No. 875,075.

PATENTED DEC. 31, 1907.

W. R. HEINITZ.

CASH REGISTER.

APPLICATION FILED JULY 11, 1906.

2 SHEETS—SHEET 1.

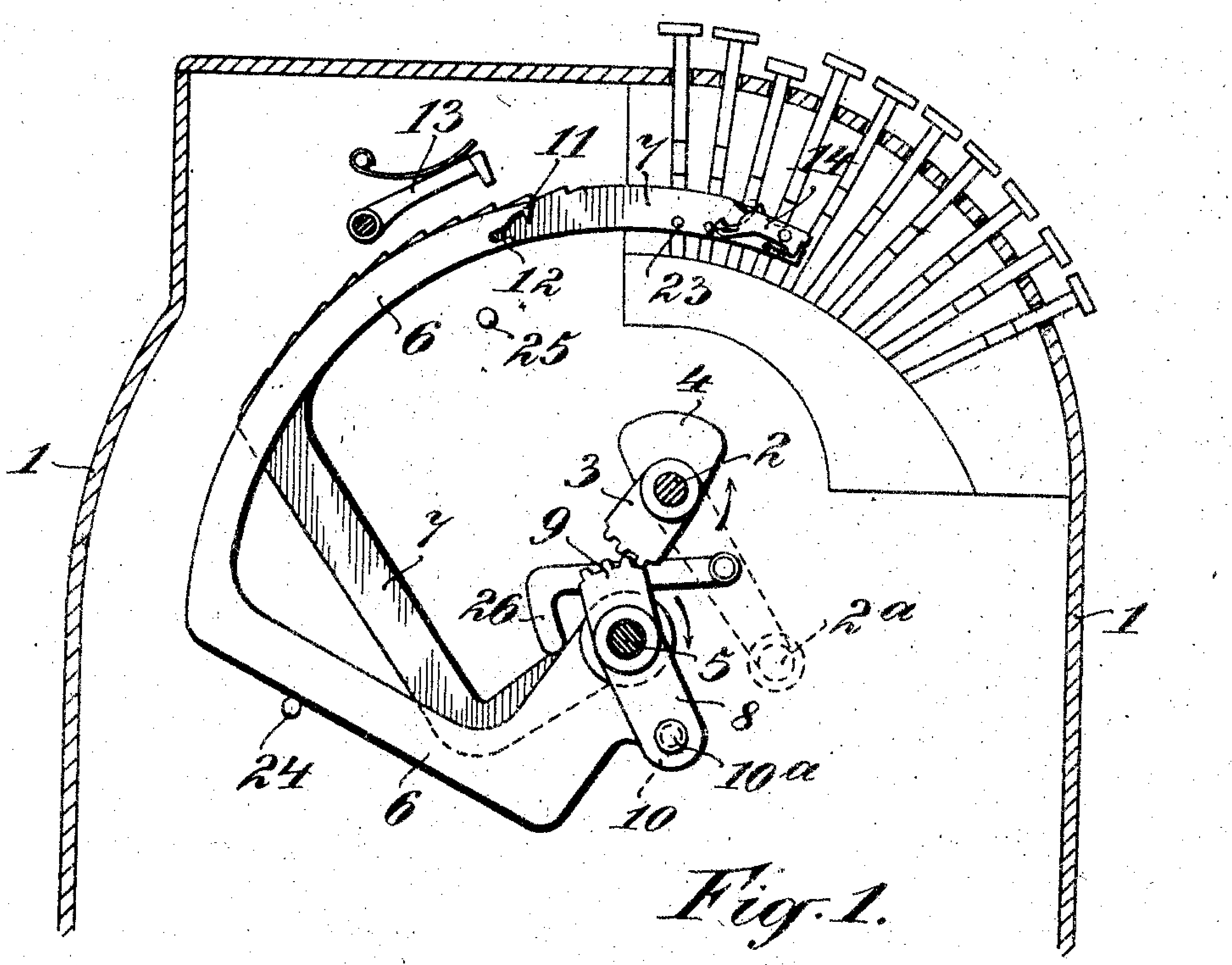
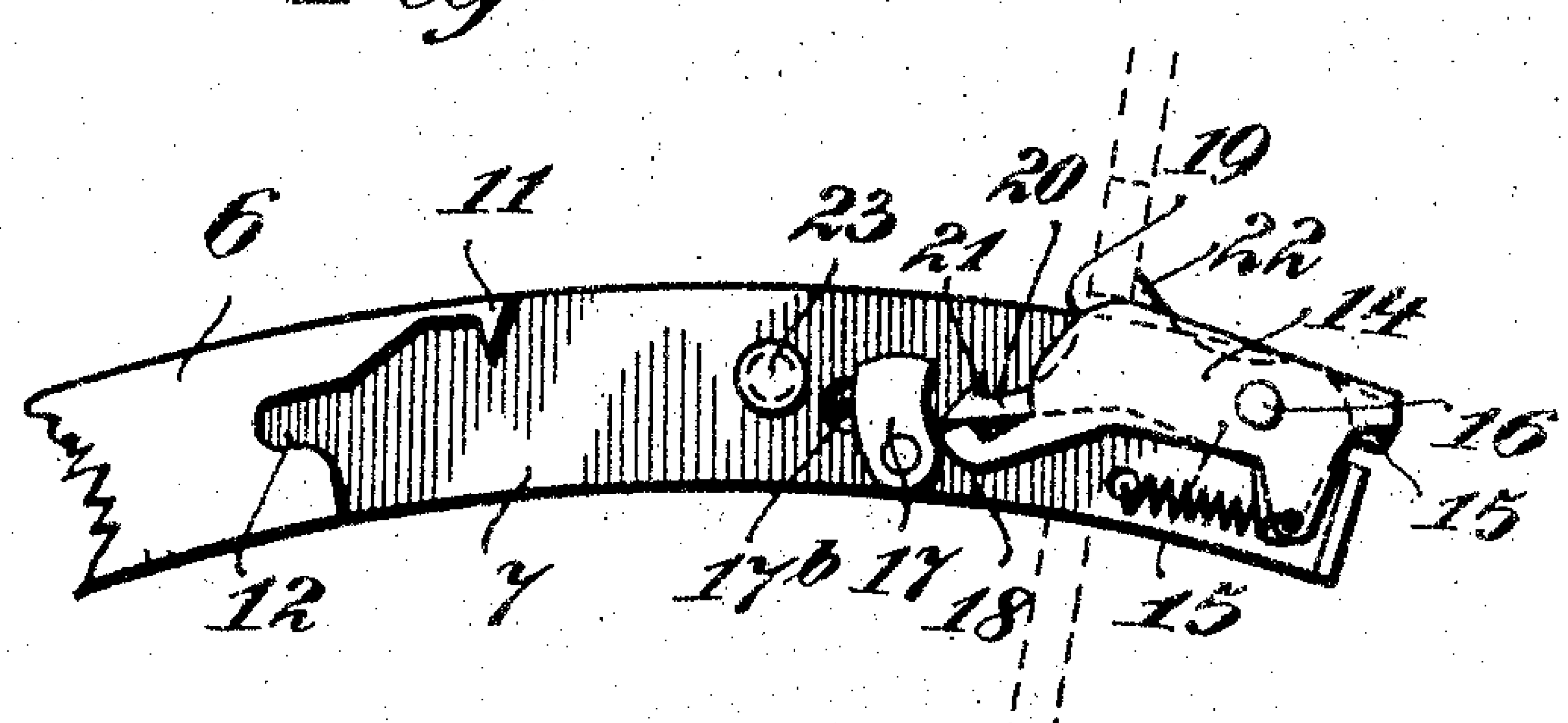


