

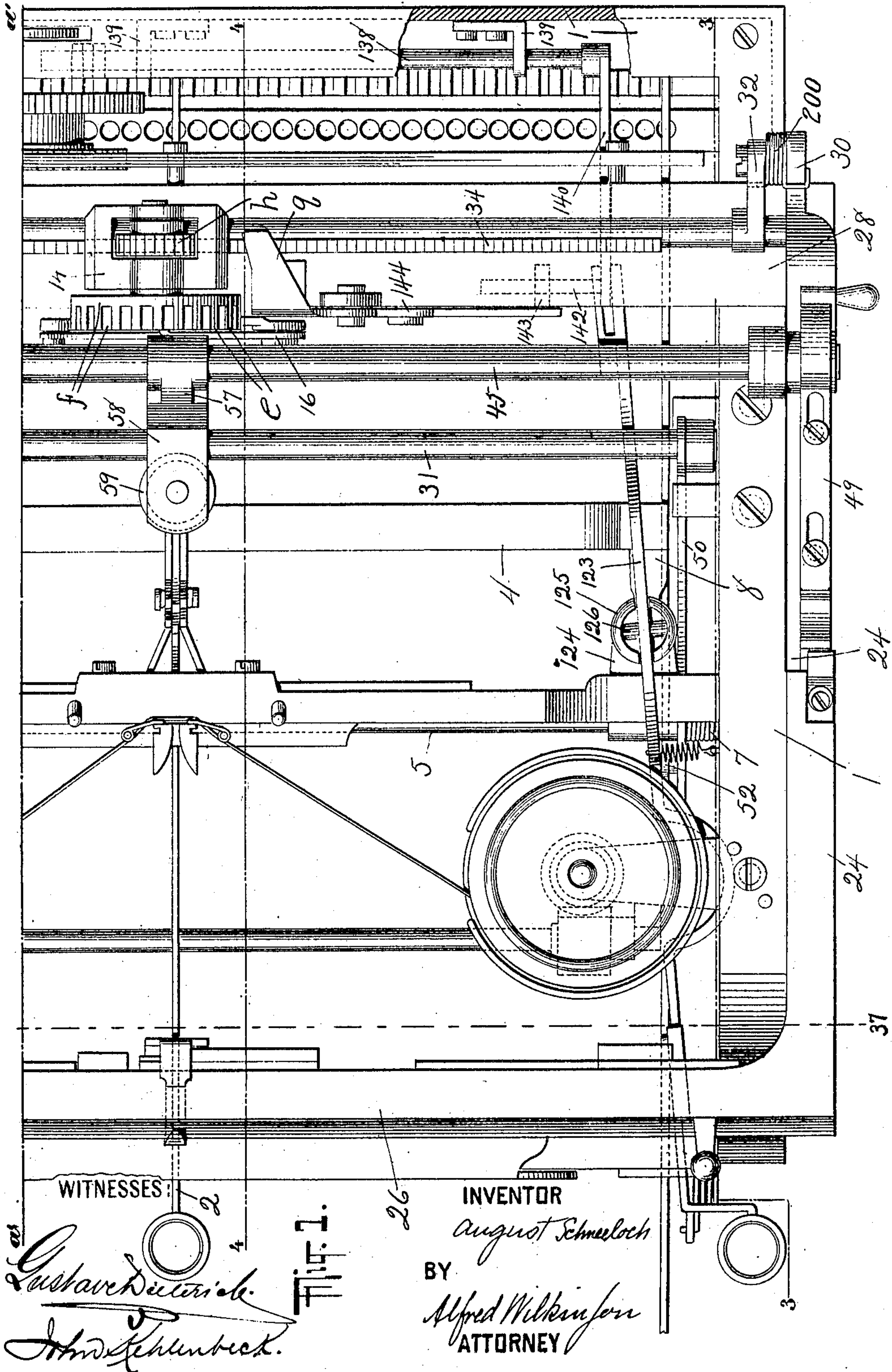
No. 844,756.

PATENTED FEB. 19, 1907.

A. SCHNEELOCH.
TYPE WRITING MACHINE.

APPLICATION FILED MAY 9, 1902.

