

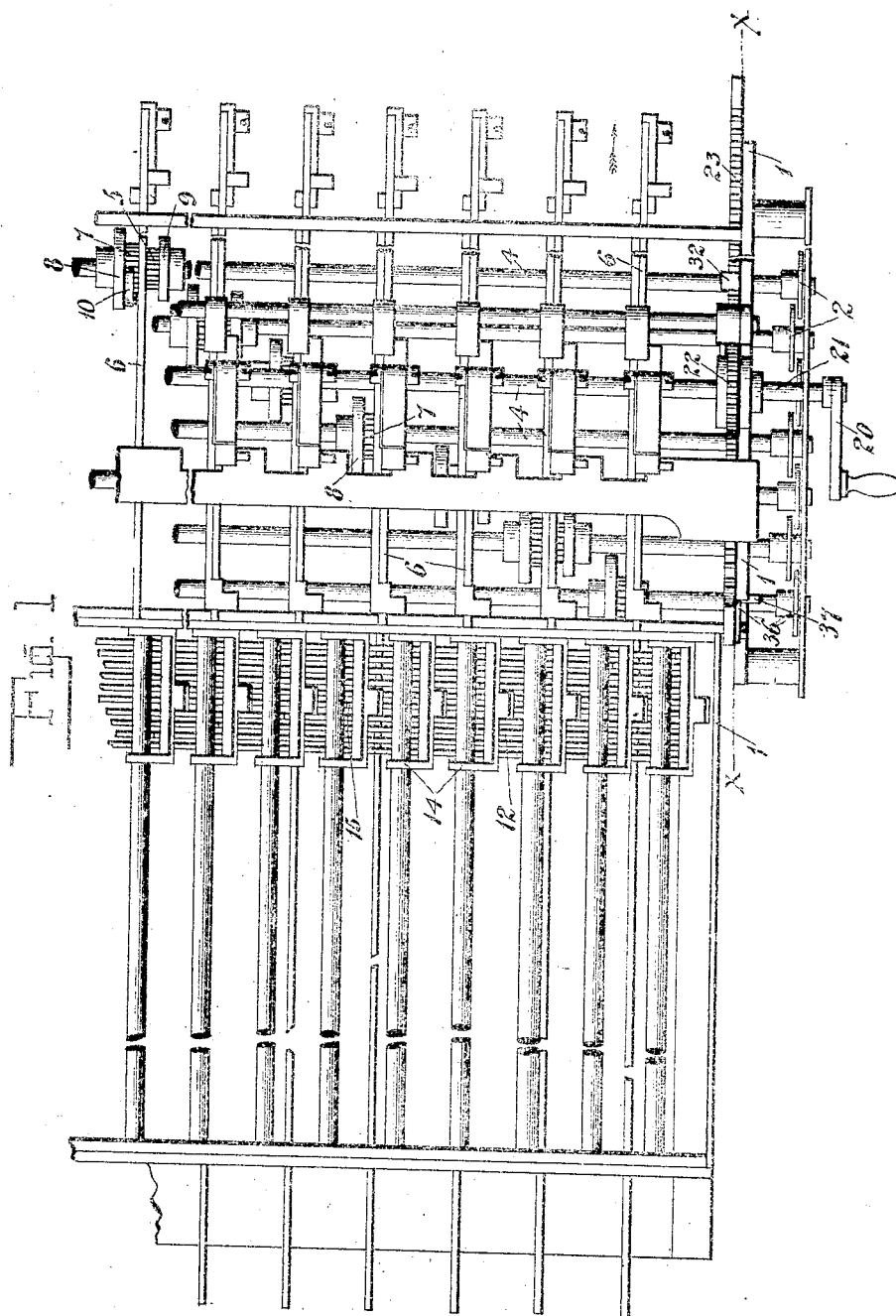
No. 818,249.

PATENTED APR. 17, 1906.

F. J. HULL.
REGISTER.

APPLICATION FILED SEPT. 24, 1903. RENEWED DEC. 7, 1905.