Fig. 1.

Fig. 4.



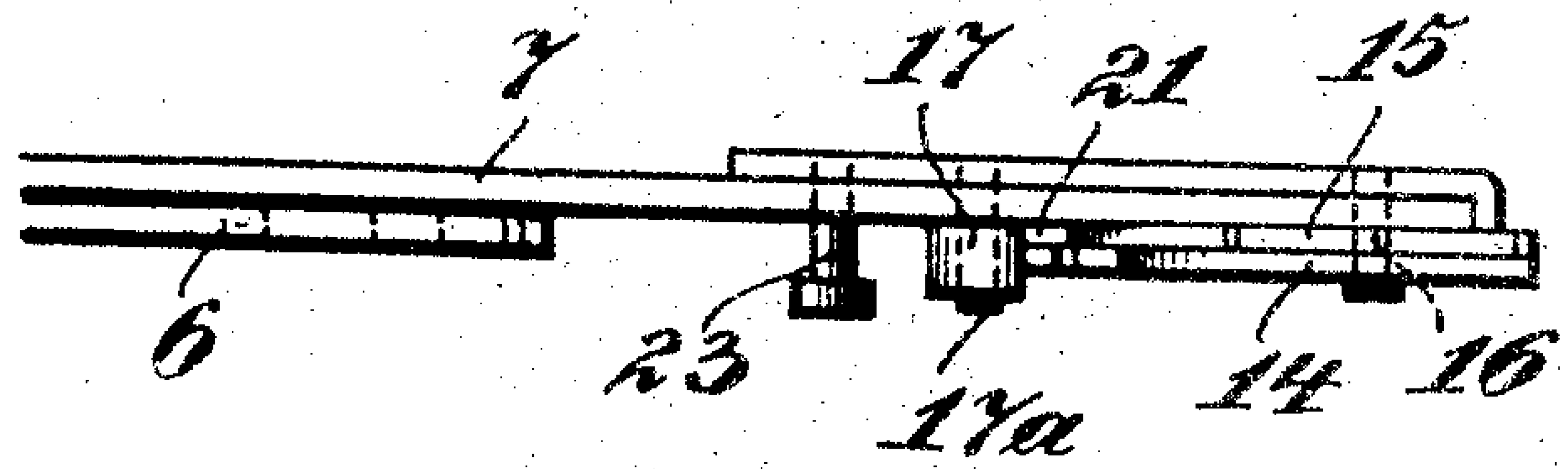


Fig. 5.

Witnesses:

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H. C. Totten.