5 SHEETS—SHEET 1.

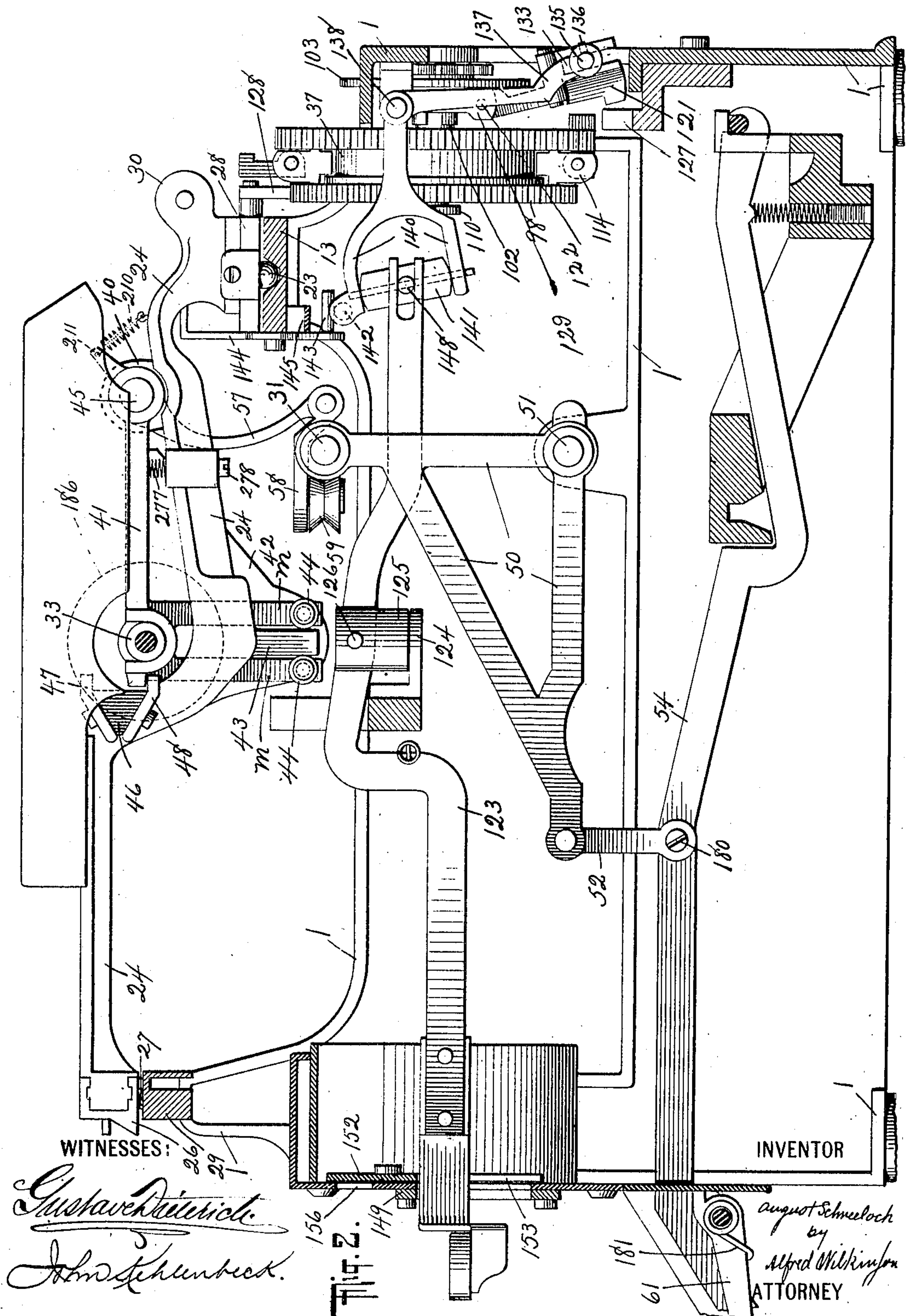


