R. REIN.

CALCULATING MACHINE.

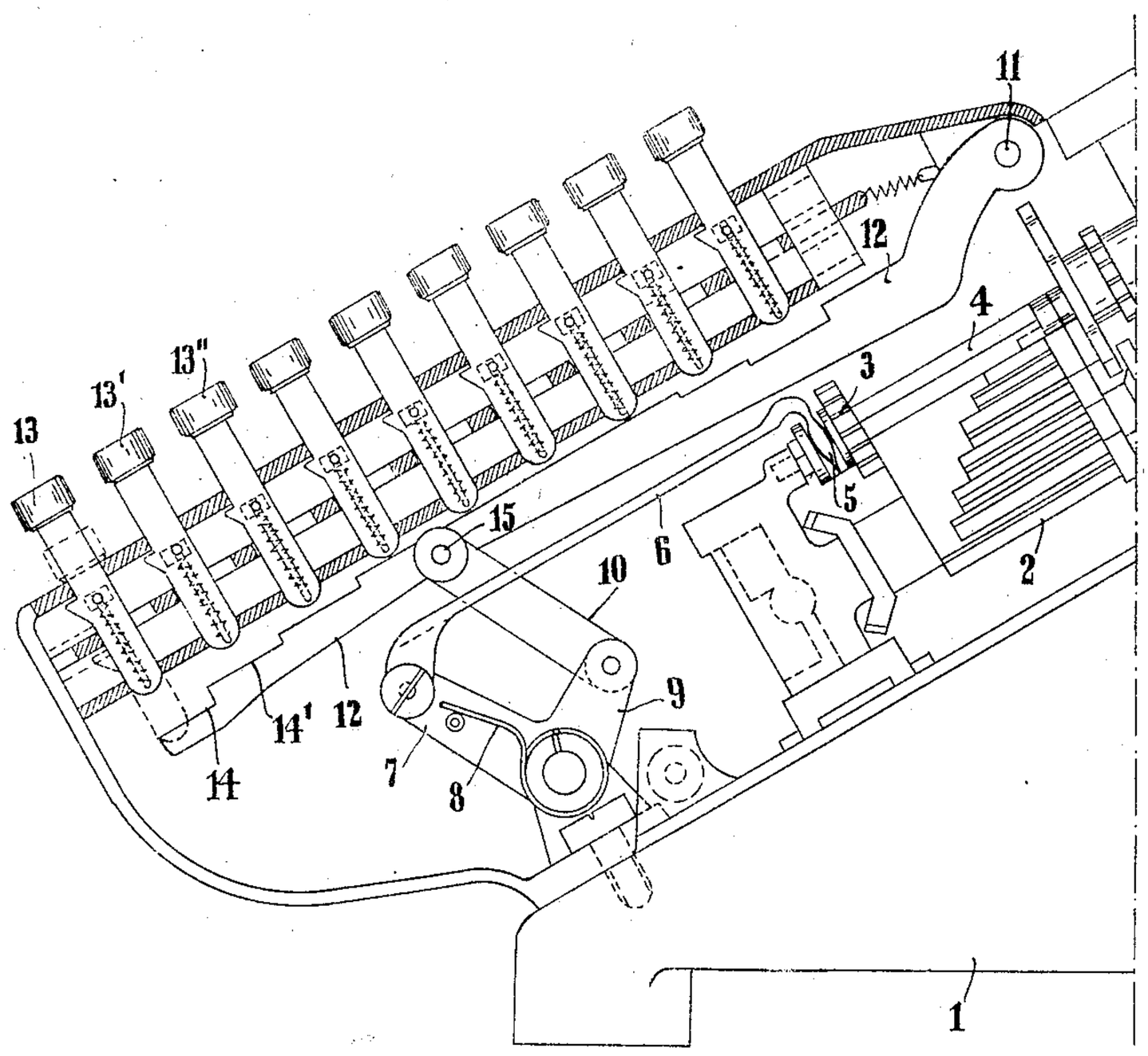
APPLICATION FILED JULY 28, 1913.