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2 SHEETS—SHEET 2

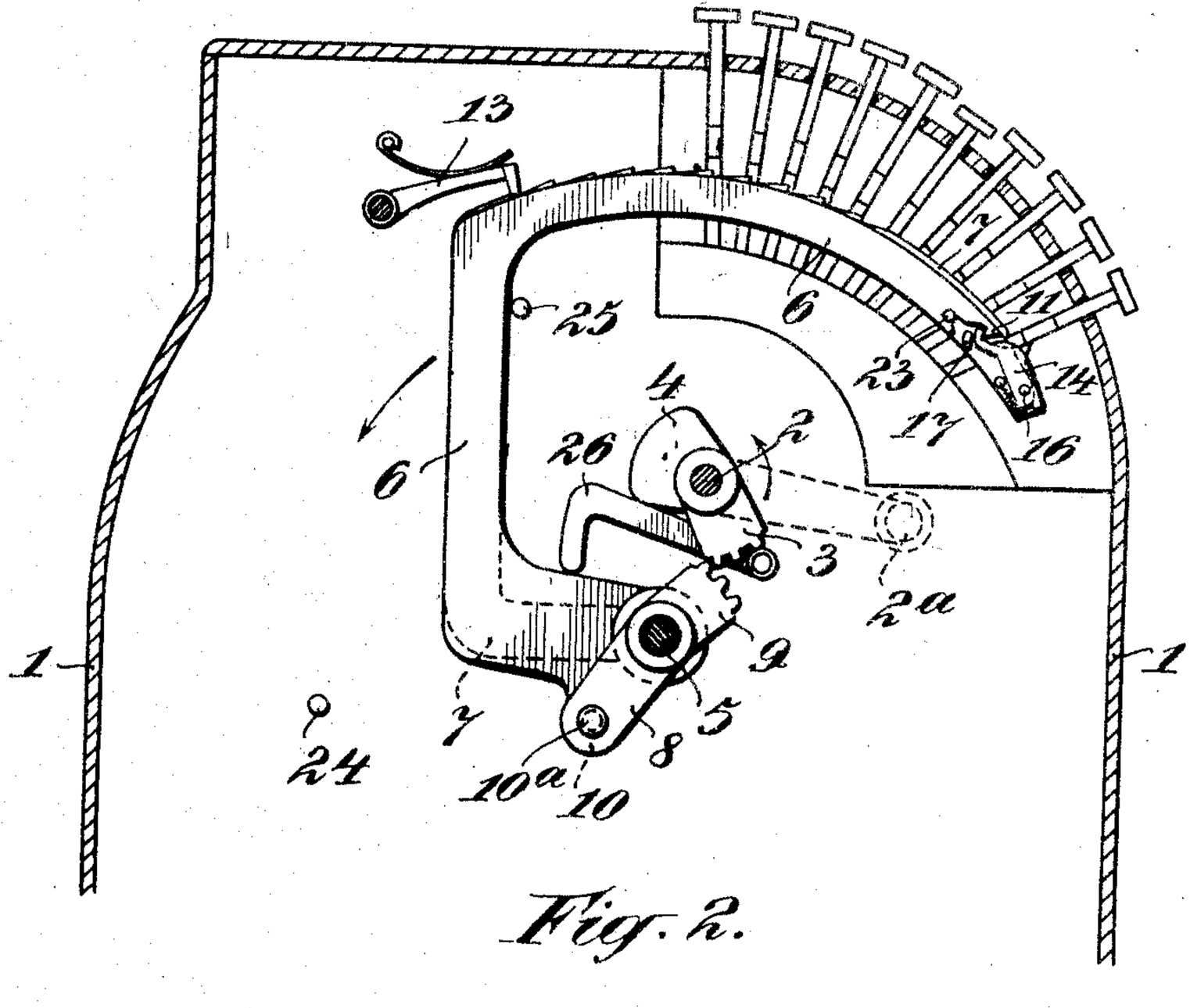

Fig. 2.

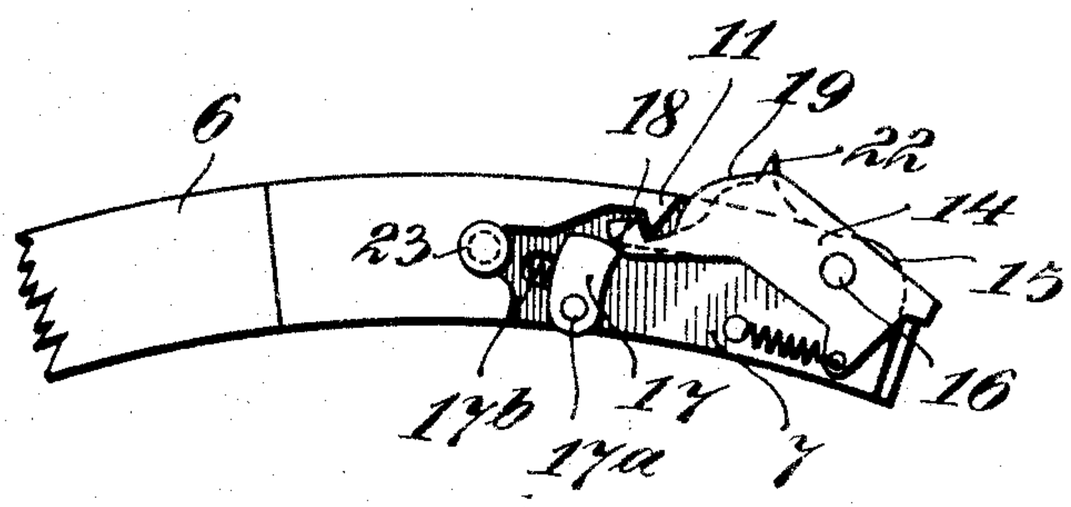

Fig. 3.

Witnesses:
J. M. Drymbrook
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UNITED STATES PATENT OFFICE.

WOLDEMAR REINHOLD HEINITZ, OF CHEMNITZ, GERMANY, ASSIGNOR TO THE FIRM OF SCHUBERT & SALZER MASCHINENFABRIK AKTIENGESELLSCHAFT, OF CHEMNITZ, GERMANY.

CASH-REGISTER.

No. 875,075. Specification of Letters Patent. Patented Dec. 31, 1907.

Application filed July 11, 1906. Serial No. 325,701.

To all whom it may concern:

Be it known that I, WOLDEMAR REINHOLD HEINITZ, a citizen of the Kingdom of Saxony, and resident of Chemnitz, Germany, (whose post-office address is Neefestrasse 24,) have invented certain new and useful Improvements in Cash-Registers, of which the following is a specification.

My invention relates to a cash register having two-part transmission-segments for indicating, printing, adding, etc.

For the purpose of insuring a greater degree of safety, I employ in place of the single latch usually used, a double coupling-latch, the one part of which, by striking obstructions introduced into its path, first causes release of the other part, whereupon the two parts of the segment can be uncoupled.

