

No. 891,624.

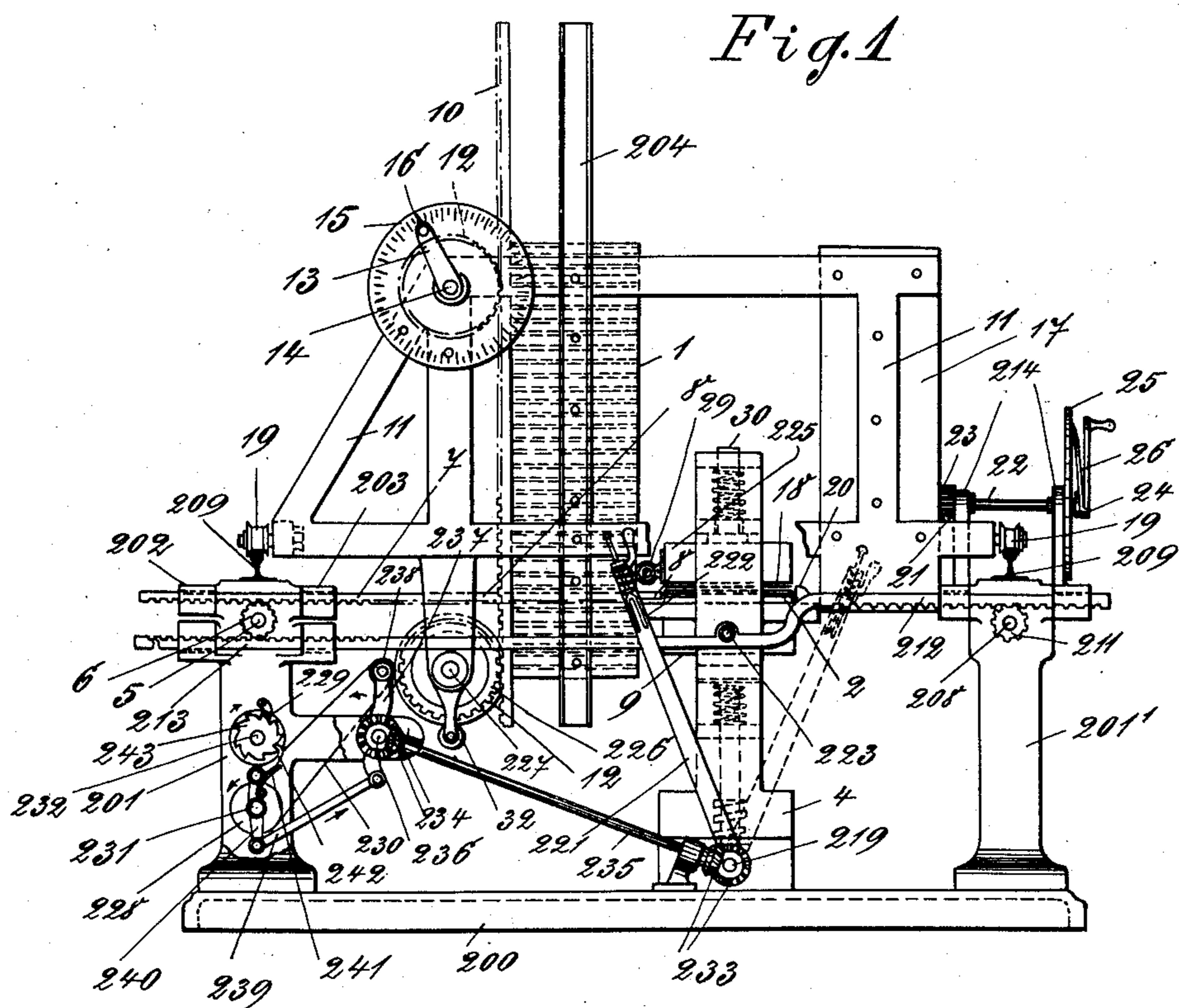
PATENTED JUNE 23, 1908.

M. LEBEIS.

TICKET PRINTING AND REGISTERING APPARATUS.

APPLICATION FILED DEC. 4, 1906.

5 SHEETS—SHEET 1.



Witnesses:  
Nipolain Meunier  
Carl Heygen

Inventor:  
Martin Lebeis

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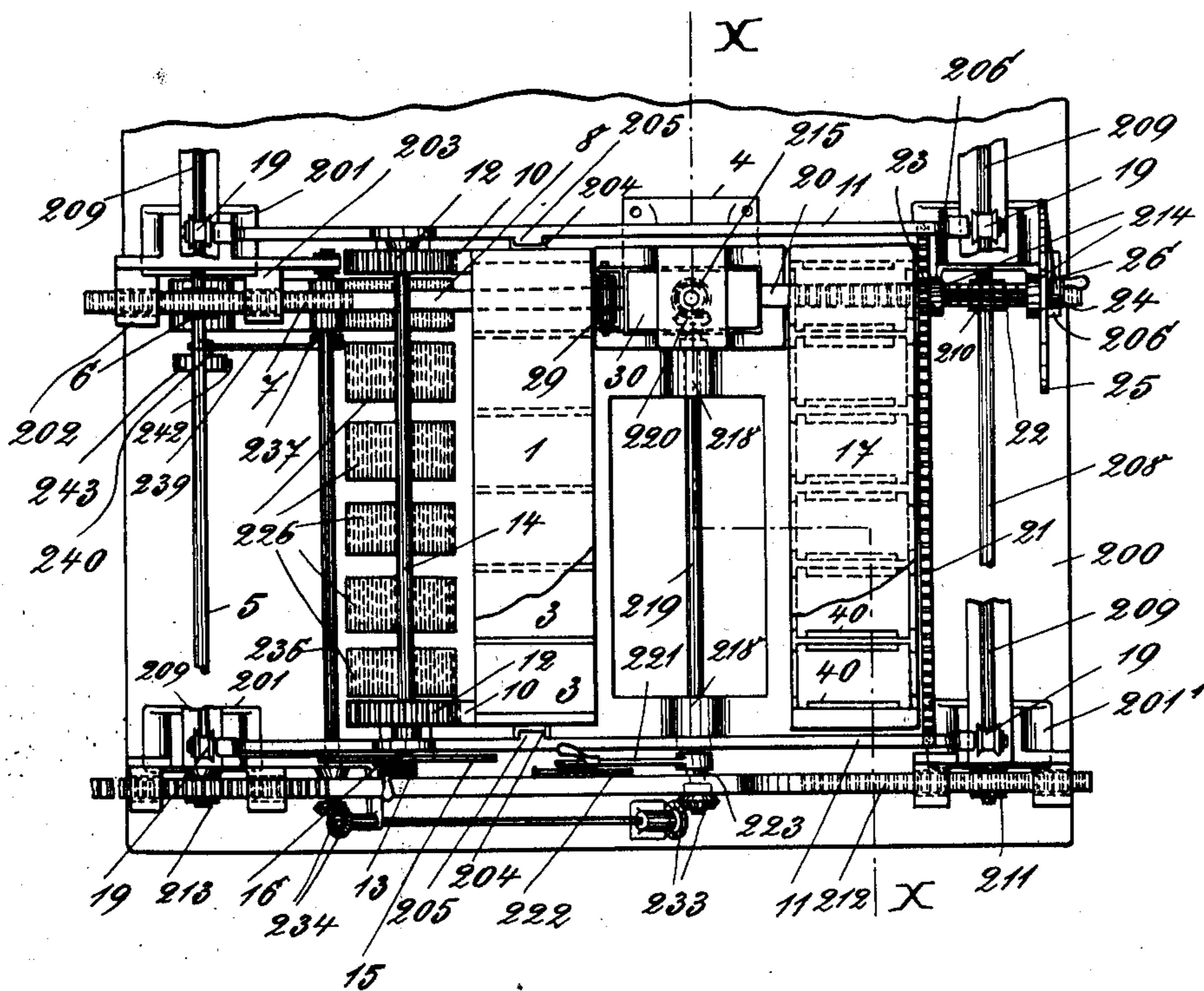
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5 SHEETS—SHEET 2.

