engaging the lug 38 on the wall. The spring is connected to the arm 39 of the actuating member by the link 40. This provides an effective mounting for the spring and one which permits the use of a comparatively long spring and the parts can be easily assembled and are not likely to become displaced in use.

The bottom of the casing is provided with attaching ears 41 while the rear wall is provided with attaching ears 42 so that the casing may be mounted by either set of ears.

My improved register is very simple and economical and durable and is not likely to get out of repair.

I have illustrated and described my improvements in the form in which I have embodied the same for the market. I have not attempted to illustrate or describe various modifications which I contemplate as I believe the disclosure made will enable those skilled in the art to which my invention relates to embody or adapt the same as may be desired. I desire, however, to be understood as claiming my improvements specifically in the form illustrated as well as broadly within the scope of the appended claims.

Having thus described my invention what I claim as new and desire to secure by Letters Patent is:

1. The combination of number wheel and transfer and pinion shafts, a series of number wheels mounted on said number wheel shaft for rotative and axial movement, said number wheels being provided with indented transfer teeth and with the exception of the units wheel with transfer gears, transfer pinions mounted on said transfer pinion shaft for rotative and axial movement, and having teeth meshing with said number wheel gears and Geneva stop gear teeth coacting with the peripheries of said number wheels and their said indented transfer teeth, said transfer pinions being provided with flanges disposed at each side of the number wheel gears so that the pinions are moved axially with their number wheels, means for locking said number wheels against axial movement, and means for driving said units number wheel.

2. The combination of number wheel and transfer and pinion shafts, a series of number wheels mounted on said number wheel shaft for rotative and axial movement, said number wheels, with the exception of the units wheel, being provided with transfer gears, transfer pinions mounted on said transfer pinion shaft for rotative and axial movement, and having teeth meshing with the gears of succeeding number wheels and with intermittent gear connections with preceding number wheels, said transfer pinions being provided with flanges disposed at each side of the number wheel gears so that the pinions are moved axially with their number wheels, a lock pivotally mounted on said transfer shaft to rest on the number wheel shaft at the outside of the last number wheel supporting said number wheels against axial movement, and means for driving said units number wheel.

3. The combination of number wheel and transfer and pinion shafts, a series of number wheels mounted on said number wheel shaft for rotative and axial movement, said number wheels with the exception of the

units wheel, being provided with transfer gears, transfer pinions mounted on said transfer pinion shaft for rotative and axial movement, and having teeth meshing with the gears of succeeding number wheels and with intermittent gear connections with preceding number wheels, said transfer pinions being provided with flanges disposed at each side of the number wheel gears so that the pinions are moved axially with their number wheels, means for locking said number wheels against axial movement, and means for driving said units number wheel.

4. The combination of number wheel and transfer pinion shafts disposed parallel, a set of number wheels mounted on said number wheel shaft for rotative and axial movement, the said shiftable number wheels being provided with transfer gears, transfer pinions mounted on said transfer pinion shaft for rotative and axial movement and having teeth meshing with the transfer gears of said number wheels, and driving connections with the preceding number wheels, said transfer pinions being provided with flanges disposed at each side of the number wheel gears so that the pinions are moved axially with their respective number wheels.

In witness whereof, I have hereunto set my hand and seal in the presence of two witnesses.

RAY E. HART. [L. S.]

Witnesses:
GILBERT BUNN,
EMIL E. STORKAN.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."