

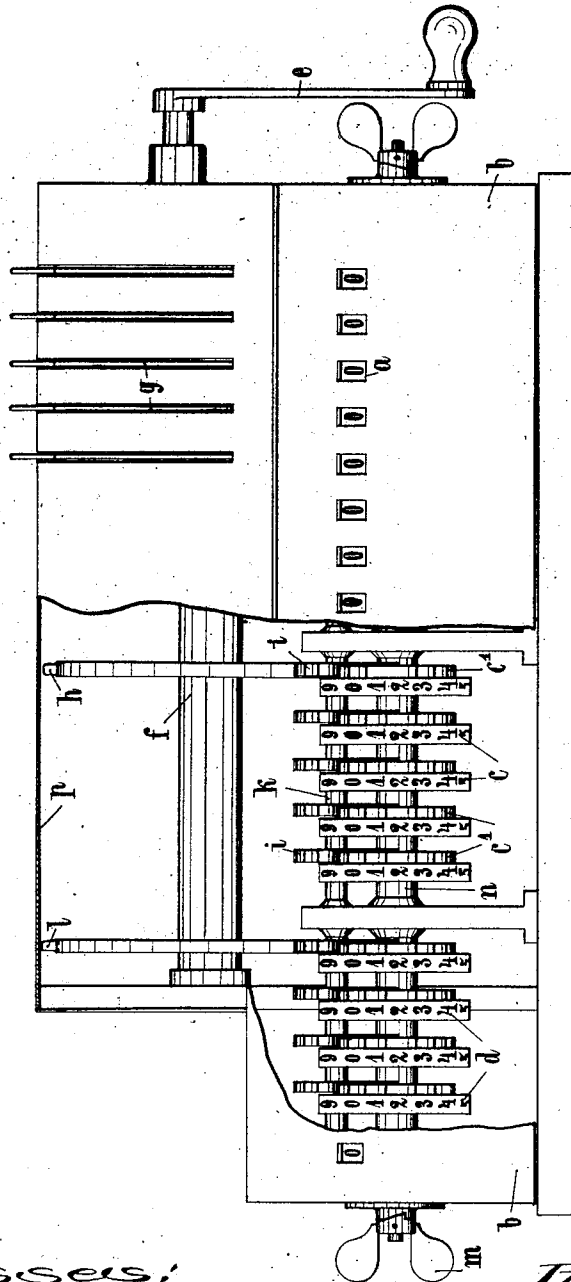
F. TRINKS.  
 CALCULATING MACHINE.  
 APPLICATION FILED APR. 10, 1912.

1,051,785.

Patented Jan. 28, 1913.

2 SHEETS—SHEET 1.

Fig. 1.



Witnesses:  
*[Signature]*  
*[Signature]*

Inventor  
 Franz Trinks  
 by *[Signature]*  
 Atty.

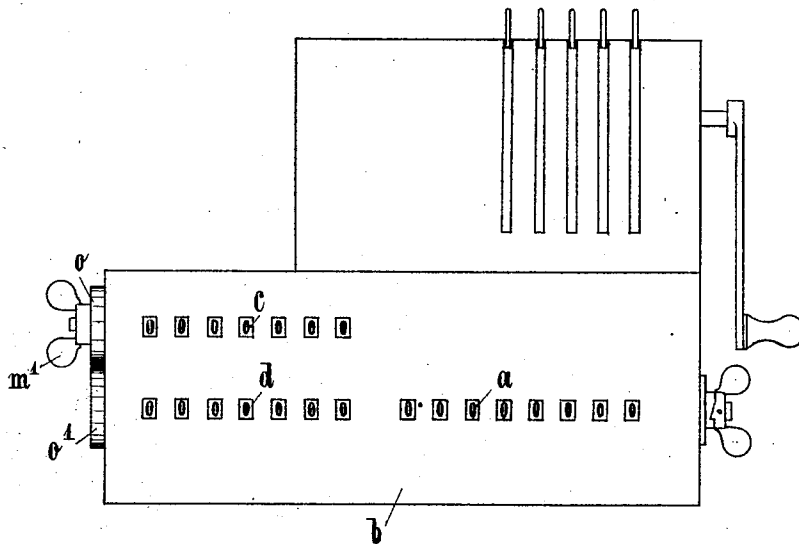
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2 SHEETS—SHEET 2.

Fig. 2.



Witnesses

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# UNITED STATES PATENT OFFICE.

FRANZ TRINKS, OF BRUNSWICK, GERMANY.

## CALCULATING-MACHINE.

1,051,785.

Specification of Letters Patent. Patented Jan. 28, 1913.

Application filed April 10, 1912. Serial No. 689,853.

*To all whom it may concern:*

Be it known that I, FRANZ TRINKS, manufacturer, subject of the Duchy of Brunswick, Empire of Germany, residing at 71 Kastanienallee, Brunswick, Germany, have invented certain new and useful Improvements in Calculating-Machines, of which the following is a specification.

My invention relates to improvements in calculating machines, and more particularly in calculating machines of the class shown and described in the patent of the United States No. 975,180 granted to me Nov. 8, 1910, in which the registering mechanism is mounted on a movable carriage.

