

G. E. JOHANSON.
BOOKKEEPING MACHINE.
APPLICATION FILED DEC. 18, 1911.

1,043,601.

Patented Nov. 5, 1912.
3 SHEETS—SHEET 1.

Fig: 1.

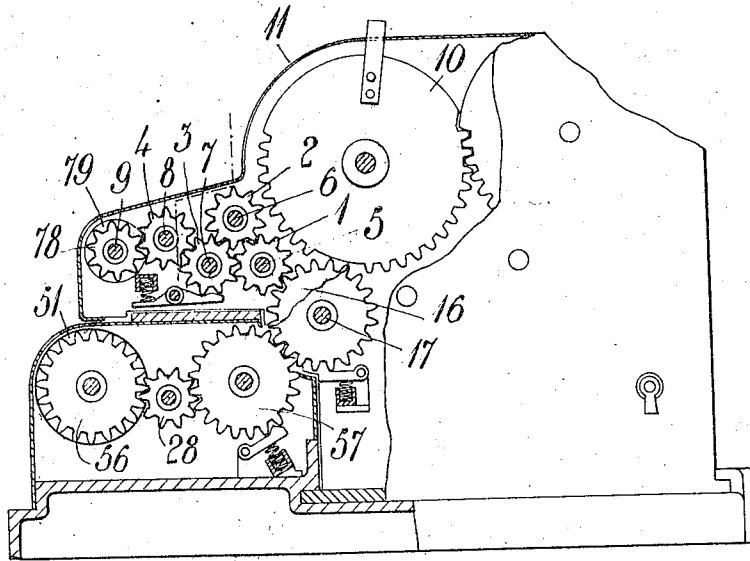
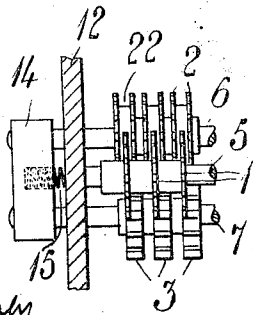
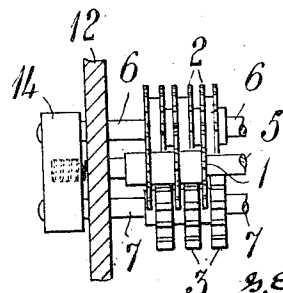


Fig: 5.



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Fig: 6.



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3 SHEETS-SHEET 2.

Fig. 2.

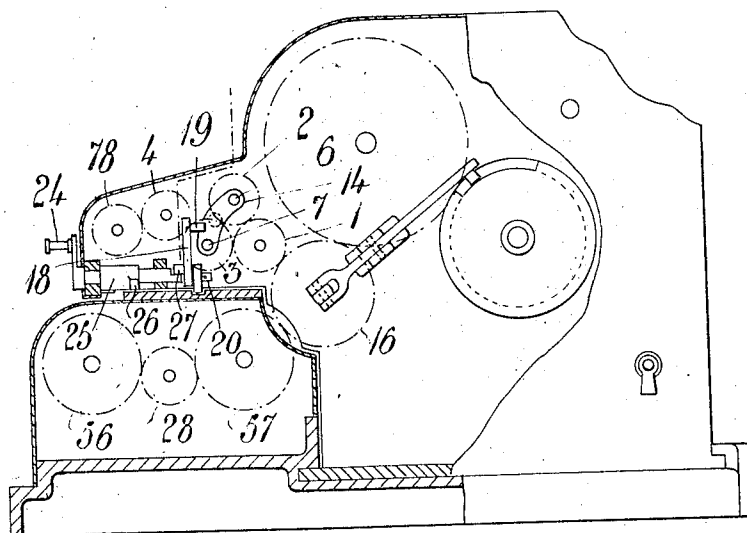


Fig. 7.

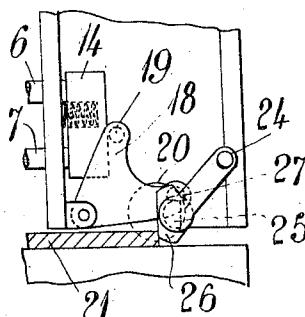
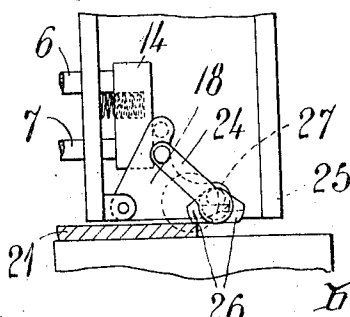


Fig. 8.