1,166,715.

Patented Jan. 4, 1916.

2 SHEETS—SHEET 1.

Fig. 1.



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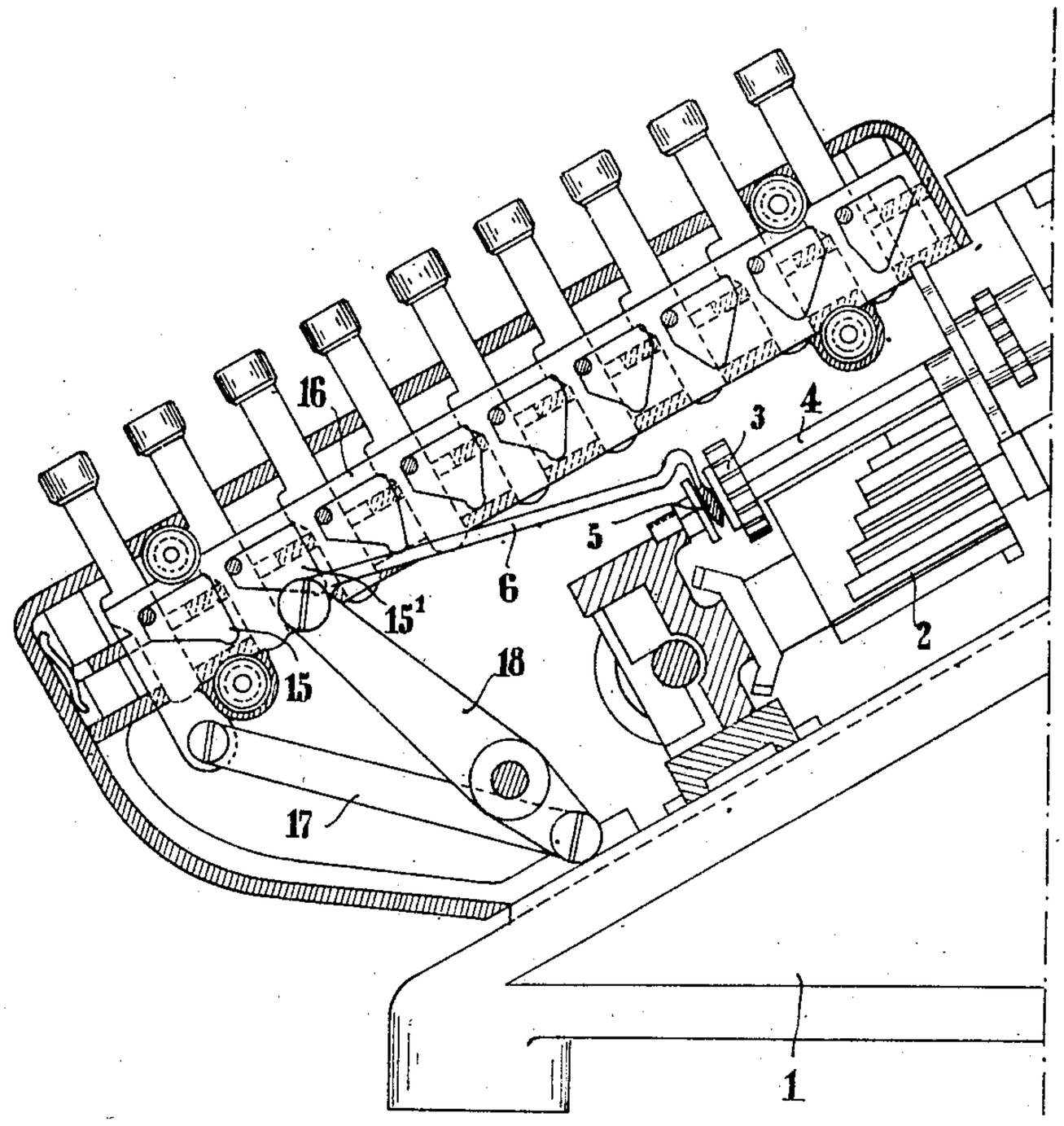
2 SHEETS—SHEET 2.