One form of construction of the invention is illustrated in the accompanying drawing, in which

Figures 1 and 2 are two vertical sections through the upper portion of a cash register fitted with the new device, the operative parts being shown in two different positions. Figs. 3 and 4 are enlarged detail views, showing in elevation in two positions, the devices for coupling and for uncoupling the two parts of the segment. Fig. 5 is a plan of Fig. 4.

In the case 1 of the register there is located the main shaft 2, actuated by a crank 2^a in well-known manner. On this shaft 2 toothed segments 3 and cams 4 are rigidly secured. Below the shaft 2 there is a second shaft 5, upon which there are mounted, with capability of turning, segments 6 and 7 and double-armed levers 8, 9.

The segment 6 has a lug 10, in which a short shaft 10^a is mounted, this shaft connecting the lug with the longer lever-arm 8. The other lever-arm 9 is toothed. The segment 3, mounted on the shaft 2, on rotation comes into engagement with the teeth of the lever-arm 9. The free end of the segment 6 presents a hook 11, below which there is a slot 12.

The top edge of the segment 7 is furnished with ratchet teeth, with which a pawl 13 engages and thus arrests the segment. At the end of this segment two latches 14, 15 are provided, each consisting of a peculiarly shaped member turning on a common pin 16. In front of these two latches is a pin 17^a, to which is secured a safety-block 17, held in position by a spring 17^b. The latch 14 has a finger 18, which rests on the block 17 and is rounded below, so that on pressure being applied to the latch, the part 17 can be pressed back. The latch 14 projects above the segment 7 and at 19 is rounded off toward both sides. The second latch 15 has a finger 20, which likewise rests on the block 17 but is not rounded below, so that pressure on the latch 15 will not cause the block 17 to retreat. The finger 20 is hooked on the upper edge at 21, so that it may engage with the hook 11 of the segment 6. The portion of the latch 15 which projects above the segment 7 is somewhat smaller than the corresponding portion of the latch 14, and is provided with a shoulder 22, which protrudes above the other latch 15. Projecting from the segment 7 is a pin 23, which fits the slot 12 at the end of the other segment 6. The extent of motion of the two segment-parts 6, 7 is limited by the two stops 24, 25. Between the shafts 2 and 5 there is mounted a lever 26, whose end rests on the segment 6.

The method of operation of the apparatus is as follows:—Let it be assumed that a registration has been effected by means of the eighth key (as shown in Fig. 1) and the fifth key is now depressed (Fig. 2). As Fig. 1 shows, on commencement of rotation of the crank the two toothed segments 3 and 9 will mesh with each other, whereby the lever 8, and thus the segment 6, will be actuated. When the end of the segment 6 strikes the pin 23, the segment 7 will be actuated also, being turned as far as the stop 25 permits. This position of the parts is shown in Fig. 2. It is obvious from this figure that at this moment the two segments 3, 9 leave each other, while at the same time the cam 4 descends upon the intermediate lever 26. Furthermore the hooked end 11 of the segment 6 will snap into the hook 21 of the latch 15. This coupling of the parts is effected by the inclined outer edge of the hook 11 first pressing against the finger 18 of the latch 14, which yields and thus presses back the block 17, so that the hook 21 of the finger 20 is now also able to yield. When the two hooks 11 and 21 have engaged, the latches 14 and 15, together with the block 17, will return to their initial position. The block 17 then lies below the finger 20, whereby unintentional uncoupling of the two segments is rendered impossible (Fig. 3). On further rotation of the crank, the cam 4 acts on the lever 26. Since

this lever lies on the arm of the segment 6, the latter must partake of its motion. When those portions which project above the segment 7 contact with a stop, which in the present instance is set by a depressed key, the rounded part 19 of the latch 14 first contacts with the stop. On further motion the latch 14 descends, since the rounded end 18 finds no hold on the safety-block 17. The latter is pushed back and in this manner the finger 20 of the latch 15, reposing on the block, will be released. This finger will now also be depressed by the stop, so that the hooks 11, 21 now come out of engagement. The shoulder 22 holds the segment 7 securely in its present position, while the segment 6 will be moved further through the intermediate lever 26, until the stop 24 limits its motion. This end-position is shown in Fig. 1, with which the explanation started. The pawl 13 prevents the segment 7 from falling back. On the return motion it must naturally be released at the proper moment which is preferably effected by means of a cam disk (not shown in the drawing) rigidly secured to the main shaft 2 and acting upon a lever arm (not shown) fastened to the pivot of the pawl 13.