Fig. 2



Witnesses:

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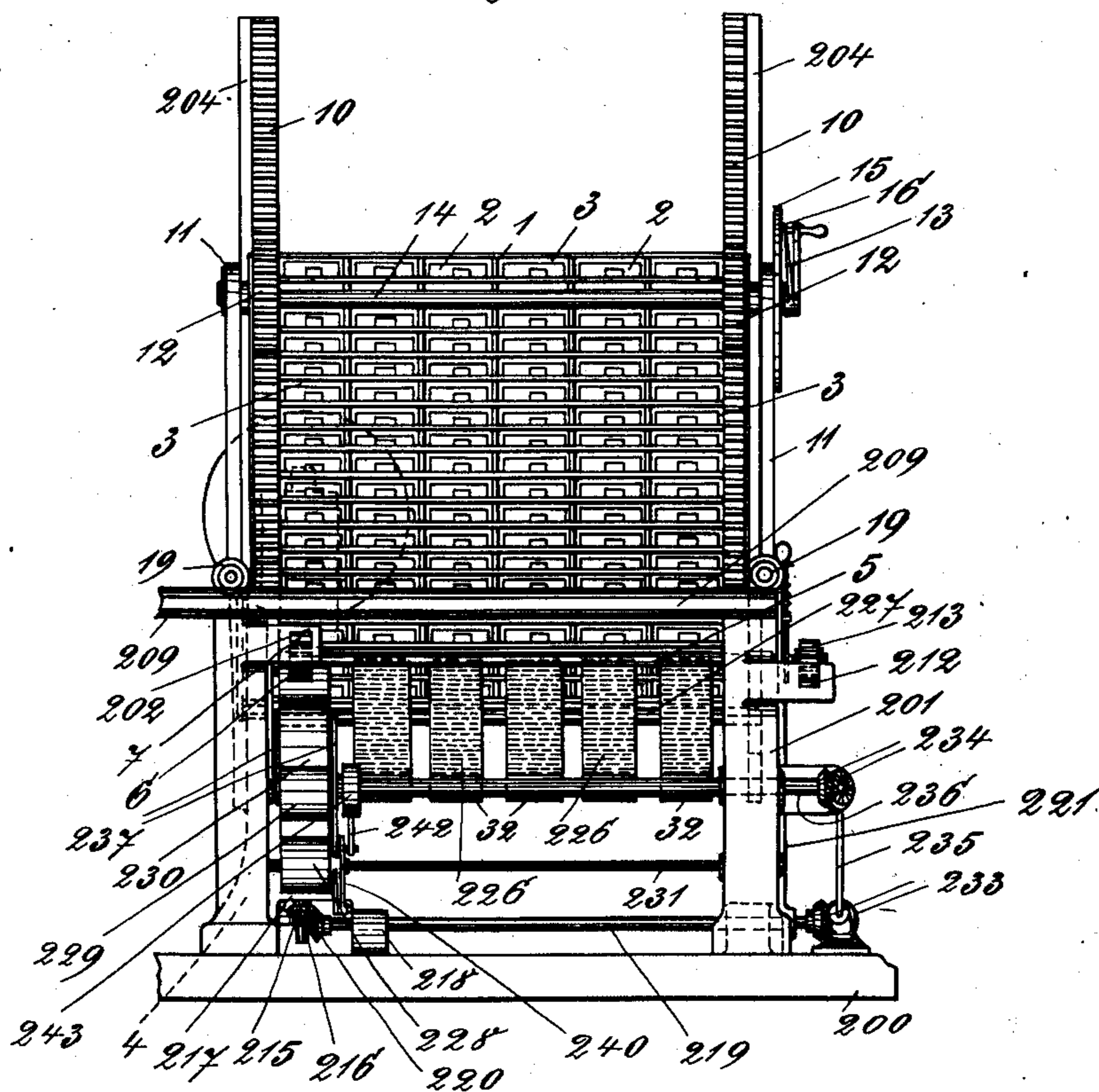
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5 SHEETS—SHEET 3.