3 SHEETS—SHEET 1.



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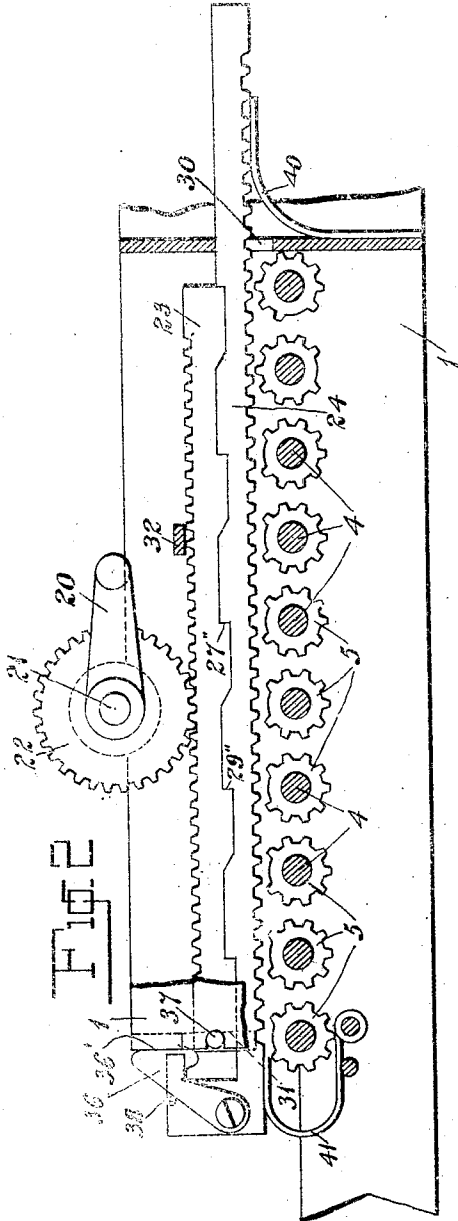
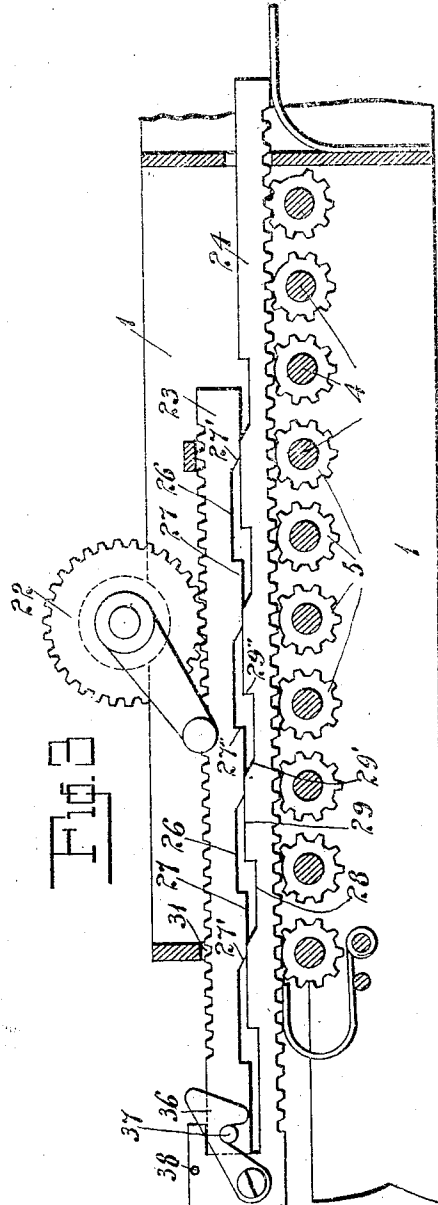
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3 SHEETS—SHEET 2.



