

R. REIN.
CONTROLLING DEVICE FOR CALCULATING MACHINES WITH TWO COUNTING MECHANISMS.
APPLICATION FILED NOV. 2, 1908.

934,756.

Patented Sept. 21, 1909.
2 SHEETS—SHEET 1.

Fig.1.

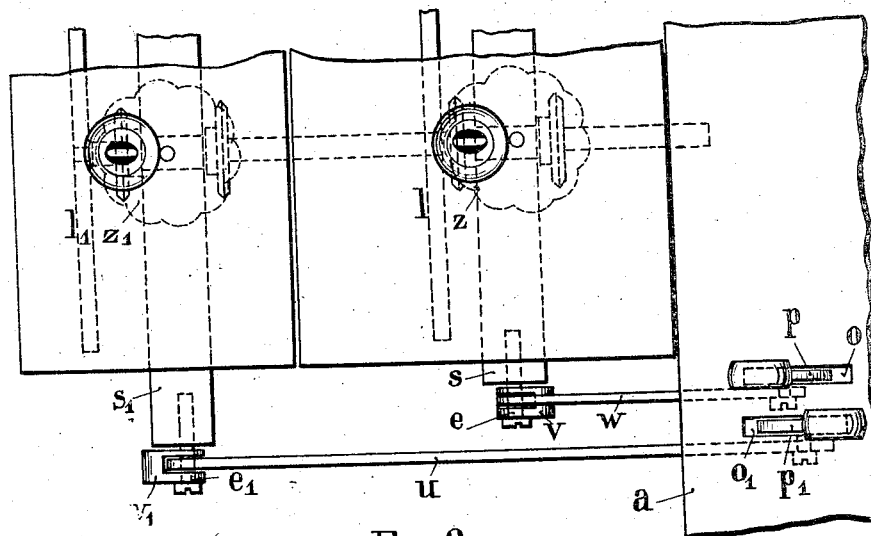
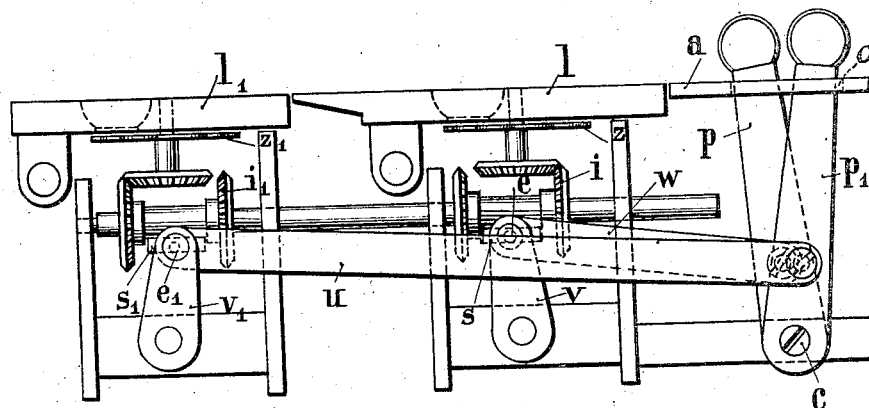


Fig.2.

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Fig. 3.

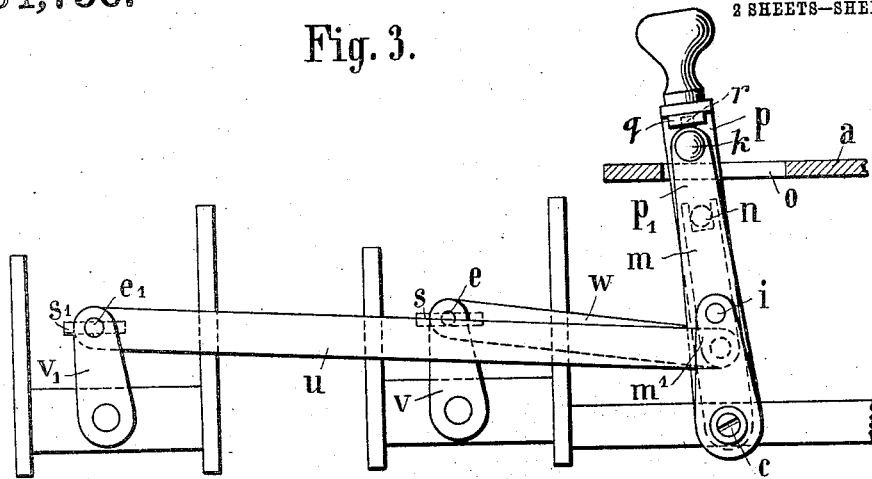


Fig. 4.