*Fig. 3*



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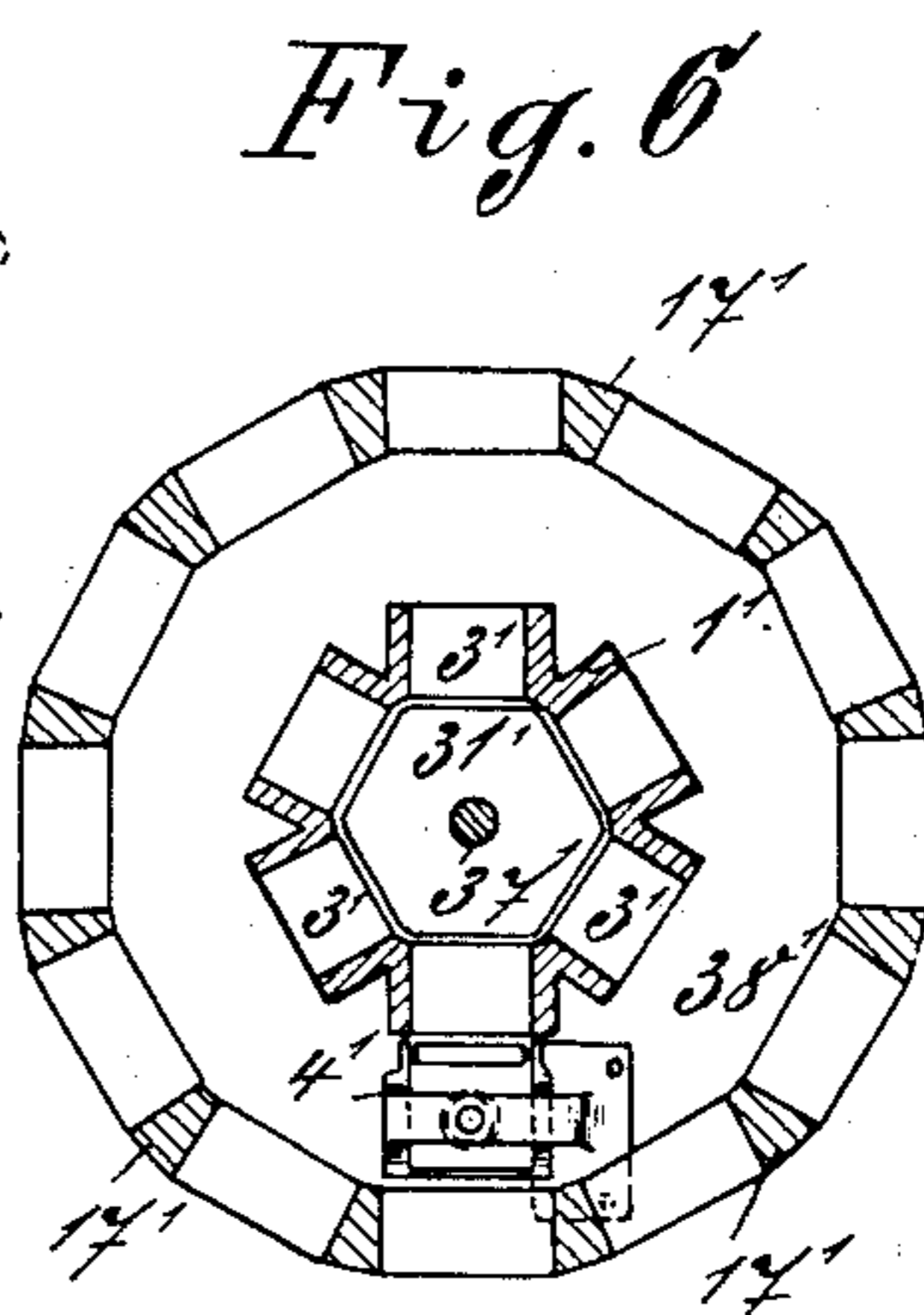
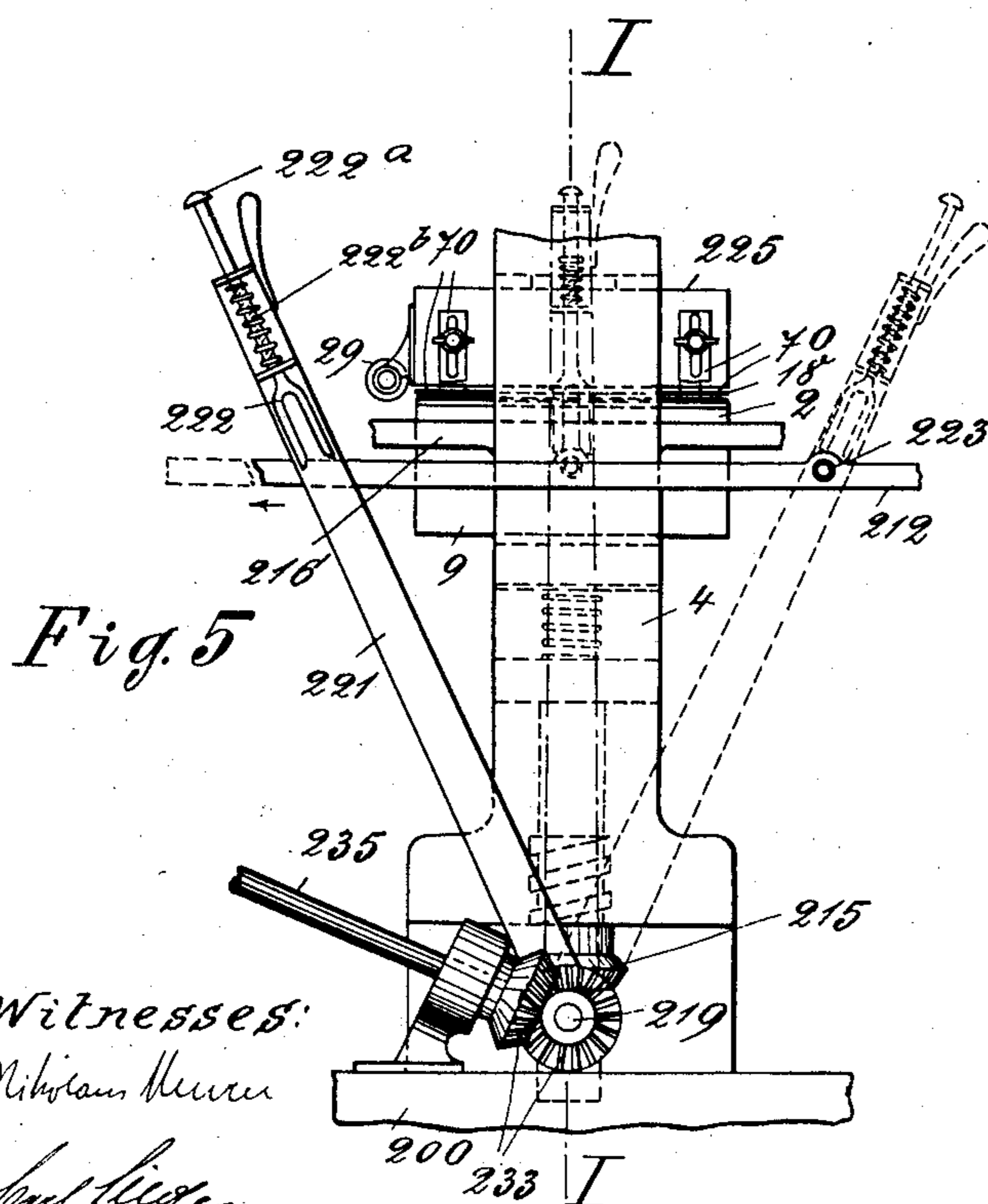
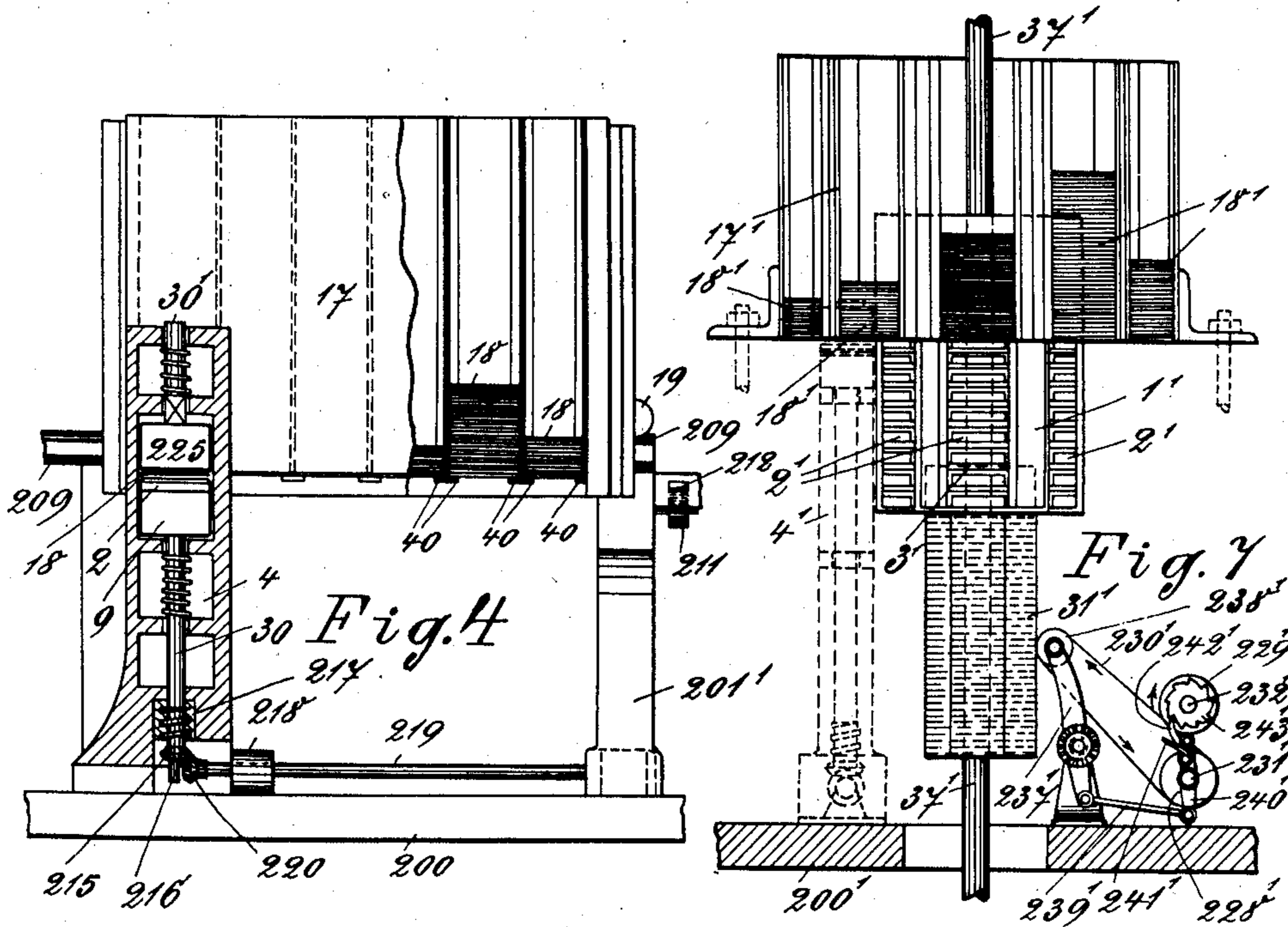
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TICKET PRINTING AND REGISTERING APPARATUS.