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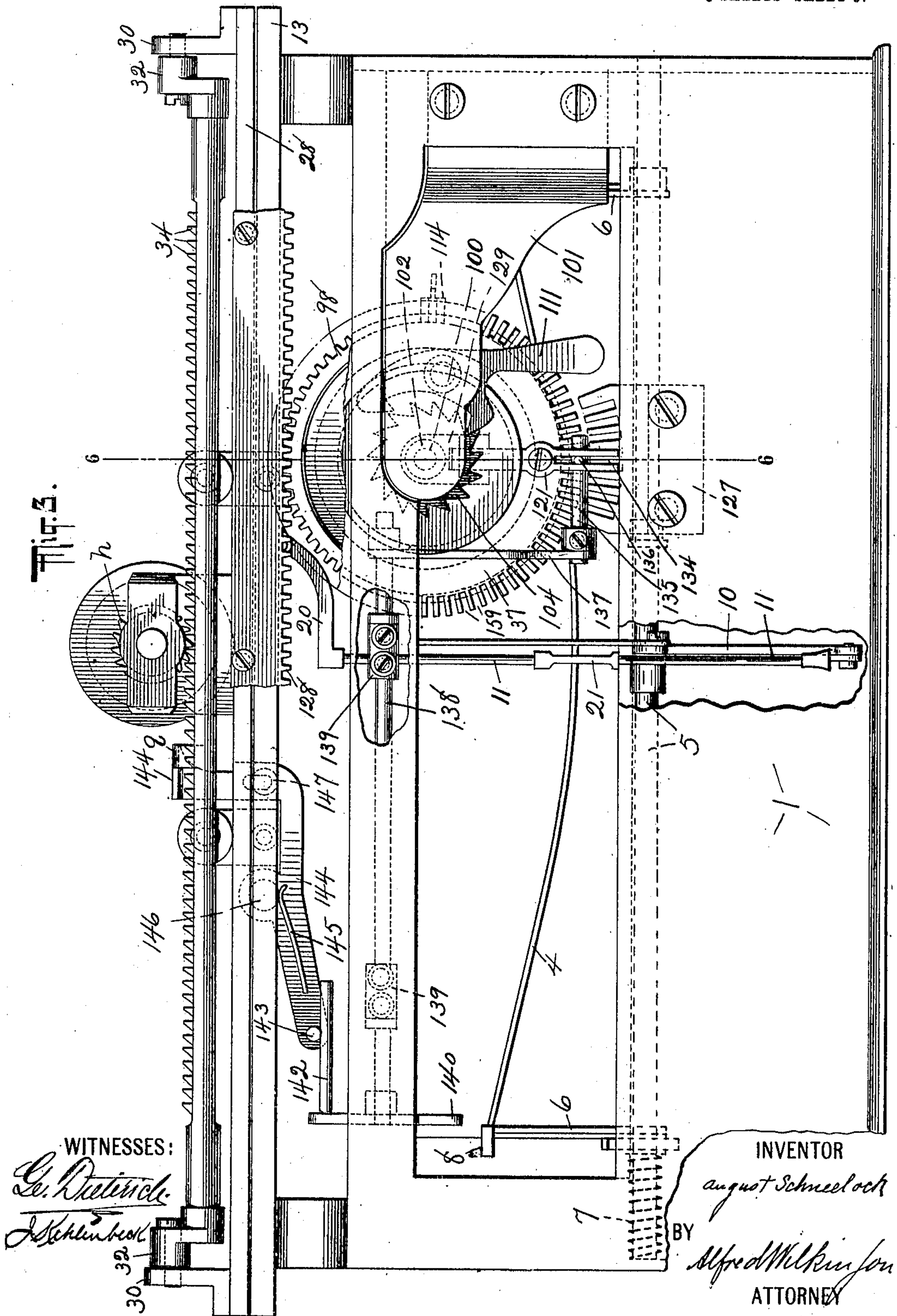


