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 RESETTING MECHANISM FOR CALCULATING MACHINES.
 APPLICATION FILED OCT. 15, 1912.

1,061,137.

Patented May 6, 1913.

Fig. 1.

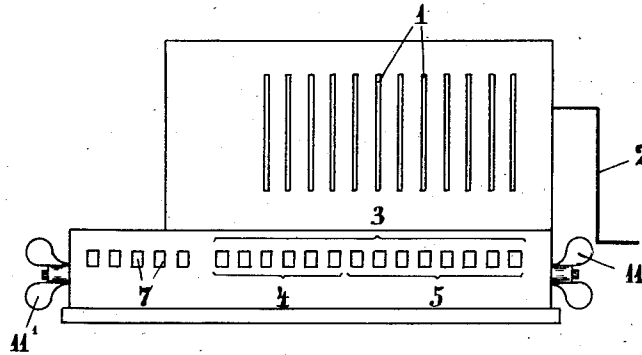


Fig. 3.

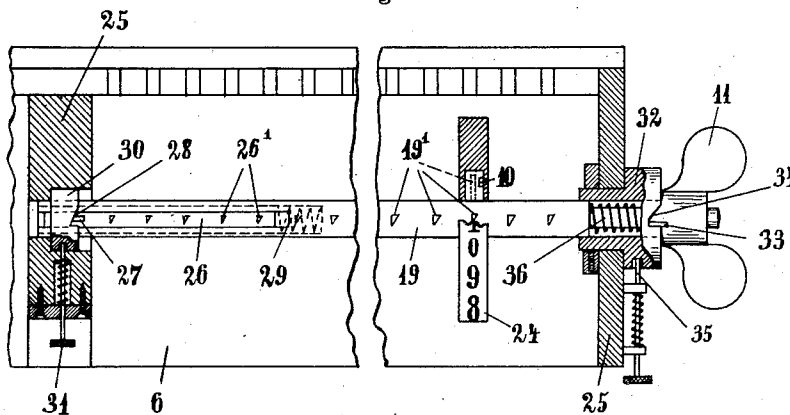
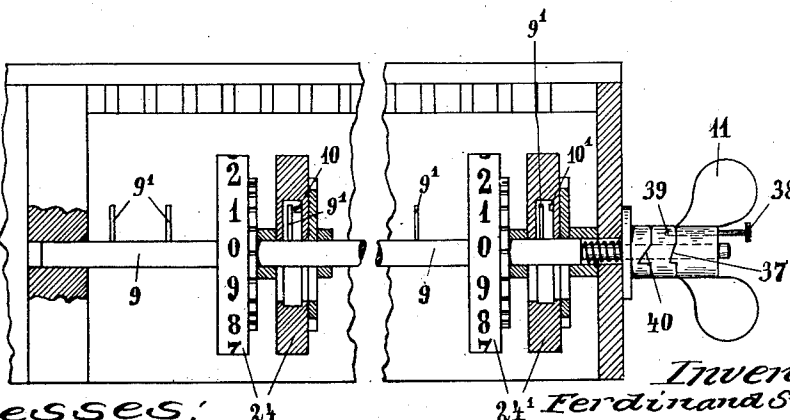


Fig. 2.



Witnesses:
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UNITED STATES PATENT OFFICE.

FERDINAND STEMMLER AND CARL SCHALLER, OF BRUNSWICK, GERMANY, ASSIGN-
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RESETTING MECHANISM FOR CALCULATING-MACHINES.

1,061,137.

Specification of Letters Patent.

Patented May 6, 1913.

Application filed October 15, 1912. Serial No. 725,862.

To all whom it may concern:

Be it known that we, FERDINAND STEMMLER, locksmith, and CARL SCHALLER, work-
master, citizens of the Duchy of Brunswick,
5 Empire of Germany, residing at Brunswick,
Germany, have invented certain new and
useful Improvements in Resetting Mecha-
nisms for Calculating-Machines, of which
the following is a specification.

10 Our invention relates to improvements in
resetting mechanisms for calculating ma-
chines, and more particularly in calculating
machines of the class described in the United
States patent to Trinks, No. 1,022,280,
15 granted February 8, 1912, in which by
means of a single registering mechanism
continuous multiplications and additions
can simultaneously be performed. As de-
scribed in the specification of the said pat-
20 ent a part of the numeral wheels of the
main registering mechanism can independ-
ently be reset.

The object of the present improvements is
to provide a resetting mechanism of simple
25 construction. With this object in view our
invention consists in so constructing the re-
setting means, that the continuous resetting
shaft which carries both sections of the main
registering mechanism is adapted to reset
30 the numeral wheels of both sections. For
this purpose two cams are arranged for co-
operation with the resetting devices one of
which is thrown into operation to reset the
numeral wheels of one set, ordinarily those
35 of the left one, while the other one is thrown
into operation for resetting the numeral
wheels of the other set, that is those of the
right one, or simultaneously both sets.

In order that our invention be more
40 clearly understood, two examples embody-
ing the same have been shown in the accom-
panying drawing, in which the same letters
of reference have been used in all the views
to indicate corresponding parts.