APPLICATION FILED DEC. 4, 1906.

5 SHEETS—SHEET 4.



Witnesses:  
 William H. H. H.  
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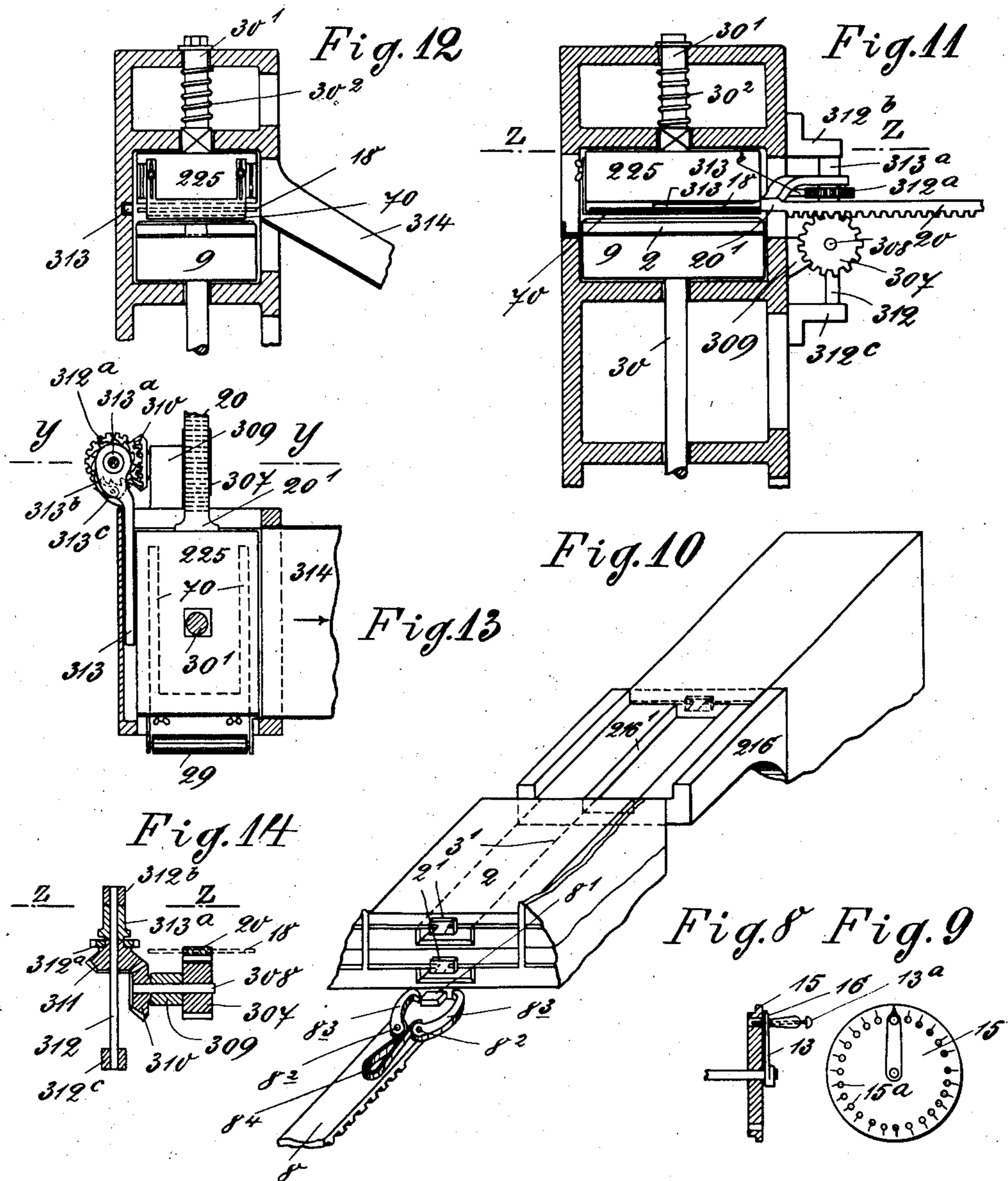
PATENTED JUNE 23, 1908.

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TICKET PRINTING AND REGISTERING APPARATUS.

APPLICATION FILED DEC. 4, 1906.

6 SHEETS—SHEET 5.



Witnesses:  
 Nicholas Meurer  
 Carl Meyer

Inventor:  
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# UNITED STATES PATENT OFFICE.

MARTIN LEBEIS, OF KALK, NEAR COLOGNE, GERMANY, ASSIGNOR TO REGINA MASCHINEN-FABRIK, G. M. B. H., OF KALK, NEAR COLOGNE, GERMANY.

## TICKET PRINTING AND REGISTERING APPARATUS.

No. 891,624.

Specification of Letters Patent.

Patented June 23, 1908.

Application filed December 4, 1906. Serial No. 346,247.

*To all whom it may concern:*

Be it known that I, MARTIN LEBEIS, a citizen of the Empire of Germany, residing at Kalk, near Cologne-on-the-Rhine, in the Empire of Germany, have invented a new and useful Ticket Printing and Registering Apparatus, of which the following is a specification.