The stop can obviously be presented in various ways, depending upon the class of register. Instead of its being introduced by depressing keys (as in the present instance), it may be set by turning keys, throwing over levers, or in any other suitable manner.

The essentially novel feature of the invention consists in the provision of a two-part latch, whereby uncoupling of the two segments can be effected solely by the stop; for the lower latch 15, which actually effects coupling, is kept locked by the safety-block 17, until, by means of the stop, the other latch 14 has first pushed the block 17 out of the path of the lower latch, whereby the two segments are uncoupled by being unhooked.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:—

1. In a cash register, in combination, a shaft; an actuating-segment mounted thereon and presenting an operating part having a hooked end, and an operated part advanced by the operating part; two spring-actuated latches pivoted to the operated segment-part, one of which latches engages with the said hooked segment end; a spring-actuated safety-block pivoted to the operated segment-part and supporting the ends of the two latches; means for introducing an obstruction into the path of the latches, whereby the latch which does not engage with the operating segment-part is first depressed and pushes back the safety-block from below the hooked latch, which is then depressed and uncoupling of the segmental parts thus effected; means for rotating the operating segment-part on its shaft; and means for retracting it after the uncoupling operation; substantially as described.

2. In a cash register, in combination, a shaft; an actuating-segment mounted thereon and presenting an operating part having a hooked end, and an operated part advanced by the operating part; two spring-actuated latches pivoted to the operated segment-part, one of which latches engages with the said hooked segment end; a spring-actuated safety-block pivoted to the operated segment-part and supporting the ends of the two latches; means for introducing an obstruction into the path of the latches, whereby the latch which does not engage with the operating segment-part is first depressed and pushes back the safety-block from below the hooked latch, which is then depressed and uncoupling of the segmental parts thus effected; means for rotating the operating segment-part on its shaft; and means for retracting it after the uncoupling operation; substantially as described.

3. In a cash register, in combination, a shaft; an actuating-segment presenting an operating part having a hooked end, and an operated part, advanced by the operating part; two spring-actuated latches pivoted to the ends of the operated segment-part, one of which latches has a rounded finger, while the other has a hooked finger which engages with the said hooked segment end; a spring-actuated safety-block pivoted to the operated segment-part and supporting the ends of the two latches; means for introducing an obstruction into the path of the latches, whereby the latch with the rounded finger is first depressed and pushes back the safety-block from below the hooked latch, which is then depressed and the two segment-parts thus uncoupled; a double-armed lever mounted on the said shaft one arm of which lever constitutes a toothed segment, while the other arm is pivoted to the arm of the operating segment-part; a second shaft, having a crank; a toothed segment mounted thereon, meshing with the said toothed segment; a lever mounted intermediately of the two said shafts and reposing upon the arm of the operating segment-part; and a cam mounted on the crank-shaft and bearing upon the said lever on rotation; substantially as described.

4. In a cash register, in combination, a shaft; an actuating segment presenting an operating part having a hooked end, and an operated part, having a toothed back, advanced by the operating part; two spring-actuated latches pivoted to the ends of the operated segment-part, one of which latches has a rounded finger, while the other has a hooked finger which engages with the said hooked segment end; a spring-actuated safety-block pivoted to the operated seg-

ment-part and supporting the ends of the two latches; means for introducing an obstruction into the path of the latches, whereby the latch with the rounded finger is first depressed and pushes back the safety-block from below the hooked latch, which is then depressed and the two segment-parts thus uncoupled; a double-armed lever mounted on the said shaft one arm of which lever constitutes a toothed segment, while the other arm is pivoted to the arm of the operating segment-part; a second shaft, having a crank; a toothed segment mounted thereon, meshing with the said toothed segment; a lever mounted intermediately of the two said shafts and reposing upon the arm of the operating segment-part; a cam mounted on the crank-shaft and bearing upon the said lever on rotation; a stop on the hooked latch adapted to engage with the said obstructions and a spring-actuated pawl engaging with the toothed back of the operated segment-part; substantially as described.

The foregoing specification signed at Chemnitz this 14th day of May, 1906.

WOLDEMAR REINHOLD HEINITZ.

In presence of
PAUL RUASATH,
FREDERICK J. DIETZMAN.