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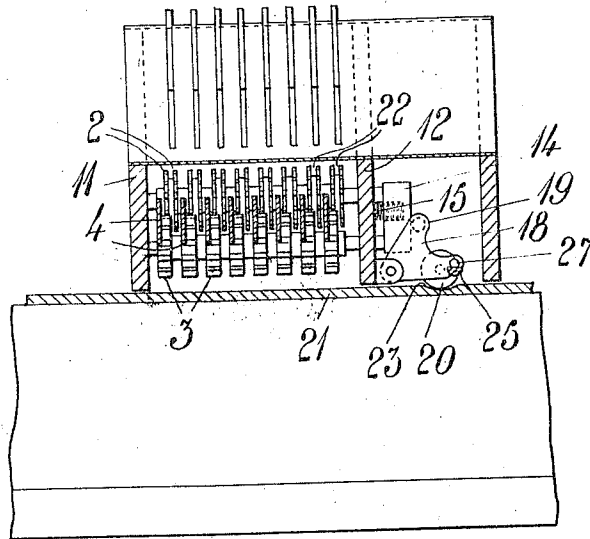
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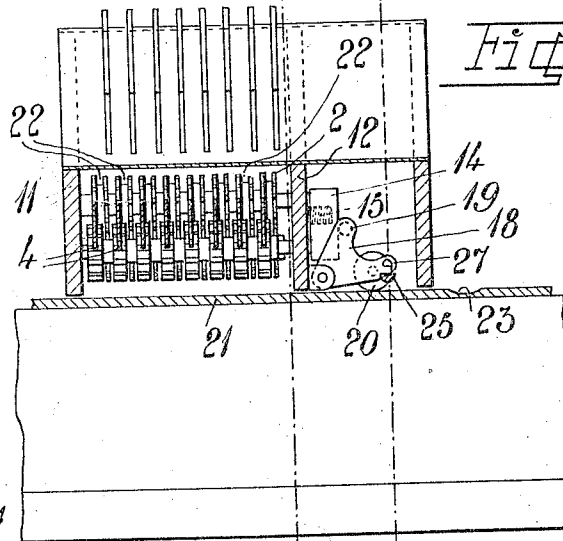
3 SHEETS—SHEET 3.

Fig. 3.



A C

Fig. 4.



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B D

UNITED STATES PATENT OFFICE.

GUSTAF EMANUEL JOHANSON, OF SUNDSVALL, SWEDEN.

BOOKKEEPING-MACHINE.

1,043,601.

Specification of Letters Patent.

Patented Nov. 5, 1912.

Application filed December 18, 1911. Serial No. 666,594.

To all whom it may concern:

Be it known that I, GUSTAF EMANUEL JOHANSON, a citizen of the Kingdom of Sweden, residing at Sundsvall, Sweden, have invented new and useful Improvements in Bookkeeping-Machines, of which the following is a specification.

This invention relates to improvements in the bookkeeping machines set forth in my patent application Serial No. 584517, filed September 29th 1910, the object of the present invention being to simplify the construction and operation of said machines.

The invention consists chiefly in that the checking or control section or sections is or are arranged to be operated directly by the setting section, this being advantageous inasmuch as all subdivisions of the account section may be exactly of one and the same construction. In using only one checking section this may be built together with or connected to the setting section whereby the use of the machine will be essentially simplified.

In the accompanying drawings I have shown one embodiment of my invention.

Figure 1 shows a cross-section on line A—B in Fig. 4 and partly an end view of the machine. Fig. 2 shows a cross-section on line C—D in Fig. 1 and partly an end view of the machine. Figs. 3 and 4 show longitudinal sections of the checking section, with the gears in different positions. Figs. 5 and 6 show on a larger scale details of the checking section in different positions. Figs. 7 and 8 show likewise in a larger scale detail views of the gearings of the checking section in different positions.

In the drawings I have shown only those parts of the machine that are necessary to illustrate the present invention. All parts that have already been described in my before mentioned prior application are indicated by the same reference characters as in said application.

Among other features my novel machine comprises a checking section each toothed wheel 10 of which operates one pair of toothed wheels 16, 16' rotatably mounted on an axle 17 which is movable longitudinally. When the setting section is placed in position opposite a subdivision of the account section, one sixteenth of the wheels of each pair of wheels 16, 16' comes into engagement with one of a series of toothed wheels 57 in said subdivision. These toothed wheels