My invention relates to a new kind of apparatus for printing and registering railway tickets and the like, in which loose type plates are employed. The several type plates are loosely disposed in several parallel vertical rows of parallelepipedal compartments in a magazine, each compartment receiving a single type plate. Opposite to the magazine a reservoir is disposed, which comprises several parallel vertical channels in the central planes of the vertical rows of compartments. Into these channels various kinds of ticket blanks are charged.

A printing device is disposed and means are provided for vertically and horizontally shifting both the magazine and the reservoir, so as to select the respective type plate for the desired station name and kind of ticket and to bring it and at the same time the lowermost ticket blank in the corresponding channel in the reservoir into a correct position with reference to the platen. After this adjustment both the type plate and the lowermost ticket blank are by a mechanism simultaneously ejected from the magazine and the reservoir respectively in opposite directions, so as to place the type plate on the table of the printing device and at the same time to ink it and to place the ticket blank on a support just above the type plate. The type plate is then pressed with the ticket blank against the platen above to produce the impression on the ticket. The latter is afterwards discharged and the type plate is returned to its compartment in the magazine, which latter was meanwhile prevented from shifting until the return of the type plate. A registering device is preferably provided for recording the ticket printed on a paper strip. Where so preferred, the magazine may be shifted only vertically and the printing device horizontally for selecting the respective type plate, while the reservoir is made stationary, or the printing device may be shifted vertically and horizontally, while the magazine and the reservoir are both made stationary. If so preferred, the maga-

zine and the reservoir may be given the shapes of two drums, which can be simultaneously or severally adjusted by turning.

I will now proceed to describe my invention with reference to the accompanying drawings, in which—

Figure 1 is a side view of the ticket printing and registering apparatus, Fig. 2 is a plan of the same, parts being broken away, Fig. 3 is a rear view of the same, Fig. 4 is a vertical section through the same on the broken line  $x-x$  in Fig. 2, Fig. 5 is an elevation of the printing device on an enlarged scale, Fig. 6 is a horizontal section through a modified ticket printing and registering apparatus, Fig. 7 is an elevation of the same, the base plate being shown in section, Figs. 8 and 9 are details, which will be referred to later on, Fig. 10 is a perspective view to show the manner in which a type plate can be ejected from the magazine to the table of the printing device, Fig. 11 is an elevation of the upper part of the printing device, Fig. 12 is a vertical cross section through the same on the line  $x-x$  in Fig. 2, Fig. 13 is a horizontal section through the line  $z-z$  in Figs. 11 and 14, and Fig. 14 is a vertical section through the line  $y-y$  in Fig. 13.

Similar characters of reference refer to similar parts throughout the several views.

On a suitable base plate 200 six standards 201 and 201<sup>1</sup> (of which only four are shown) are fastened and the heads of the three standards 201 on the left in Figs. 1 and 2 are combined by means of a rail 209, the same as the heads of the three standards 201<sup>1</sup> on the right are combined by means of a second rail 209. Two parallel frame plates 11, 11 are connected one with another by means of a reservoir 17 and form a carriage, which can run on the two rails 209, 209 by means of four small wheels 19, 19, which are mounted on suitable pins to turn. Between the two frames plates 11, 11 a magazine 1 is vertically guided by means of two projections 205, 205 on the frame plates, which projections engage in two vertical rails 204, 204 fastened on the magazine 1 and preferably made of a U-shaped cross section. The magazine 1 is on the left side in Figs. 1 and 2 provided with two vertical racks 10, 10, which mesh with four gear wheels 12, 12 fastened on two horizontal shafts 14 and 227. The latter are mounted to turn in the two frame plates 11, 11 and the upper shaft 14 carries a hand-

crank 13, by means of which it can be turned in either direction for raising or lowering the magazine 1. The magazine 1 is shown as comprising six vertical parallel rows of compartments 3, 3 and each compartment 3 is adapted to receive a single loose type plate 2, which may be a galvano or a steel stamp or a stereotype or the like. Each compartment 3 has in its bottom a groove 3<sup>1</sup> across the magazine 1 and this groove 3<sup>1</sup> widens a little on the left side in Fig. 1, as is shown at Fig. 10. The purpose of this groove 3<sup>1</sup> will be explained later on. The reservoir 17 as shown comprises six vertical channels, which are opposite to the six vertical rows of compartments 3, 3 in the magazine 1 and are open at top and at bottom. The lower edges of the six channels in the reservoir 17 are each provided with ledges 40, 40 (see Figs. 2 and 4) for supporting the columns of ticket blanks 18, 18, which are charged into the channels from above.

A printing device 4 is secured on the base plate 200 between the magazine 1 and the reservoir 17 in the plane of the left extreme channel in the reservoir 17 in Fig. 4 or in the plane of the opposite extreme vertical row of compartments in the magazine 1, if the carriage with the magazine 1 and the reservoir 17 occupies the extreme position shown in Fig. 2, in other words the printing device 4 is placed in a vertical plane near the two middle standards 201 and 201<sup>1</sup>. It comprises a standard, two superposed spindles 30 and 30<sup>1</sup>, a table 9 and a platen 225. The lower spindle 30 is provided above its lower end with a screw-thread, which engages in a nut 217 in the standard. The lower end of the spindle 30 can longitudinally slide in a bevel wheel 215, which in any known manner is prevented from turning on the spindle 30 and is also prevented from longitudinally shifting on the same, it being held between a bearing 216 and the nut 217. The bevel wheel 215 meshes with another one 220 fastened on a horizontal shaft 219, which latter is mounted to turn in suitable journals 218 and carries a hand-lever 221 (see Fig. 5). It will be understood, that by turning the hand-lever 221 in either direction the table 9 can be raised and lowered respectively. The upper spindle 30<sup>1</sup> is prevented from turning by a square at its lower end and is connected with the platen 225. A helical spring 30<sup>2</sup> is preferably employed for pressing the platen 225 downwards. When the hand-lever 221 occupies its vertical or middle position, a space will be left between the table 9 and the platen 225, which space may have about the same height as either compartment 3 in the magazine or a little more. Just beneath the platen 225 a forked piece 70 of sheet metal is disposed for supporting a ticket blank, see Figs. 12 and 13.

The hand-crank 13 mentioned above is provided with an indicator 16, which is adapt-

ed to show on a dial 15 the position of the magazine 1 in the vertical direction. The dial 15 is fastened on the one frame plate 11 and has as many divisions as every vertical row in the magazine 1 contains compartments 3, 3, and it will be obvious, that if the indicator 16 points exactly at the middle of a division the respective compartment 3 with the type plate 2 will be opposite to the space between the table 9 and the platen 225 of the printing device 4. The handle of the hand-crank 13 has a longitudinal bore, in which a bolt 13<sup>a</sup> (see Figs. 8 and 9) is mounted to move and this bolt 13<sup>a</sup> can engage in either of several holes 15<sup>a</sup> in the dial 15. The number of the holes 15<sup>a</sup> is like that of the divisions on the dial 15. After turning and adjusting the hand-crank 13 its bolt 13<sup>a</sup> can be pushed inwards into the opposite hole 15<sup>a</sup> for locking it. Thereby the magazine 1 will be prevented from dropping on the hand-crank 13 being released.