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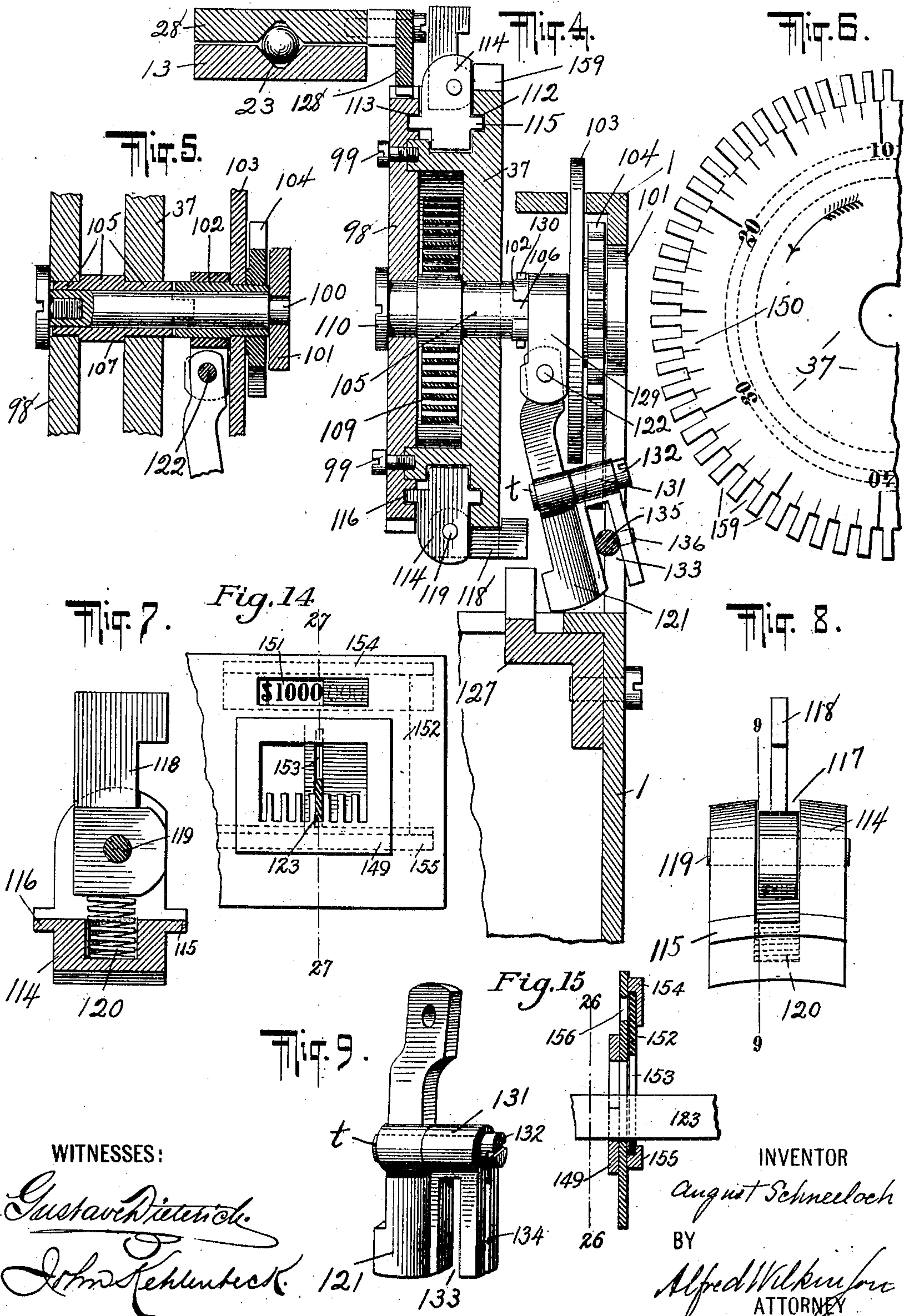