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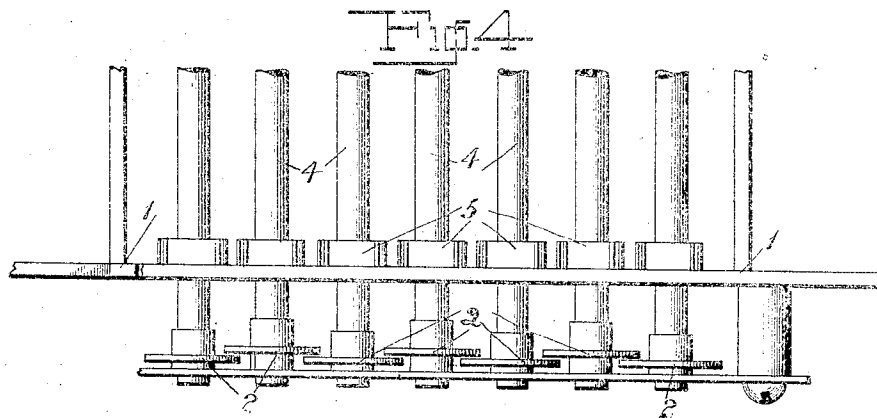
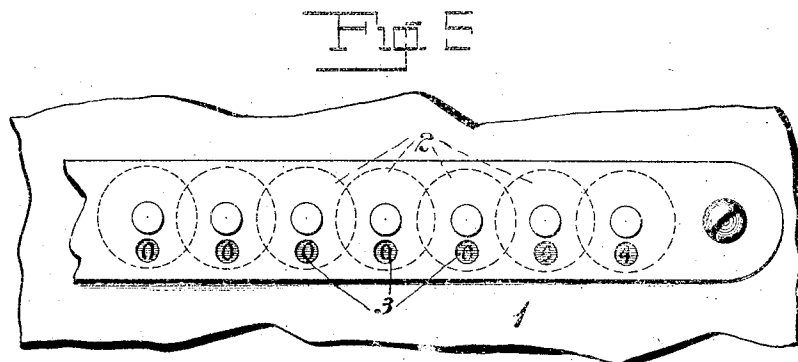
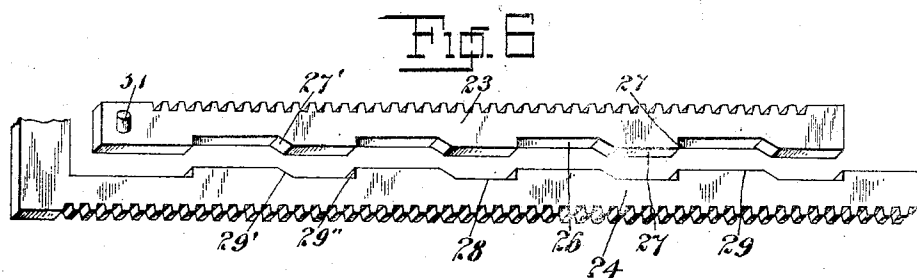
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3 SHEETS—SHEET 3.



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UNITED STATES PATENT OFFICE.

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REGISTER.

No. 818,249.

Specification of Letters Patent.

Patented April 17, 1906.

Application filed September 24, 1903. Renewed December 7, 1905. Serial No. 290,754.

To all whom it may concern:

Be it known that I, FOSTER J. HULL, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Registers, of which the following is a specification.

This invention relates to registers; and its object is to provide means for resetting the register-shafts to zero after they have been in operation for a period of time or when it may be so desired. The resetting of the register-shafts to zero must be accomplished without disturbing or interfering with the other operative devices connected thereto.

Referring to the accompanying drawings, forming a part of this specification, Figure 1 is a plan view of the register, including such parts as are necessary to show operation. Fig. 2 is a vertical section on the line $x-x$, Fig. 3 is a similar view with the parts in shifted position. Fig. 4 is a detail plan view of the register shafts and dials. Fig. 5 is a detail front elevation of the register-dials. Fig. 6 is a detail perspective view of the rack-bars.