On the two frame plates 11, 11 of the carriage a horizontal rack 21 is fastened along the reservoir 17. The right middle standard 201<sup>1</sup> in Figs. 1 and 2 is provided with two vertical supports 214, 214, in which a horizontal shaft 22 is mounted to turn. This shaft 22 has fastened on it a pinion 23, a hand-crank 24 and an indicator 26. The pinion 23 meshes with the rack 21 and the indicator 26 is adapted to show on a dial 25 fastened on one support 214 the position of the carriage in the horizontal direction. It will be understood, that by turning the hand-crank 24 in either direction the carriage can be shifted on the two rails 209, 209, so as to bring either vertical row of compartments 3, 3 in the magazine 1 and the opposite channel in the reservoir 17 into the vertical central plane of the printing device 4. Any known locking device, say as shown at Figs. 8 and 9, may be employed for locking the carriage in its respective position.

The two middle standards 201 and 201<sup>1</sup> are each provided with two arms, marked 202 and 203 on the left and 206, 206 on the right in Figs. 1 and 2. In the two arms 202 and 203 a horizontal slide 8 is mounted to reciprocate in the vertical central plane of the printing device 4 and is adapted to engage in the groove 3<sup>1</sup> of either compartment 3 of the magazine 1. At the end the slide 8 is provided with a lug 8<sup>1</sup> and two pins 8<sup>2</sup>, 8<sup>2</sup>. Two hooks 8<sup>3</sup>, 8<sup>3</sup> are mounted to rock on the two pins 8<sup>2</sup>, 8<sup>2</sup> and are normally held in their spread position shown at Fig. 10 by a spring 8<sup>4</sup>. They are adapted to engage over the lug 8<sup>1</sup> and in such a manner, that small spaces are left between the lug 8<sup>1</sup> and the opposite faces of the two hooks 8<sup>3</sup>, 8<sup>3</sup>, if the latter are pressed from the sides on the lug 8<sup>1</sup>. The widening part of either channel 3<sup>1</sup> is adapted to fold the two hooks 8<sup>3</sup>, 8<sup>3</sup> and to move them towards each other, when the slide S

in a manner to be described later on, is moved into the channel 3<sup>1</sup> and passed through the same. Each type plate 2 is provided with a projection 2<sup>1</sup>, against the vertical part of which the lug 8<sup>1</sup> of the slide 8 can strike and bear. This vertical part of the projection 2<sup>1</sup> can engage in the said spaces between the lug 8<sup>1</sup> and the opposite faces of the two hooks 8<sup>3</sup>, 8<sup>3</sup>. The horizontal part of the projection 2<sup>1</sup> between its vertical part and the type plate 2 is made narrower, so as to permit the type plate 2 to move with the table 9 upwards a little without getting out of engagement with the slide 8, if the two hooks 8<sup>3</sup>, 8<sup>3</sup> are pressed from the sides on the lug 8<sup>1</sup> and thus couple the type plate 2 with the slide 8.

The standard of the printing device 4 is on its side facing the magazine 1 provided with an extension 216 (see Fig. 10), which is formed as a channel, that can register with either compartment 3 of the magazine. This channel is provided with a groove 216<sup>1</sup>, which registers with the groove 3<sup>1</sup> in the compartment 3. It will now be evident, that on the slide 8 being moved through the grooves 3<sup>1</sup> and 216<sup>1</sup>, its lug 8<sup>1</sup> will strike the projection 2<sup>1</sup> of the type plate 2 and will thereby push the latter to the table 9 of the printing device 4, while the two hooks 8<sup>3</sup>, 8<sup>3</sup> will be folded and moved towards each other for coupling the slide 8 with the type plate 2. When the slide 8 is moved back, it will take the type plate 2 along with it for returning the same to the compartment 3, until the two hooks 8<sup>3</sup>, 8<sup>3</sup> open and disconnect the slide 8 from the type plate 2. The platen 225 of the printing device 4 is provided with arms, in which an inking roller 29 is mounted to turn. This inking roller 29 is adapted to ink the upper face of either type plate 2 passed beneath it, see Fig. 5. The left part of the slide 8 in Figs. 1 and 2 is formed as a rack 7, which meshes with a pinion 6 fastened on a horizontal shaft 5. The latter is mounted to turn in the two left standards 201, 201 shown in Fig. 2 and has fastened on it at the other end a pinion 213, which will be referred to later on.

In the two arms 206, 206 of the right middle standard 201<sup>1</sup> in Fig. 2 a rack 20 is mounted to reciprocate, which meshes with a pinion 210 fastened on a horizontal shaft 208. The latter is mounted to turn in the two right standards 201<sup>1</sup> shown in Fig. 2 and has fastened on it at the other end a pinion 211. A cranked double rack 212 is horizontally guided in four arms of the two front standards 201 and 201<sup>1</sup> in Figs. 1 and 2 and meshes on the one hand with the pinion 211 from above and on the other hand with the pinion 213 from below. The consequence of this arrangement will be, that by moving the rack 212 in either direction the two shafts 5 and 208 will be put in rotation in opposite

directions, so that the two sides 8 and 20 will be simultaneously moved in opposite directions, their opposite ends being moved either towards each other or away from each other. The cranked double rack 212 is provided with a pin 223, over which a fork 222 guided in two lugs on the hand-lever 221 can engage. Normally the fork 222 is pushed upwards by a helical spring 222<sup>b</sup> (see Fig. 5) and it is only by depressing the knob 222<sup>a</sup> at the upper end of the shank of the fork 222, that the hand-lever 221 can be pivotally connected with the rack 212 by means of its pin 223. The rack 20 mentioned above has a head 20<sup>1</sup> (Fig. 13), which is adapted to eject the lowermost ticket blank 18 from either channel of the reservoir 17 to the forked support 70 above the type plate 2 in the printing device 4, see Figs. 5 and 11. The head 20<sup>1</sup> is on the rear so beveled off, see Figs. 1 and 11, that during the return of the rack 20 it can pass beneath the lowermost ticket blank 18 in the channel of the reservoir 17 and raise a little the column of ticket blanks, until it leaves the reservoir 17, whereupon the said column will drop. The rack 20 also meshes with a pinion 307 (Figs. 11 and 14) fastened on a short shaft 308, which latter is mounted to turn in an arm 309 on the standard of the printing device 4. The shaft 308 has fastened on it at the other end a bevel wheel 310, which meshes with another bevel wheel 311. The latter is fastened on a vertical shaft 312, which is mounted to turn in two suitable brackets 312<sup>b</sup> and 312<sup>c</sup> on the said standard. Loose on the shaft 312 is the long nave 313<sup>a</sup> of an ejector 313, which latter can turn through an angle of about 90° in both directions in the space between the platen 225 and the forked support 70 and is adapted to eject the printed ticket from the support 70 to an inclined chute 314 fastened on the standard in the direction of the arrow in Fig. 13. Fastened on the bevel wheel 311 is a ratchet wheel 312<sup>a</sup>, in which a pawl 313<sup>b</sup> engages that is disposed on the underside of the ejector 313 and is pressed by a spring 313<sup>c</sup>. It is to be noted, that when the rack 20 is without engagement with the pinion 307, the ejector 313 normally occupies a position at right angles to that shown in Fig. 13 and is in the plane of the lowermost ticket blank 18, see Fig. 14. Fig. 11 shows the rack 20 in its extreme position and it will be seen, that when the rack 20 is moved back from left to right, it will turn in the same direction the pinion 307 and thereby also the ejector 313. After a quarter of a revolution the pinion 307 will become disengaged from the rack 20, so that the ejector 313 will stop.