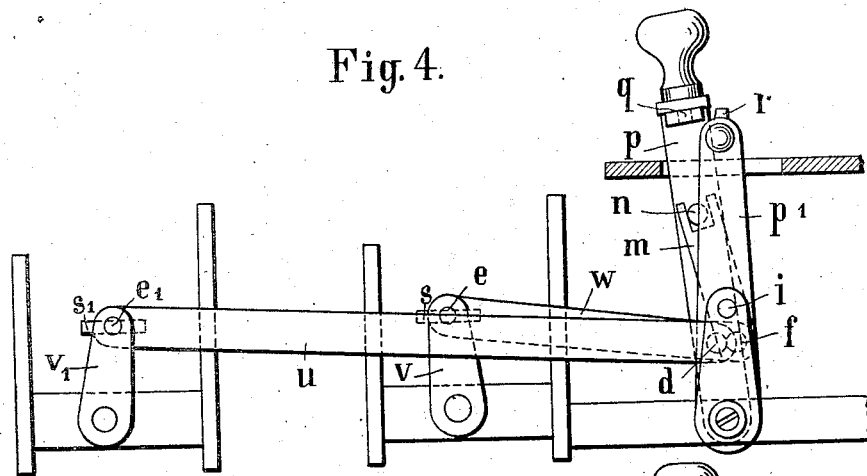


Fig. 5.

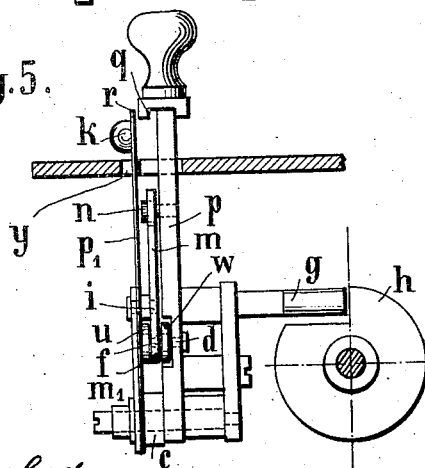
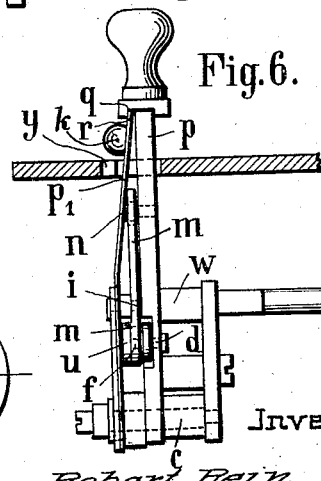


Fig. 6.



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UNITED STATES PATENT OFFICE.

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CONTROLLING DEVICE FOR CALCULATING-MACHINES WITH TWO COUNTING MECHANISMS.

934,756.

Specification of Letters Patent. Patented Sept. 21, 1909.

Application filed November 2, 1908. Serial No. 460,662.

To all whom it may concern:

Be it known that I, ROBERT REIN, a subject of the German Emperor, and resident of Berlin, Germany, have invented a certain new and useful Improvement in Controlling Devices for Calculating-Machines with two Counting Mechanisms, of which the following is a specification.

This invention relates to an improvement in the calculating machine described in the specification of Letters Patent No. 897659 granted to me. In the said machine the two turning gears for the counting gears are shifted from a common source so that both counting gears can be set at the same time for addition and multiplication or subtraction and division.

The present invention has for its object to shift both turning gears of the counting gears from a common source or separately so that any desired change for any of the four styles of calculation (addition, multiplication, subtraction and division) can be effected for each separate one of the two products-counting-gears. For this purpose the two shifting bars of the turning gears are each connected with a separate shifting lever in such manner that the turning gears of the two counting gears can each be shifted from a common source or for each counting gear separately as desired.

In the accompanying drawings two embodiments of the invention are illustrated in which—

Figure 1 is an end view of one embodiment. Fig. 2 is a plan. Figs. 3 and 4 show the second embodiment in different positions. Fig. 5 is a front elevation of Fig. 4 and Fig. 6 a front elevation of Fig. 3.