Heretofore calculating machines have been constructed, in which two revolutions counting mechanisms were provided. Such a machine is described in the said patent of the United States No. 975,180 granted to me November 8, 1910. As described in my said previous patent the second revolutions counting mechanism is mounted on the stationary frame of the machine. Thereby a complicated operating mechanism for the second revolutions counting mechanism is necessary, because, when shifting the carriage, and thereby changing the denominations of the registering disks accordingly, the operating mechanism for the revolutions counting mechanism must also be displaced. The object of the improvements is to provide a calculating machine of this class in which the second revolutions counting mechanism is mounted on the movable carriage supporting the registering mechanism. Thereby the single tooth wheels by means of which the disks of the revolutions counting mechanism are operated may be mounted on the shaft of the setting disks or on a shaft parallel thereto and movable therewith, whereby the construction of the machine is made more simple.

For the purpose of explaining my invention more in detail an example of a calculating machine embodying the same has been shown in the accompanying drawings, in which the same letters of reference have been used in all the views to indicate corresponding parts.

In the drawings only those parts of the calculating machine have been shown which are necessary for explaining the invention, reference being had as to the general construction of the machine to my aforesaid patents.

In the said drawings—Figure 1, is a front view of a calculating machine with the cover partly removed, and Fig. 2, is a diagrammatical view showing a modification of the invention.

Referring more particularly to the example illustrated in Fig. 1, the setting mechanism consists of a plurality of setting disks *g* which are mounted on a common shaft *f* adapted to be rotated by means of a crank *e*. Each of the said disks is provided with nine teeth which are normally in inoperative position. In performing a calculation the number of teeth which corresponds to the value to be entered into the calculation are shifted into operative position. On a carriage or slide *b* a registering mechanism *a* and a revolutions counting mechanism *c* are located, and the said carriage is shiftable in a direction parallel to the setting mechanism *g*.

When setting the desired number on the setting disks of the setting mechanism *g*, and rotating the setting disks by means of the crank *e*, the registering mechanism is operated. For operating the revolutions counting mechanism *c* a single tooth *h* is provided on the shaft *f*, by means of which either one of the wheels *c* of the revolutions counting mechanism is shifted forward or backward one step for each revolution of the crank, according to the direction of the rotation of the crank. The movement of the shaft *f* is transmitted to the revolutions counting mechanism *c* through the intermediary of gear wheels *i* which are loosely mounted on a shaft *k* disposed on the carriage *b* and parallel to the shaft *f*. The said gear wheels are in mesh with gear wheels *c'* secured to or made integral with the disks *c*. By shifting the carriage *b* to the right, either one of the said gear wheels *i* and counting disks *c* can be thrown into engagement with the single tooth *h*.

The parts of the calculating machine so far described are known in the art and therefore need no detailed description.

Referring now to those parts to which my invention more particularly relates, the carriage *b* carries a second revolutions counting mechanism *d* apart from the revolutions counting mechanism *c*, and the said secondary revolutions counting mechanism is adapted to be operated by a single tooth *l* of its own. In the example illustrated in Fig. 1 the said secondary revolutions count-

ing mechanism is disposed coaxially of the main revolutions counting mechanism, and its operating tooth *l* is arranged on the shaft

But I wish it to be understood, that my invention is not limited to the construction shown, and that the said tooth may be provided on a separate shaft disposed parallel to the shaft *f* and operatively connected therewith in a suitable way, for example by means of gear wheels.

In the example shown in Fig. 2 the revolutions counting mechanisms are not disposed on the same axis, but one above the other, and they may be operated either by separate single teeth, or by a single one.

Either one of the revolutions counting mechanisms or both of them may be provided with carrying mechanisms. The object of such carrying mechanisms has been explained in detail in my aforesaid Patent No. 975,180.

Resetting of the counting mechanisms may be effected either by separate or by common means. In the example shown in Fig. 1 the counting mechanisms are simultaneously reset by rotating a thumb nut *m* which is connected with the shaft *n* carrying both revolutions counting mechanisms. In the example shown in Fig. 2 either separate or common resetting mechanisms may be provided. Where common resetting mechanisms are provided the shafts are preferably connected with each other by spur gears *o* and *o'*, and either one of them is equipped with a thumb nut *m'*.

In some cases it will be advantageous to provide a separate setting mechanism within the stationary frame of the machine and adjacent to the revolutions counting mechanism provided with carrying means. By means of such a machine several calculations can be performed simultaneously, because

the revolutions counting mechanism which is provided with carrying means may be used in the same way as the registering mechanism *a*.

I claim herein as my invention:

1. In a calculating machine, the combination with setting mechanism, of a carriage movable along said mechanism, registering mechanism on the carriage and arranged for coöperation with the setting mechanism, main revolutions counting mechanism on the carriage, and a secondary revolutions counting mechanism apart from the main revolutions counting mechanism and mounted on the carriage, the revolutions counting mechanisms having independent operating means.

2. In a calculating machine, the combination with setting mechanism, of a carriage movable along said setting mechanism, registering mechanism on said carriage and arranged to coöperate with the setting mechanism, main revolutions counting mechanism mounted on the said carriage, secondary revolutions counting mechanism on the carriage, carrying mechanism for said secondary revolutions counting mechanism, and secondary setting mechanism for operating the secondary revolutions counting mechanism, all of the registering and revolutions counting mechanisms being shiftable with the carriage, the revolutions counting mechanism being operative by the toothed wheels on a single shaft.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

FRANZ TRINKS.

Witnesses:

WILHELM LEHRKE,  
JULIUS SECKEL.