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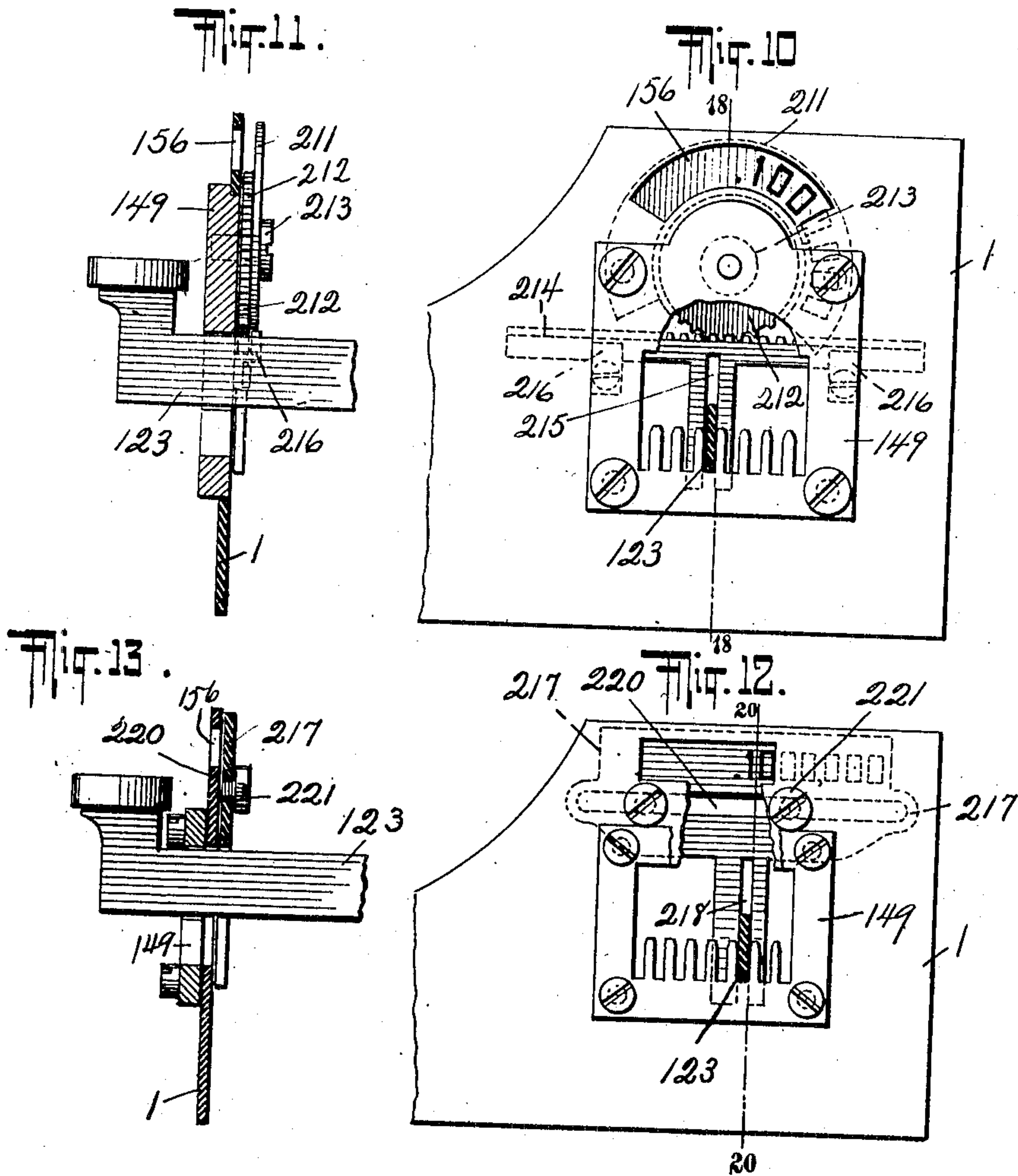


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6 SHEETS—SHEET 6.



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TYPE-WRITING MACHINE.

No. 844,756.

Specification of Letters Patent.

Patented Feb. 19, 1907.

Application filed May 9, 1902. Serial No. 106,524.

To all whom it may concern:

Be it known that I, AUGUST SCHNEELOCH, of Syracuse, in the county of Onondaga, in the State of New York, have invented new and useful Improvements in Type-Writing Machines, of which the following, taken in connection with the accompanying drawing, is a full, clear, and exact description.

My invention relates to a tabulating mechanism or carriage-stop mechanism of type-writing machines in which by the operation of a special key the carriage may be released and automatically stopped in the course of its travel from right to left at a point corresponding to the decimal-point of the column or at any desired point in front thereof so that the machine may be conveniently used in writing bills or other documents having words or figures arranged in columns, also in certain details of construction.

My invention will be understood by reference to the drawings herewith, in which the reference letters and numerals of the specification indicate the corresponding parts in all the figures.

Figure 1 is a partial plan of my type-writing machine with the carriage removed. Fig. 2 is a vertical section on line 3 3 of Fig. 1. Fig. 3 is a rear elevation with the carriage removed and parts broken away. Fig. 4 is an enlarged vertical section on line 6 6 of Fig. 3, showing the spring-barrel and adjacent parts of the tabulating mechanism. Fig. 5 is a portion of Fig. 4, showing other parts in section. Fig. 6 is a rear elevation of a portion of the spring-barrel, showing the scale thereon. Fig. 7 is an enlarged side elevation of a tabulator-stop detached with the guide-block in section. Fig. 8 is a rear elevation of Fig. 7. Fig. 9 is an isometric view of the denomination-stop detached. Fig. 10 is a front elevation of the tabulator-scale indicator. Fig. 11 is a vertical cross-section on line 18 18 of Fig. 10. Figs. 12 and 13 are corresponding views to Figs. 10 and 11, respectively, showing a simple modification. Figs. 14 and 15 are respectively elevation and vertical cross-section of the preferred construction of the tabulator-scale indicator.