As shown, the shifting bars s, s^1 are mounted between the hubs of the slidable pairs of turning wheels i, i^1 for the two products-counting-gears z, z^1 arranged on the scales l, l^1 or the guiding levers v, v^1 are each pivotally connected by a connecting rod w or u with a hand lever p or p^1 pivoted at c . The levers p, p^1 project with their upper ends which are formed as handles through slots o, o^1 in the setting plate a on which are marked at suitable positions the words "Addition and multiplication" and "Subtraction and division". The connecting rods w, u are pivotally connected at one end with the bars s, s^1 or their guiding levers

v, v^1 by pins e, e^1 and at the other end with the levers p, p^1 .

In order to simplify the handling of the shifting levers p, p^1 during adjustment an arrangement can be introduced such as that shown in Figs. 3, 4, 5, 6. According to this arrangement only one of the operating levers requires to be used in shifting the setting plate. Only one of the levers has a handle, in the case shown the lever p , while the lever p^1 is formed with a spring at the upper part so that it presses against the lever p and is adapted to be connected with this by a lug r engaging behind a projection q . On the lever p^1 is arranged a double-armed lever m, m^1 pivoted at i and the shorter arm m^1 of which is pivotally connected with the connecting rod u by the pin f while the long arm m engages with its forked end a pin n which is secured to the lever p . The latter is pivotally connected with the connecting rod w by means of a pin d .

If the turning gears of the two counting gears are uniformly shifted when for example the processes of addition and multiplication or subtraction division are to be performed the levers p and p^1 are connected with one another in the manner aforesaid and the lever p provided with the handle is shifted for the style of calculation desired (Fig. 1). When both levers p and p^1 are connected with one another the two turning gears are shifted in the same direction. Should the turning gears of the two counting gears be shifted in opposite directions when for example addition is to be performed with the one counting gear and subtraction with the other, the two levers p and p^1 are disconnected by pressure being applied by the finger to the button k on the lever p^1 and the projection r of the latter being forced away from behind the projection q . The resilient lever p^1 is then pressed into the notch y on the cover and held thereby. When the shifting lever p is shifted by hand the shifting of the second lever p^1 in the opposite direction is effected automatically and the bar s^1 connected therewith by the connecting rod u (Fig. 4) is also shifted. The automatic shifting of the second lever p^1 is effected by the double armed lever m, m^1 as its shorter arm m^1 connected with the connecting rod u must always execute a different movement to that of the lever p which is adjusted by

hand, as the arm m is carried with it by the pin u and the pivot l of the lever m , m' is arranged on the lever p' .

The lever p may be provided with a pin g (Figs. 5 and 6) which is adapted to pass through a slot in a disk h only when the actuating crank of the calculating machine is in initial position in order that during movement of the crank no shifting can take place. By different adjustments of the two levers p , p' different combined calculations can be made simultaneously with the two products-counting-gears.

Having described my invention what I claim and desire to secure by Letters Patent of the United States is:—

1. In a calculating machine of the character described, the combination with a pair of index plates, of indicating disks for each of said index plates, of counting gears carried by said disks, of turning gears, and of means provided for each of said index plates and free of connection therewith for bringing said turning gears into engagement with said counting gears, said means being adapted to cause rotation of the counting gears of one index plate in a direction independent from the direction of rotation of the counting gears of the other index plate, when said turning gears are rotated.

2. In a calculating machine of the character described, the combination with a pair of index plates, of indicating disks for each of said index plates, of counting gears carried

by said disks, of turning gears, and of means provided for each of said index plates for bringing said turning gears into engagement with said counting gears, said means being interlockable with each other and being adapted to cause rotation of the counting gears of one index plate in a direction independent from the direction of rotation of the counting gears of the other index plate, when said turning gears are rotated.

3. In a calculating machine of the character described, the combination with a pair of index plates, of indicating disks for each of said index plates, of counting gears carried by said disks, of turning gears, of means provided for each of said index plates for bringing said turning gears into engagement with said counting gears, said means being adapted to cause rotation of the counting gears of one index plate in a direction independent from the direction of rotation of the counting gears of the other index plate, when said turning gears are rotated, and of a device for preventing a displacement of said means during the operation of the calculating machine.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ROBERT REIN.

Witnesses:

WOLDEMAR HAUPT,
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