57 operate by means of intermediate wheels 28 the toothed wheels 56 which are secured to the figure wheels 51. The other wheel 16' of each pair of wheels 16, 16' are in the form shown in the drawing in engagement with a gearing 1, 2, 3, 4 which operates the toothed wheel 78 of the corresponding figure wheel 79 of the checking section. All axles 5, 6, 7, 8 and 9 are journaled in the walls 11 and 12 of the setting section. In as much as the toothed wheels 1 always are operated in one and the same direction by the toothed wheels 16' the gearings between the toothed wheel 2 and the figure wheels 79 must be reversible, so that the direction of rotation of said figure wheels can be changed, according as a debit or credit item is to be recorded in the machine. For this purpose the shafts 6 and 7 in the form shown are movable longitudinally and rigidly secured to each other by means of a cross piece 14 which is actuated by a spring 15 tending to keep the two shafts 6 and 7 in the one end position. In the other direction the said cross piece 14 is actuated by means of an angle lever 18 pivoted to the wall 12 and having at one end a pin 19 which bears against said cross piece, while the other end of the lever 18 carries a roller which bears on a strip 21 provided on the account section. Each of the wheels 2 has two rings of teeth separated by an annular groove 22 of at least the same depth as the height of the teeth, while the width of the teeth of the wheels 1 is somewhat smaller than the width of the grooves 22. In position of the shafts 6 and 7 (Figs. 3 and 5) the toothed wheels 1 are placed opposite the grooves 22 of the wheels 2, in which case the movement of the toothed wheels 16' is transmitted to the figure wheels 79 or the toothed wheels 78 thereof by means of the toothed wheels 1, 3 and 4. In the other position of the shafts 6 and 7 (Figs. 4 and 6) each toothed wheel 1 engages one ring of teeth of the corresponding toothed wheel 2, while the toothed wheels 3 are brought out of engagement with the wheels 1. In this case the movement of the toothed wheels 16' is transmitted to the figure wheels 79 or the toothed wheels 78 thereof by means of the toothed wheels 1, 2, 3 and 4 so that the figure wheels 79 are rotated in a direction opposite to that in which they were rotated in the former case. The reversal of the direction of rotation of the figure wheels 79

is accomplished automatically incidental to the placing of the setting section in position opposite a subdivision of the account section corresponding for instance to the debit of an account, when the roller 20 of the angle lever 18 runs down into a recess 23 of the strip 21, as is shown in Fig. 3, and the spring 15 displaces the axles 6 and 7 from the position shown in Figs. 4 and 6 to the position shown in Figs. 3 and 5. As soon as the roller 20 runs up from a recess 23, the angle lever pulls back the shafts 6 and 7 into the position shown in Figs. 4 and 6. Recesses 23 are provided only for such subdivisions of the account section as correspond to the debit of the accounts or only for such subdivisions as correspond to the credit of the accounts.

In order that the checking system may be used in making additions or subtractions by means of the addition and subtraction section shown in the before mentioned application the checking section must be provided with means allowing it to be adjusted manually for addition and subtraction. This adjustment however should not be possible until the checking section has been placed in position opposite the said addition and subtraction section. For this purpose the following arrangement is made. In the checking section is journaled an axle 25 having a crank 24 and two lateral projections 26 which bear on or are in close proximity of the strip 21 thereby preventing the axle 25 from being turned by means of the crank 24. The strip 21 does not extend over the said addition and subtraction section, and therefore the axle 25 can be turned by means of the crank 24 when the checking section has been placed in position opposite the addition and subtraction section. The angle lever 18 has a pin 27 which in the position of the crank 24 shown in Figs. 2 and 8 bears on an eccentric surface at the inner end of the axle 25. When the crank 24 is turned into the position shown in Fig. 7, the said pin 27 is raised by the axle 25, as is evident from Fig. 7, whereby the angle lever 18 is caused to displace the axles 6 and 7 in the same manner as when the roller 20 runs up from a recess 23. As long as the checking section stands opposite the addition and subtraction section, it is thus possible to adjust the checking section for addition or subtraction at will by means of the crank 24. If the latter when the checking section is moved back to the subdivisions of the account section to the position shown in Fig. 7, the projection 26 of the axle 25 will strike

the end of the strip 21, as is illustrated in Fig. 7, whereupon it will cause the crank 24 to be turned into the position shown in Fig. 8, in which the axle 25 is kept locked until the checking section again is placed in position opposite the addition and subtraction section.

Instead of being arranged in the setting section the checking section may be made as a separate part of the machine which may be slidable on the setting section or on the account section. For adjusting the checking section automatically from addition to subtraction and vice versa any arbitrary means may be used. For the means described for manually adjusting the same section from addition to subtraction and vice versa any other suitable means may be substituted. If desired one may, as described in my before mentioned application, provide two or more checking sections in which case the means for automatically adjusting said sections from addition to subtraction may be dispensed with, in as much as in this case one checking section may be arranged to record all debit items and another all credit items.

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

1. A book-keeping machine having a checking section, a setting section and an account section; the checking section being operable directly by the setting section, and means for automatically adjusting the checking section from addition to subtraction and vice versa according as same is placed opposite a subdivision of the account section corresponding to the debit or credit of an account.

2. A book-keeping machine having a checking section, and a setting section; the checking section being operable directly by the setting section and being provided with means for adjusting it manually from addition to subtraction and vice versa, and a locking mechanism constructed to prevent the checking section from being adjusted manually from addition to subtraction and vice versa until said section is placed in a certain position.

In testimony that I claim the foregoing as my invention, I have signed my name in presence of two subscribing witnesses.

GUSTAF EMANUEL JOHANSON.

Witnesses:

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H. S. NAUMAN.