In the figures, 1 indicates the main frame of the machine; 29, the front bar carrying rollers 27; 13, the rear grooved runway for the carriage with balls 23; 2, one of the key-levers; 24 24, the carriage side pieces carrying the

front bar 26, and 28 the rear bar of the carriage-frame grooved to correspond to runway 13. Universal-bar rod 5, journaled in the frame of the machine, carries universal-bar arm 6, connected by links 8 to the universal bar 4, retained in its rear position by spring 7, coiled on the rod. At the depression of each key-lever the universal bar is moved forward, the universal-bar rod is rocked, and the escapement mechanism of any suitable construction is operated. The dog-support 16, carrying the dogs engaging with escapement-wheel *f*, may be operated by connections shown in Fig. 3, where they are sufficiently indicated, 10 being the lower ratchet-arm fixed on universal-bar rod 5 and connected by vertical rod 11, whose length is adjusted by turnbuckle 21, through link 20, to the dog-support. The special construction and details of these parts is described in an application filed as a division of this.

Runway 13 supports the escapement-bracket 14, which affords a journal-bearing for suitable shaft carrying the pinion *h* and the escapement-wheel *f*, having teeth *e*. On this runway also is journaled the dog-support 16. In bracket 30 on rear bar 28 are journaled arms 32 32, carrying the carriage-rack 34, maintained in engagement with escapement-pinion *h* by springs 200 or other suitable mechanism, by which the pinion is held from moving toward the left in obedience to the spring-barrel 37. The engagement of this pinion *h* with the rack 34 prevents the return of the carriage to its first position, which is permitted when this rack is depressed out of engagement with said pinion.

I show a suitable platen-guide mechanism in Fig. 2. On brackets 40 of the carriage is journaled the platen-rod 45, on which are fixed the two swinging arms 41, carrying the platen-holder on the cylinder-shaft and bushings 33. The end pieces 24 of the carriage have the downwardly-extending guiding-block 43, with which engage on each side the rollers 44 44 on the arms *m m* on the platen-holder, operating as a guide to insure the movement in a vertical line of the platen-holder as it is shifted from one case to the other. Stops 47 and 48 on block 46, carried on the side pieces 24, limit the upward and downward movement of the platen-holder by engagement with lug 49 on arm 41. Spring 277, whose tension may be adjusted

by screw 278, is supported on side piece 24 and engages with arm 41, to be compressed by engagement therewith and to act as a cushion for said arm and the platen, counter-acting jar and shock when the platen is moved from upper to lower case. Spring 210 coöperates to the same purpose. This is a contracting spring, maintained under tension between its points of connection on side piece 24 and extension 211 on swinging arm 41, so that it tends to some extent to counterbalance the weight of the platen.

Journalled on each side of the machine on bar 51 is a bell-crank lever 50, connected by suitable link 52 to the shift-key lever 54, so that when either shift-key lever is depressed rod 31, carried on the upper ends of the bell-crank lever 50, is moved forward, engaging with grooved roller 59 on roller-bearing arm 58, hinged to the lower end of arm 57, fixed on platen-rod 45, whereby said platen-rod is turned, raising arms 41 41, and with them the platen-holder and platen 186, into the upper-case position. Adjacent to the shift-key lever is indicated a lock-lever 61 and its retaining-spring 181, by which the shift-key lever may be operated.

Tabulating mechanism.—Conveniently journalled on the rear of the frame of the machine is the notched spring-barrel 37, having on its rear face a scale 150, corresponding to the usual scale on the front of the machine. To the spring-barrel by means of screws 99 99 is fastened a pinion 98, acting as the barrel-cover and engaging with the tabulating-rack 128. The spring-barrel so constructed is journalled on the bushing 105, provided with the shoulder 107 and engaging with slot 106 of bushing 102, carrying the wind-up wheel 103 and the rear ratchet 104. These parts are retained on shaft 100, secured in bracket 101 by locking-screw 110. 109 is the main carriage-spring pinned at one end to shoulder 107 and at the other end to the inner face of the spring-barrel 37. 111 is an escapement-lever suitably supported to engage with ratchet 104 to hold the spring-barrel against the force of the spring.

Bushings 105 and 102 are made separate for convenience, but when assembled are connected to rotate together by tongues on bushing 105 engaging with slot or slots 106, so that the main spring may be wound up by wind-up wheel 103, as shown in Figs. 4 and 5.