The several channels of the reservoir 17 are each arranged for receiving ticket blanks of one kind. For example the first channel may hold ticket blanks of the first class, the second channel those of the second class, the

third channel those of the third class, the fourth channel those for return tickets, the fifth channel those for dog tickets and so on.

The type plates 2, 2 in each of the several vertical rows of compartments of the magazine 1 are of course destined for the same kind of tickets as the opposite channel of the reservoir 17. The type plates 2, 2 in either horizontal row are all destined for one and the same station name. It will now be understood, that the magazine 1 requires to be vertically adjusted by means of the hand-crank 13, the indicator 16 and the dial for selecting the desired station name, and that the carriage with the magazine 1 and the reservoir 17 requires to be horizontally adjusted for selecting the desired kind of ticket.

The shaft 227 mentioned above and disposed in the two frame plates 11, 11 of the carriage has fastened on it six registering type drums 226, 226, which are disposed in the same vertical central planes as the channels in the reservoir 17 and as the vertical rows of compartments 3, 3 in the magazine 1. The six registering type drums 226, 226 serve for registering the tickets printed. Consequently their peripheries are each provided with as many type sections, as there are station names on the dial 15, in other words, as there are type plates 2, 2 in either vertical row of compartments 3, 3 in the magazine 1. Each of these type sections contains the number of a station, the class or sort and the price of the ticket. Of course the type sections on the several registering type drums 226, 226 are arranged in the same order as the type plates 2, 2 in the several vertical rows of compartments 3, 3. For example the type sections in four horizontal rows on the first four registering type drums 226, 226 may be arranged as follows:

33 P. I 2.90	33 P. II 2.20	33 P. III 1.50	33 P. IV .80
37 P. I 3.20	37 P. II 2.40	37 P. III 1.60	37 P. IV .80
43 P. I .50	43 P. II .40	43 P. III .25	43 P. IV .15
44 P. I .90	44 P. II .70	44 P. III .50	44 P. IV .25

In each of these four groups the first column comprises the numbers of the several station names, the second column the kinds of trains (in this instance denoted by P = passenger train, or it may be an F for fast train or a T for through train or an S for saloon-train and so on), the third column the classes of cars (I = first class, II = second class and so on) and the fourth column the prices of tickets (in this case in German currency). The six registering type drums 226, 226, are so proportioned, that on the magazine 1 shifting upwards or downwards they are so turned as to place the respective type sections on the side of the shaft 227 opposite to the magazine 1, the type section in the vertical central plane of the printing device 4 corresponding to that type plate 2 in its compartment 3, which is opposite to the space between the table 9 and the platen 225 in the printing device 4. A pressing roller 238 is adapted to strike

against this type section, it being mounted to turn in the upper arms of two two-armed levers 237, 237. The latter are fastened on a horizontal shaft 236, which is mounted to rock in two arms of the left middle standard 201 in Fig. 2. An inclined shaft 235 is mounted in suitable supports to turn and is put in gear with the shaft 219 by means of two bevel wheels 233, 233 (Fig. 5) and with the shaft 236 by means of two bevel wheels 234, 234.

It will be seen, that by moving the hand-lever 221 from its normal position indicated by the dotted lines in Figs. 1 and 5 to its other position shown in full lines the pressing roller 238 will be pressed against the type section on the registering type drum 226 in the vertical central plane of the printing device 4, and that by moving back the hand-lever 221 the pressing roller 238 will be moved away from the registering type drum 226 in the direction of the arrow. The left middle standard 201 in Fig. 2 is provided with two pins 231 and 232, on which two paper rolls 228 and 229 respectively are mounted to turn. A two-armed lever 240 is mounted to rock on the lower pin 231 and its lower arm is pivotally connected with the lower arm of the two-armed lever 237 by means of a rod 239. The upper arm of the lever 240 carries a pawl 242, which engages in a ratchet wheel 243 rigidly connected with the upper paper roll 229, a spring 241 serving for pressing on the pawl 242 and a checking pawl shown being provided on the standard for preventing the paper roll 229 from returning. A registering paper strip 230 is led from the lower paper roll 228 over the pressing roller 238 to the upper paper roll 229. It will be seen, that during each return of the hand-lever 221 the two-armed lever 240 partakes in the motion of the two-armed lever 237 in the direction of the arrow near the rod 239, so that the registering paper strip 230 will be fed, it being unwound from the lower paper roll 228 and wound on the upper paper roll 229. A shaft 33 is mounted to turn in two pendent arms of the two frame plates 11, 11 and has fastened on it six inking rollers 32, 32, which are adapted to ink the six registering type drums 226, 226 during their rotation.

The ticket printing and registering apparatus operates as follows: When it is desired to print a ticket of a certain kind and for a certain station name, the magazine 1 is vertically adjusted by means of the hand-crank 13 and its bolt 13<sup>a</sup> with regard to the indicator 16 and the dial 15, so as to bring the horizontal row of type plates 2, 2 for the desired station name into the horizontal central plane of the space between the table 9 and the platen 225 of the printing device 4; and the carriage with the magazine 1 and the reservoir 17 is horizontally adjusted by means

of the hand-crank 24 with regard to the indicator 26 and the dial 25, so as to place the type plate 2 of the desired kind and the opposite compartment of the reservoir 17 into the vertical central plane of the printing device 4. The knob 222<sup>a</sup> is then depressed for causing the fork 222 to engage the pin 223 on the cranked double rack 212 and next the hand-lever 221 is moved from its normal position on the right in Fig. 5 to its vertical or middle position, so as take along with it the cranked double rack 212 and to simultaneously move the two slides 8 and 20 towards each other, so that the slide 8 will engage in the groove 3<sup>1</sup> of the respective compartment 3 in the magazine 1 and will eject the type plate 2 therefrom to the table 9 while inking it by means of the inking roller 29; and the head of the rack 20 will eject the lowermost ticket blank from the respective channel in the reservoir 17 to the forked support 70 just above the type plate 2. During this movement of the rack 20 the ticket blank 18 taken along with it will strike the ejector 313 and turn it into the position shown in Fig. 13. The wall of the printing device will prevent the ejector 313 from turning further. On the rack 20 near the end of its stroke engaging in the pinion 307 it will simply turn the shaft 312 with the ratchet wheel 312<sup>a</sup>, which is permitted by pawl 313<sup>b</sup>. Now the knob 222<sup>a</sup> is released to disconnect the hand-lever 221 from the double rack 212, which henceforward will remain idle. The hand-lever 221 is thereupon moved from its middle position to the other extreme position on the left in Fig. 5, so that the vertical spindle 30 will be longitudinally moved by means of its screw-thread and will press the table 9 with the type plate 2 upwards against the ticket blank and the spring-pressed platen 225 to produce the impression on the ticket. At the same time the pressing roller 238 with the registering paper strip 230 will be struck against the type section on the registering type drum 226 to print off the said type section on the paper. It will be noted, that meanwhile the slide 8 engaging in the groove 3<sup>1</sup> of the compartment 3 will prevent the magazine 1 from shifting and thus prevent the type plate 2 on its return from getting into a wrong compartment 3. Thereupon the hand-lever 221 is returned to its middle position, so as to release the printed ticket from the platen 225. The knob 222<sup>a</sup> is depressed to connect the hand-lever 221 with the double rack 212 by means of the fork 222 and the pin 223, after which the hand-lever 221 is moved back to its normal position on the right in Fig. 5, so that the slide 8 by means of its two hooks 8<sup>3</sup>, 8<sup>3</sup> withdraws the type plate 2 from the table 9 and returns the same to the compartment 3, after which it releases the same. Meanwhile at the commencement of its return the rack 20 will have turned the ejector 313 for ejecting

the printed ticket from the forked support 70 to the chute 314, so that the ticket is thus discharged.

