C. WOLTER.

REVERSIBLE TRANSFER MECHANISM FOR CALCULATING MACHINES.

APPLICATION FILED SEPT. 7, 1910.

998,145. Patented July 18, 1911.

Fig. 1.

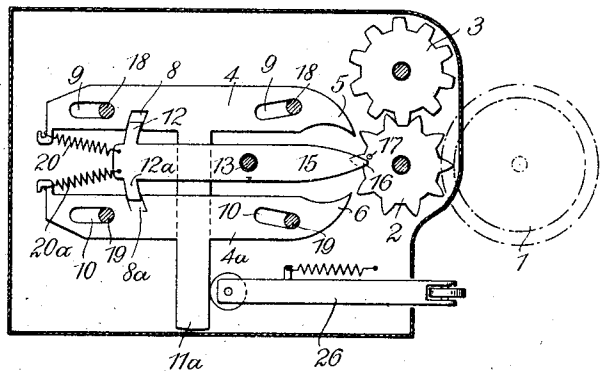


Fig. 2.

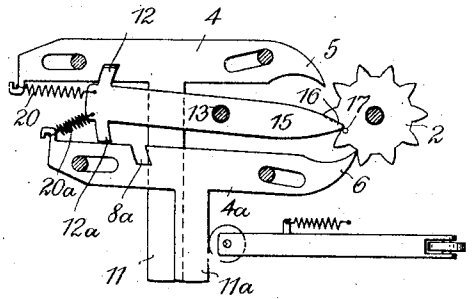
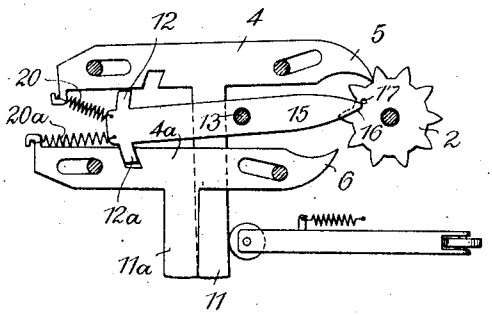


Fig. 3.



Witnesses.
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UNITED STATES PATENT OFFICE.

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REVERSIBLE TRANSFER MECHANISM FOR CALCULATING-MACHINES.

998,145. Specification of Letters Patent. Patented July 18, 1911.

Application filed September 7, 1910. Serial No. 580,790.

To all whom it may concern:

Be it known that I, CARL WOLTER, a subject of the King of Prussia, German Emperor, residing at Rixdorf, near Berlin, Germany, have invented certain new and useful Improvements in Reversible Transfer Mechanism for Calculating-Machines, of which the following is a specification.

This invention relates to a transfer mechanism for the counting wheels of calculating machines and it refers more particularly to such mechanism in which the transfer is effected by means of spring influenced plates. According to this invention such mechanisms are improved by providing a separate plate for the transfer for addition and for the transfer for subtraction, said plates being each controlled by a separate spring.

The improved mechanism is shown in the accompanying drawing in various positions.

The wheel 2 which meshes with the driving wheel 1 and with the numeral or counting wheel 3 has pointed teeth. The transfer teeth 5 and 6 are mounted on separate plates 4 and 4^a a convenient number of which is mounted upon axles 18, 19. The said plates 4 and 4^a have oblong slots 9 and 10, so that they can longitudinally slide upon their axles. The front slots are slightly inclined so that the plates can participate in the revolving motion of the toothed wheel 2. A two armed lever 15 pivotally mounted on 13 has a tooth 16 at the end of its right arm and two pawls 12, 12^a at the end of its left arm. Said pawls engage normally (Fig. 1) with the notches 8, 8^a of the plates 4, 4^a. When the plates 4, 4^a are in this position the pull springs 20, 20^a are under tension. The said springs are fixed with one end to the plates and with the other end to the rear part of the two armed lever 15. The plates 4, 4^a have cams 11, 11^a acted upon by the sliding rod 26 of the driving slide of the machine, whereby the plates are pushed back; said driving slide is not shown in the drawing as it does not form part of this invention.

The mechanism operates as follows:— Suppose the mechanism is in its normal inoperative position (Fig. 1); when the stud 17 of the toothed wheel 2 stands over the toothshaped end 16 of the two armed lever 15, this stud 17 will drag the lever along as soon as the calculating machine is being operated, when, for example the number 1 is to be subtracted the end of the lever 15 is moved downward whereby the pawl 12^a gets out of engagement with the notch 8^a; the plate 4^a being thus released jumps forward under the action of its spring 20^a and the next following toothed wheel 2 (Fig. 2) is thus turned for the space of one tooth. When the plate 4^a returns under the pressure exerted by the sliding rod 26 against the cam 11^a, the pawl 12^a drops again into the notch 8^a owing to the pull of the spring 20^a being obliquely directed; the plate 8^a is locked in its position. The operation is the same with additions only the plate 4 is operated instead of the plate 4^a, the next following toothed wheel 2 being thus revolved in opposite direction (Fig. 3).

I claim:—

An improved reversible transfer mechanism for calculating machines comprising in combination with the counting gear of the calculating machine, an upper plate and a lower plate, a tooth at the end of each of said plates, which have a straight oblong slot and an inclined oblong slot, and a notch, axles in said slots, a two armed locking lever pivotally mounted between said plates, two pawls at the rear end of said lever designed to engage with said notches of said plates, the pointed front end of said lever, a stud of the transfer wheel designed to act upon the front end of said lever, a pull spring for each of said plates, and a cam for each of said plates, and the sliding rod adapted to push against said cams, substantially as described and shown and for the purpose set forth.

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

CARL WOLTER.

Witnesses:
WOLDEMAR HAUPT,
ARTHUR SCHROEDER.