A stationary frame for the movable parts of the machine is indicated at 1. On the dials 2 are arranged the numerals for the registration of purchases made in any desired system of coinage. The indicating figure and figures showing the temporary total of purchases is shown through holes 3 in the face of the machine. These dials are mounted on shafts 4, (see Figs. 1 and 2,) which are driven by pinions 5. With these pinions the teeth on the under side of the rack-bars 6 engage. Each pinion 5 has attached to it a ratchet-wheel 7, and the two wheels revolve freely upon the shafts 4 between the collars 8 and 9. Collar 8 has a pawl 10 thereon, which engages the ratchet 7. The result of this construction is that when the bar 6 is thrown outward—that is, in the direction of the arrow, Fig. 1—it turns the pinion 5, and the ratchet-wheel 7 will run freely under the pawl 10; but when the bar 6 is driven backward in a direction contrary to the arrow in Fig. 1 the pawl 10, engaging the ratchet-wheel 7, is rotated by the same, thereby rotating the register shaft and dial. In the present drawings there are indicated merely

the stop-slides 12, whose teeth are moved into the path of shoulders on bars 6 when the oscillating yokes 14 are oscillated by the key-board-keys. (Not shown.) These yokes 14 engage teeth 15 on the stop-slides 12, so that when a yoke is oscillated the stop-slide which it engages acts upon the bar 6 by suitable means to release it. The extent of projection 60 of the bar 6 will determine the extent of its return motion, and therefore the extent of rotation of the register shafts and dials 2.

This machine belongs to the class in which the operation of the key causes the setting of mechanism in such position that by the operation of a handle or lever the registering-wheels are turned to count and show the total of the transactions. The depression of a key oscillating a yoke 14 carries, as already set forth, the projection of a corresponding bar 6. The rotation of the operating-handle (not shown) causes all the bars 6 which have been projected to be thrown in, counting the result on the dials 2. In this class of registers it is essential that means be provided for resetting the register shafts and dials 2 to zero. To accomplish this quickly and accurately, there is employed a handle 20, secured to a short shaft 21, journaled in the frame 1, said shaft carrying a gear-wheel 22, engaging a rack-bar 23, riding on and controlling a spring-supported floating rack-bar 24, located immediately under the driven rack-bar 23, and the teeth of said rack-bar 24 adapted to engage a series of mutilated pinions 25, secured to the register-shafts 4.

When the register-shafts are in such position that the dials thereon indicate zero, the mutilated pinions 25 will be in the position shown by the first eight shafts, counting from the left in Fig. 2—that is, the mutilated portion of the pinions will be directly under the rack-bar 24 and longitudinal movement of said bar will not affect the pinions; but presuming the register-shafts to have been rotated, as shown, by the two right-hand pinions 25, the rack-bar 24 when forced downward into engagement with the pinions, Fig. 2, and given a longitudinal movement by the turning of the handle 20 and gear 22, the pinions that have been engaged by said rack-bar will be reset to zero—that is, rotated until their mutilated portions are under the

rack-bar. After the above operation the rack-bar is free to return to its initial position without engaging the pinions.

The rack-bar 23 has on its under side an alternate series of depressions 26 and projections 27, adapted to engage a corresponding series of depressions 28 and projections 29 on the floating rack-bar 24. Normally these depressions and projections are engaged, as shown in Fig. 2; but when the handle 20 is turned and the gear 22 moves the rack-bar 23 the inclined portions 27' and 29' of projections 27 and 29 will engage and cause the two rack-bars to be forced apart. The lower rack-bar being given a direct lateral vertical thrust will be forced into engagement with the pinions that have been previously operated by the register means and held in engagement with the pinions until the pinions are reset to zero.

The under rack-bar is guided in slots 30 and 31 in the frame 1, and the rack-bar 23 moving in the same plane is guided in slot 31 and by bracket 32. After the rack-bars are forced apart, as explained, (see Fig. 3,) the rack-bar 23 will move over the under rack-bar 24 until the end thereof strikes the upwardly-projecting end 35 of the under rack-bar and carries it along with it to the limit of its movement. In order to make the two rack-bars move as one, a locking device is employed consisting of a latch 36, pivoted on the upwardly-projecting end of the under bar and adapted to engage a pin 37 on the upper bar. When the bars are in the initial position, Fig. 2, the head 36' of the latch rests against the supporting-frame in such manner that when the upper rack-bar moves longitudinally and strikes the upwardly-projecting end of bar 24 and moves it away the latch will drop over the pin 37 and secure the two bars together.