45 In said drawing—Figure 1, is a diagram-
matical front view of the machine illustrat-
ing the general arrangement of the setting
mechanism, the registering mechanism with
its two sets of numeral wheels, and the rev-
50 olutions counting mechanism, Fig. 2, is a
horizontal section of the main registering
mechanism in which for the matter of clear-
ness all the numeral wheels except four have
been omitted, and Fig. 3, is a similar hori-

zontal cross-section of the registering mech- 55
anism showing a modification of the inven-
tion, said section showing only one of the
numeral wheels.

The main parts of the calculating machine
illustrated diagrammatically in Fig. 1 and 60
described for example in the specification of
the aforesaid Letters Patent No. 1,022,280
to Trinks are the setting mechanism 1 dis-
posed in the upper part of the casing of the
machine and adapted to be operated by a 65
crank 2, the main registering mechanism 3
provided with carrying means and compris-
ing two sets 4 and 5 of numeral wheels, the
revolutions counting mechanism 7, and the
resetting mechanisms of the registering 70
mechanism and revolutions counting mecha-
nism indicated by the thumb nuts 11 and 11¹
operating the same. These parts are known
in the art and therefore need no detailed de-
scription. 75

Referring more particularly to the em-
bodiment of our invention illustrated in
Fig. 2, all the numeral wheels 24 and 24¹ of
the registering mechanism are mounted on
an undivided resetting shaft 9. The latter 80
is equipped with pins 9¹ one for each of the
numeral wheels and coöperating each with a
nose 10 or 10¹ provided on the numeral
wheels. As is known in the art the said
pins are adapted to carry the numeral wheels 85
along when the shaft 9 is turned for reset-
ting the numeral wheels. As appears from
the figure, all the noses 10 and 10¹ of the two
sets of numeral wheels are made of different
lengths, the noses 10 of the numeral wheels 90
of the left hand set being about twice as
long as the noses 10¹ of the right hand set of
numeral wheels 24¹, and accordingly the
pins 9¹ of the shaft 9 are at a greater dis-
tance away from the noses 10¹ than from the 95
noses 10.

As is known in the art, when for the pur-
pose of resetting the numeral wheels the
shaft 9 is turned by means of a thumb nut
11 secured thereto, it is at first shifted to 100
the right a certain distance by the cam face
37. In the present case by this shifting
movement only the pins 9¹ of the left hand
set of numeral wheels are shifted into posi-
tion for coöperation with the abutments 10 105
of the coöperating numeral wheels 24, while
the pins 9¹ and the coöperating noses 10¹ do
not get into position for engagement with

each other. Therefore only the numeral wheels 24 of the left hand set are reset by the rotation of the resetting shaft 9, while the numeral wheels 24¹ of the right hand set remain in their original positions.

To enable the operator to reset the numeral wheels 24¹ of the right hand set we provide means whereby the resetting shaft can be shifted a greater distance to the right, which means consist, in the example illustrated in Fig. 2, of a secondary pair of cam faces adapted to be thrown into operation when it is desired to shift the pins 9¹ of the right hand set of numeral wheels into operative position. As shown a sleeve 39 is loosely mounted on the shaft 9 adjacent to the thumb nut 11, and this sleeve is adapted to be connected to the said thumb nut by means of a pin 38. The sleeve is formed at both ends with cam faces 37 and 40, and the cam face 40 has a greater inclination and depth than the cam face 37. When turning the thumb nut the sleeve 39 ordinarily remains stationary so that the cam face 37 is operative. But when the sleeve 39 is coupled with the nut 11, it takes part in the rotation of the nut, so that the thumb nut and the shaft 9 are shifted to the right a distance which corresponds to the depth of the cam face 40. Thereby also the pins 9¹ cooperating with the numeral wheels 24¹ of the right hand set are shifted sufficiently to engage the corresponding noses 10¹. Therefore both sets of numeral wheels are simultaneously reset.

In the example shown in Fig. 3 all the numeral wheels 24 forming the registering mechanism are located on a shaft 19 which is equipped with pins 19¹ and is loosely mounted in the side walls 25 of the carriage 6. At its left hand end the shaft 19 is made hollow, and within its hollow portion it receives a longitudinally shiftable shaft 26 which carries pins 26¹ projecting through a longitudinal slot in the shaft 19 and arranged for cooperation with the numeral wheels of the left hand section of the registering mechanism. The resetting pins 19¹ of the numeral wheels of the right hand set are secured to the right hand part of the shaft 19. The shaft 26 is adapted to be shifted longitudinally of the shaft 19 against the action of a spring 29 by means of a cam located at its left hand end and cooperating with a pin 27 secured to the shaft 26. The cam is formed on a rotatably mounted sleeve 30 adapted to be locked against rotation by means of a spring actuated pin 31. The right hand end of the shaft 19 is guided within a sleeve 32 loosely mounted within the side wall 25 of the carriage 6, and it is equipped with a thumb nut 11 and a nose 33 engaging a cam face 34 formed on the sleeve 32. The latter can be locked against rotation by means of a spring actuated pin 35 slid-

ably mounted at the outside of the wall 25 of the carriage.