The ticket printing and registering apparatus may be varied in many respects without departing from the spirit of my invention. If so preferred, the magazine 1 may be arranged to be shifted only vertically and the reservoir 17 may be made stationary, while the printing device 4 is placed on a carriage and is arranged to be horizontally shifted. The effect will in this case be exactly the same as before. Or the printing device 4 alone may be placed on a carriage to be shifted horizontally and may be made vertically adjustable in the carriage, while both the magazine 1 and the reservoir 17 are made stationary.

If so preferred, the magazine 1 and the reservoir 17 may be given the shapes of two hollow drums, as is for instance diagrammatically illustrated in Figs. 6 and 7. The reservoir 17<sup>1</sup> is formed as a hollow vertical prism, which is placed on a suitable support. The magazine 1<sup>1</sup> is formed as a prism fastened on a vertical shaft 37<sup>1</sup> in the center line of the reservoir 17<sup>1</sup>, this shaft being mounted in suitable bearings (not shown) to turn and to longitudinally move. Fastened on the shaft 37<sup>1</sup> is a smaller prism 31<sup>1</sup>, which forms an equivalent for the registering type drums 226, 226 described above. All the three prisms 17<sup>1</sup>, 1<sup>1</sup> and 31<sup>1</sup> may each have as many sides, as there are sorts of tickets. In the annular space between the prismatic magazine 1<sup>1</sup> and the prismatic reservoir 17<sup>1</sup> a stationary printing device 4<sup>1</sup> may be placed, in which the table 9 and the platen 225 should be so disposed, that the lowermost ticket blanks in the several vertical channels of the reservoir 17<sup>1</sup> will be in the same horizontal plane as the space between the platen 225 and the supporting fork 70. Suitable means may be provided for vertically adjusting the shaft 37<sup>1</sup> with the two prisms 1<sup>1</sup> and 31<sup>1</sup> for the respective station name and for simultaneously adjusting all the three prisms 1<sup>1</sup>, 31<sup>1</sup> and 17<sup>1</sup> in the horizontal direction by turning them for the respective kind of ticket. In this case the printing device 4<sup>1</sup> will require to be stationary, the same as the registering mechanism which is shown in Fig. 7 and comprises the same parts as described above. Or the reservoir 17<sup>1</sup> may be rendered stationary and the shaft 37<sup>1</sup> with the two prisms 1<sup>1</sup> and 31<sup>1</sup> may be arranged to be only vertically adjustable, while the printing device 4<sup>1</sup> and the registering mechanism may be arranged to be horizontally adjustable by turning them around the shaft 37<sup>1</sup>, be it by placing them on wheels running on concentric rails or by placing them on a circular turret which is actuated by means of a pinion and a toothed ring, or be it by placing them on an arm turnable on the shaft 37<sup>1</sup>.

In Figs. 6 and 7 the prismatic reservoir 17<sup>1</sup> is shown as possessing a number of vertical channels, which is double the number of the sides of the prismatic magazine 1<sup>1</sup>, in other words double the number of vertical rows of compartments 3<sup>1</sup>, 3<sup>1</sup>. This arrangement presents the advantage, that it is thereby rendered possible to print several sorts of ticket blanks with a single type plate 2<sup>1</sup> by merely displacing the reservoir 17<sup>1</sup> with reference to the magazine 1<sup>1</sup>. For example a type plate 2<sup>1</sup> destined for ordinary tickets may be employed for producing impressions on a Sunday ticket blank or on a ticket blank provided on the back with a special print.

It is obvious, that the registering type prism 31<sup>1</sup> will require to have the same number of type sections on each side as the side of the prismatic magazine 1<sup>1</sup> contains compartments 3<sup>1</sup>, 3<sup>1</sup> and that the several type sections on each side will require to have the same distances from each other as the type plates 2<sup>1</sup>, 2<sup>1</sup> in a side of the prismatic magazine 1<sup>1</sup>.

I claim:

1. In a ticket printing apparatus, the combination with a magazine comprising a plurality of compartments in several parallel rows, of a plurality of type plates loose in the compartments of said magazine, one type plate in each compartment, a reservoir comprising several channels for ticket blanks, a printing device comprising a table and a ticket blank support, means for ejecting either type plate from said magazine to the table of said printing device and for returning same, and means for ejecting a ticket blank from either channel of said reservoir to the ticket blank support of said printing device.

2. In a ticket printing apparatus, the combination with a magazine comprising a plurality of compartments in several parallel rows, of a plurality of type plates loose in the compartments of said magazine, one type plate in each compartment, a reservoir comprising several vertical channels for ticket blanks, a printing device comprising a table and a ticket blank support, means for selecting and ejecting either type plate from said magazine to the table of said printing device and for returning same, and means for ejecting the lowermost ticket blank from the corresponding channel of said reservoir to the ticket blank support of said printing device.

3. In a ticket printing apparatus, the combination with a movable magazine comprising a plurality of parallelepipedal compart-

ments in several vertical rows, of a plurality of type plates loose in the compartments of said magazine, one type plate in each compartment, a movable reservoir comprising vertical channels for ticket blanks in correspondence with the several vertical rows of compartments in said magazine, a stationary printing device between said magazine and said reservoir and comprising a table and a ticket blank support beneath the platen, means for vertically adjusting said movable magazine, means for horizontally adjusting said movable magazine and said movable reservoir with regard to said stationary printing device, means for ejecting the respective type plate from said magazine to the table of said printing device and for returning same, means for ejecting the lowermost ticket blank from the corresponding channel of said movable reservoir to the ticket blank support of said printing device, and means for discharging the printed ticket.

4. In a ticket printing apparatus, the combination with a frame, of a carriage horizontally movable in said frame, a dial with indicator and means for horizontally adjusting said carriage, a magazine vertically movable in said carriage and comprising a plurality of parallelepipedal compartments in several vertical rows, a plurality of type plates loose in the compartments of said magazine, one type plate in each compartment, a dial with indicator and means for vertically adjusting said magazine, a reservoir fastened in said carriage and comprising several vertical channels for ticket blanks in correspondence with the several vertical rows of compartments in said magazine, a printing device in said frame between said magazine and said reservoir and comprising a table and a ticket blank support beneath the platen, a slide horizontally guided in said frame and adapted to push the respective type plate from said magazine to the table of said printing device and to return same, a second slide horizontally guided in said frame and adapted to eject the lowermost ticket blank from the corresponding channel of said reservoir to the ticket blank support of said printing device and to discharge during its return the printed ticket, and means for simultaneously moving said slide and said second slide in opposite directions.

MARTIN LEBEIS.

Witnesses:

CARL MEYER,  
LOUIS VANDORN.