On the inner face of the spring-barrel and the pinion 98 are the corresponding circular grooves 112 and 113, with which engage the corresponding curved ribs 115 and 116 on one or more guiding-blocks 114, arranged in position around the spring-barrel and slotted in their outer ends to receive the column-stops 118 on their pivots 119. Said column-stops are adjusted in various positions on the spring-barrel by sliding them around in the annular grooves 112 113, with which their

bearing-ribs 115 116 engage. Any desired number of column-stops may be used to be turned down, engaging with the desired notch on the spring-barrel 37 and retained either in or out of engagement by the spring 120, so that as the carriage progresses the column-stop will engage with the denomination-stop 121, adjusted in any desired position by means of the tabulator-lever 123, to be described. The parts are so arranged that when one of the column-stops is turned into the notch 159 (indicated, for instance, at number "20" on the scale) and the denomination-stop is operated the carriage will stop at a point corresponding with the number "20" on the usual scale at the front of the machine or in such relation thereto as the operator may determine by the lateral movement of tabulator-lever 123. As shown in Fig. 7, the column-stop is arranged out of operative position, and there maintained by spring 120, held in recess in block 114, which spring engages with the flat base of the column-stop. When the column-stop is turned rearwardly into position to engage with the denomination-stop, it is maintained in said second position by the engagement of said spring with its flattened rear surface. This tabulator-lever is journalled at 124 on the machine in the swivel-bushing 125, so that the lever may be swung both vertically and laterally. It swings vertically on pin 126 and laterally with the swivel-bushing.

Attached to the frame of the machine at the rear is the slotted piece 127 to hold in position in the desired slot the denomination-stop 121, pivotally supported at 122 on swinging arm 129, carried on bushing 102 and held in place by pins 130. In bearing 131 of the denomination-stop is the adjusting-screw 132 for adjusting the brake *t*, of leather or other slightly-yielding material, adapted to engage with the rear face of the spring-barrel and act as a friction-brake thereon to check its speed. Slots in piece 127 are inclined to correspond to slots 159.

At the lower end of the denomination-stop are the cross-slots 134 and 133, with which respectively engage the pin 136 and its rod 135, fixed on the lower end of lever 137, fixed in its turn to lock-rod 138, journalled and sliding in brackets 139 139, fixed on the main frame. To the outer end of rod 138 is secured the forked arm 140, having swivel 141 arranged between its ends, on which is the cross-pin 148 to engage, respectively, with the vertical and horizontal cross-slots on the rear end of tabulator-lever 123, whereby the denomination-stop may be moved forward and back and swung to be set in position in the proper slot in slotted piece 127. Vertical slot in rear end of tabulator-lever is shown in Fig. 1, horizontal slot in Fig. 2. Forked arm 140 also carries the pin 142, engaging with pin 143 on rack-

releasing lever 144, fulcrumed at 146 and provided with the hook *q* to engage with the carriage-rack 34 to depress it out of engagement with the pinion *h* and carrying also the spring 145, whereby it is maintained in normal position. As the carriage-rack 34 is carried on arms 32, journaled in brackets 30, and the hook *q* is arranged to engage with the carriage-rack, when said hook is depressed it swings downwardly the carriage-rack against the pressure of springs 200 and out of engagement with pinion *h*, as indicated in Figs. 1 and 3.

At the front of the machine there is also arranged a slotted piece 149, (the preferred construction shown in Figs. 14, 15,) so arranged in relation to the rear slotted piece 127 and the scale 150 on the rear face of the spring-barrel that when the tabulator-lever 123 is inserted in the slot of the slotted piece 149 at the front of the machine corresponding with the decimal-point on the scale 151 the carriage will stop at the desired point on the scale 150 at which one of the column-stops has been inserted—that is, by the engagement of the column-stop with the denomination-stop—and if the operator desires to stop at any point before that he may do so by inserting the tabulator-lever in the slotted piece 149 at any slot indicated by the scale 151. Two column-stops only are shown in Figs. 2 and 4; but it is evident that any convenient number may be arranged around the spring-barrel, corresponding to the number of columns to be written.

As shown in Figs. 14 and 15, a shutter 152, carried in upper and lower guiding-brackets 154 and 155, is slotted at 153 to engage with the tabulator-lever 123, so that as this lever is moved from left to right the shutter cut away at its upper portion will be moved to show the figures and decimal-point of the scale 151 on the upper guide-bracket 154 or other suitable part through the cut-out 156 in the front of the machine.