After the rack-bars are in position, as above described, to start the resetting operation they cannot be returned to the initial position until all of the pinions that have been operated by the register mechanism have been reset to zero. This is due to the fact that the under rack-bar during the resetting operation is held in positive engagement with the pinions by the upper rack-bar and the pinions are prevented from retrogressive rotation by the register mechanism.

When the bars are returned to their initial position, bar 24 will, through the medium of the pin 37 and latch 36, draw the under rack-bar back with it until the head 36' of the latch strikes the frame of the machine and is lifted from engagement with the pin 37. The bar 23 continues to move back by force of gear 22 until the depressions and projections on the bars are in engagement. The under rack-bar is limited in its return movement by the latch coming in contact with a stop-pin 38 on the top of the upwardly-projecting end

35 of said rack-bar. The checking of the under rack-bar in its return movement determines the limit of return of the upper rack-bar—that is, by having the shoulders 27' and 29' on the rack-bars engage each other when they assume the position shown in Fig. 2. In order to keep the under rack-bar in engagement with the upper rack-bar, two leaf-springs 40 and 41 are secured to the frame of the machine and press upwardly against the under side of the said rack-bar.

The operation of resetting the register shafts and dials to zero is accomplished by turning the handle 20, in turn rotating the gear 22, that meshes with the rack-bar 23, giving said rack-bar a longitudinal movement that causes a disengagement of the projections on the rack-bars 23 and 24 and giving to the rack-bar 24 a lateral thrust that brings it directly into mesh with such of the mutilated pinions as have been previously operated by the register means. When the pinions are reset to zero, the mutilated portions thereof are directly under rack-bar 24, so that a reverse rotation of the handle 20 will return the rack-bar 24 to its initial position without engaging the pinions.

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

1. In a register, the combination of a plurality of register-shafts, means for operating the same, means for resetting the register-shafts to zero, comprising pinions on the register-shafts and rack-bars operating upon each other to engage and hold one of said rack-bars in positive engagement with the pinions during the resetting operation.
2. In a register, the combination of a plurality of register-shafts, mutilated pinions secured thereon, a resiliently-supported rack-bar, capable of lateral and longitudinal movement, a rack-bar operatively connected with and controlling the movement of said resiliently-supported rack-bar, and means for locking said bars together during certain periods of their operations.
3. In a register, the combination of a plurality of register-shafts, means for operating the same, mutilated pinions on the register-shafts, a longitudinally and laterally moving rack-bar, a rack controlling the operation of said rack-bar, means for operating said controlling rack-bar, and means for locking said rack-bars together during certain periods of their longitudinal movement.
4. In a register, the combination of a plurality of register-shafts, pinions on said shafts, a resiliently-supported rack-bar adapted to engage said pinions, but normally out of engagement therewith, a driven rack-bar controlling said resiliently-supported rack-bar, and alternate projections and depressions on the rack-bars adapted to give the resiliently-supported rack-bar a lateral

thrust to engage the pinions when the driven rack-bar is operated.

5 In a register, the combination of a plurality of register-shafts, mutilated pinions mounted thereon, a spring-supported rack-bar adapted to engage said pinions, a rack-bar operatively connected with and controlling said spring-supported rack-bar, and a latch on the spring-supported rack-bar engaging a pin on the controlling rack-bar to lock the rack-bars together during certain periods of the resetting position.

10 6. In a register, the combination of a plurality of register-shafts, a spring-supported

rack-bar, a rack-bar operatively connected 15 with and controlling the spring-supported rack-bar, pinions on the register-shafts adapted to be engaged by one of the rack-bars and said pinions constructed to permit the rack-bar to return to its initial position 20 without rotating said pinions, and alternate projections and depressions on the rack-bars for laterally moving the spring-supported rack into engagement with the pinions.

FOSTER J. HULL.

Witnesses:

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