If it is desired to simultaneously reset the numeral wheels 24 of both sets, both pins 31 and 35 are set into locking position, as is shown in Fig. 3, and the thumb nut 11 is operated to perform a complete revolution. Thereby the shaft 19 engaging with its nose 33 the cam face 34 and the shaft 26 engaging with its pin 27 the cam face 28 are simultaneously shifted in a longitudinal direction toward the right. Thereby the pins 19¹ and 26¹ are respectively brought into engagement with the corresponding noses 10 of the numeral wheels 24, so that all the numeral wheels are simultaneously reset.

If it is desired to reset only the numeral wheels of the right hand set the locking pin 31 is withdrawn out of locking position relatively to the sleeve 30. If now the thumb nut 11 performs a complete revolution, the inner shaft 26 is not shifted, because the sleeve 30 is free to take part in the rotation of the shaft 26. The sleeve 32 being locked by its pin 35, the shaft 19 is shifted to the right, so that the numeral wheels of the right hand set are reset.

If it is desired to reset exclusively the numeral wheels of the left hand set, the locking pin 35 is withdrawn from the sleeve 32, so that the latter is free to rotate within the side wall 25, and the pin 31 is set into locking position. If now the thumb nut 11 is turned, the shaft 19 is rotated without being shifted, and the rotation of the shaft 19 is imparted to the shaft 26. The latter is shifted by means of the sleeve 30 which is locked by means of the pin 31.

The construction shown in Fig. 3 is preferable as compared to the construction shown in Fig. 2, as will readily be understood from the following: If on the main registering mechanism 3 two calculations are simultaneously performed, and an error occurs on the section 5 of the registering mechanism shown in Fig. 1, the numeral wheels of which can not independently be reset, the whole result must be removed from the registering mechanism and the calculation must be made over again, because the numeral wheels 24¹ of Fig. 2, which correspond to the section 5 of Fig. 1, can not separately be reset. In the construction shown in Fig. 3 it is in such cases not necessary to remove the whole result, because the numeral wheels of both sets can be simultaneously reset, and the numeral wheels of each set can be reset independently of the other one.

While in describing the invention we have shown two examples which in our opinion serve the purpose best, we wish it to be understood, that our invention is not limited to the constructions shown in the drawing, and that various changes may be made without departing from the gist of our inven-

tion. For example, the means for simultaneously or independently shifting the numeral wheels of both sets may be replaced by other known or preferred means.

5 We claim herein as our invention:

1. In a calculating machine, the combination with a registering mechanism comprising a plurality of groups of registering elements, and a single continuous member carrying all the said registering elements, of resetting devices on said member one for each of said registering elements and normally out of cooperation therewith, means for moving said member bodily in one direction to shift the resetting devices of one group of registering elements into resetting engagement with their registering elements independently of the resetting devices of another group, and means to simultaneously shift the resetting devices of all the registering elements into resetting position.

2. In a calculating machine, the combination with the registering mechanism comprising two sets of numeral wheels, of a single, continuous rotary shaft carrying all the said numeral wheels, resetting devices on said shaft one for each of the numeral wheels, means for moving said shaft bodily in one direction to shift the resetting devices of the numeral wheels of one set into resetting engagement with their numeral wheels independently of the resetting means of the numeral wheels of the other set, and means to simultaneously shift the resetting devices of all the numeral wheels into resetting position.

3. In a calculating machine, the combination with the registering mechanism comprising two sets of numeral wheels, of a rotary shaft carrying the numeral wheels of both sets, resetting devices on said shaft arranged for cooperation with the numeral wheels of one set, a member shiftable in said shaft and carrying resetting devices 45 for the other set of numeral wheels, means to shift said shaft with its resetting devices

into resetting position, means to shift said member with its resetting devices into resetting position, and means independent of each other to throw said shifting means for the resetting devices of both sets of numeral wheels into inoperative positions.

4. In a calculating machine, the combination with the registering mechanism comprising two sets of numeral wheels, of a rotary shaft carrying the numeral wheels of both sets and having a hollow or tubular part, resetting devices on said shaft arranged for cooperation with the numeral wheels of one set, a member shiftable within said hollow or tubular part of said shaft and carrying resetting devices for the other set of numeral wheels, cams to shift said shaft and member with their resetting devices into resetting positions, and means independent of each other to throw said cams into inoperative positions.

5. In a calculating machine, the combination with the registering mechanism comprising two sets of numeral wheels, of a rotary shaft carrying the numeral wheels of both sets, resetting devices on said shaft arranged for cooperation with the numeral wheels of one set, a spring actuated member shiftable in said shaft and carrying resetting devices for the other set of numeral wheels, means to shift said shaft with its resetting devices into resetting position, means to shift said member with its resetting devices into resetting position, and means independent of each other to throw said shifting means for the resetting devices of both sets of numeral wheels into inoperative positions.

In testimony whereof we have hereunto set our hands in presence of two subscribing witnesses.

FERDINAND STEMMLER.
CARL SCHALLER.

Witnesses:

WILHELM LEHSKE,
JULIUS SECKEL.