Fig. 2.



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UNITED STATES PATENT OFFICE.

ROBERT REIN, OF BERLIN, GERMANY, ASSIGNOR TO LUDWIG SPITZ & CO. G. M. B. H., OF BERLIN, GERMANY.

CALCULATING-MACHINE.

1,166,715. Specification of Letters Patent. Patented Jan. 4, 1916.

Application filed July 28, 1913. Serial No. 781,565.

To all whom it may concern:

Be it known that I, ROBERT REIN, a subject of the German Emperor, residing at Puttkamerstrasse 19, Berlin, Germany, have invented certain new and useful Improvements in Calculating-Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which is appertains to make and use the same.

It has already been proposed to effect the setting of the setting wheels from the keys of calculating machines of the Thomas type in very many different ways.

The object of the present invention is to effect this setting by very simple means and in such a manner that, after one key has been set, on pressing down a preceding and next following key, the setting wheel is positively moved into a position corresponding to the key, so that for the purposes of effecting a fresh setting it is not necessary to first move the parts back to the zero position, while at the same time, the setting back of the setting wheel to the zero position in combinations or groups by means of a special release lever (compare German Imperial Patent 218146) is not prevented. The solution of the required problem is effected in this case by providing beneath the row of keys a stepped swinging lever, the swinging motion of which is transmitted by means of linkwork and bell crank levers to the pressing or controlling rod of the setting wheel.

Referring to the accompanying drawing in which two methods of carrying the invention into effect are shown by way of example: Figure 1 shows first method of carrying out the invention, partly in section and partly in elevation; Fig. 2 shows another method of carrying out the invention.

Referring particularly to Fig. 1 in which—

1 is a base plate.

2 is a stepped wheel.

3 is a setting wheel which can be slid along a rectangular spindle 4 up to the stepped wheel, the sliding being effected by the pressing or controlling rod 6 which is provided with a fork 5 adapted to engage with the said wheel. The pressing rod 6 is connected to the arm 7 of a bell crank lever.

8 is a spring which tends to swing the bell crank lever back to the zero position. The other arm 9 of the said bell crank lever is connected by means of a link 10 to a lever 12 pivoted in bearings 11 on the framework. The lever 12 is provided with steps 14, 14^1, etc., coming beneath the keys 13, 13^1, etc., for effecting the setting, and on depressing the keys, the pivotal point 15 on the lever 12 is moved through an arc which corresponds to the number on the key depressed. The result is that the pressing rod 6 is positively moved forward through a distance corresponding to the numerical value of the key depressed bringing the setting wheel into the required position.

Instead of providing a swinging lever 12 furnished with steps 14, 14^1, the same result may be obtained, as illustrated in Fig. 2, by providing a rod 16 having cut away portions 15, 15^1 the rod being mounted so that it can slide longitudinally. This movement of the rod through a distance corresponding to the value of a key depressed is communicated to the pressing or controlling rod 6 either directly or by means of intermediate levers 17, 18.

By the employment of a swinging lever furnished with steps or of a rod having corresponding cut away portions and adapted to be slid longitudinally, it is possible, without altering the construction of the Thomas machine except by correspondingly broadening the front setting plate, to provide for the said machine, setting mechanism adapted to be positively operated by the keys, possessing the advantages set forth in the introduction.

What I claim and desire to secure by Letters Patent of the United States of America is:—

In a calculating machine of the Thomas type, in combination with the setting wheel

and setting keys thereof, a movable rod or lever mounted below said keys and adapted to be moved upon the depression of the keys through a distance corresponding to the value of the depressed key, a pivot on said lever, a bell crank lever having one arm connected to the pivot on said lever, a rod controlling the movements of the setting wheel to which the second arm of said bell crank lever is connected.

In testimony whereof, I affix my signature, in presence of two witnesses.

ROBERT REIN.

Witnesses:
HENRY HASPER,
WOLDEMAR HAUPT.