In Figs. 10 and 11 is shown a modified form of the tabulator-scale indicator in which the lever engages with the guide-slot 215 of a rack 214, carried in brackets 216 and engaging with the pinion 212, carrying the disk 211, on which is inscribed the scale to be seen through the curved cut-out 156, and journaled in the slotted piece 149 by the screw 213. Figs. 12 and 13 show another modification in which the scale is also moved, to be seen through the cut-out 156, by the engagement of the lever with the guide-slot 218 of the scale-indicator 217, arranged within the front of the machine and sliding on the guide-screws 221, engaging with the slot 220. Here the decimal-point on the scale-indicator 217 will be visible from the right of the machine to the left as the lever is moved toward the left.

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

1. In the tabulating mechanism of a type-writing machine, the combination with the main frame and the carriage, of column-stops supported on the main frame, a connection between the stops and the carriage, whereby they are moved, and an adjustable denomination-stop also supported on the main frame and adapted to be adjusted to different denominational points to engage with the column-stops, to stop the carriage at said points.

2. In the tabulating mechanism of a type-writing machine, a front slotted piece, a rear slotted piece, said pieces each having a plurality of corresponding slots, a denomination-stop hung adjacent to the rear piece, a single tabulating-lever extending adjacent to the front piece, connections between the lever and the stop, whereby the stop is arranged in the proper slot of the rear piece by the insertion of the lever in the corresponding slot of the front piece, and a scale adjacent to the front piece to guide the insertion of the lever in the proper slot, to permit the writing of the desired number of figures before the carriage reaches the decimal-point.

3. In the tabulating mechanism of a type-writing machine, the combination with the frame and the carriage, of one or more column-stops moved by the movement of the carriage, corresponding front and rear pieces, each provided with several slots, a denomination-stop arranged adjacent to the rear piece, a tabulator-lever having its front end arranged adjacent to the front piece, and connections between the tabulator-lever and the denomination-stop, whereby the denomination-stop is moved into position in one of the slots of the rear slotted piece to engage with the column-stops and stop the carriage.

4. In the tabulating mechanism of a type-writing machine, the combination with the frame and the carriage, of one or more column-stops moved by the movement of the carriage, corresponding front and rear pieces, each provided with several slots, a denomination-stop arranged adjacent to the rear piece, a tabulator-lever having its front end arranged adjacent to the front piece, connections between the tabulator-lever and the denomination-stop, whereby the denomination-stop is moved into position in one of the slots of the rear slotted piece to engage with the column-stops and stop the carriage, and a scale adjacent to the front piece to guide the insertion or adjustment of the tabulator-lever in the proper slot of the front slotted piece and thereby the adjustment of the denomination-stop in the corresponding slot of the rear slotted piece.

5. In the tabulating mechanism of a type-

writing machine, the combination with corresponding front and rear slotted pieces, of a tabulator-lever suitably journaled, a denomination-stop hung at the rear of the machine adjacent to the rear slotted piece, connections between the lever and the stop, whereby the stop may be arranged in a slot of the rear slotted piece by the insertion of the lever in the corresponding slot of the front slotted piece, of a spring-barrel suitably journaled, a pinion thereon engaging with a rack on the carriage, and column-stops carried on the spring-barrel to engage with the denomination-stop to stop the carriage at predetermined points.

6. In the tabulating mechanism of a type-writing machine, the combination with the frame and the carriage, of one or more movable stops on the frame moved by the movement of the carriage, corresponding front and rear slotted pieces on the frame, a denomination-stop suitably hung and arranged adjacent to the rear piece, a tabulator-lever having its forward end arranged adjacent to the front slotted piece, connections between the tabulator-lever and the denomination-stop, whereby the denomination-stop is moved by the lever into position to engage with the column-stop and stop the carriage, a scale adjacent to the front piece to guide the adjustment of the tabulator-lever in the proper slot thereof, and a moving part connected to the lever, whereby the scale is brought into view.

7. In the tabulating mechanism of a type-writing machine, the combination with the frame and the carriage, of one or more movable stops on the frame moved by the movement of the carriage, corresponding front and rear pieces on the frame, a denomination-stop suitably hung and arranged adjacent to the rear piece, a tabulator-lever having its forward end arranged adjacent to the front slotted piece, connections between the tabulator-lever and the denomination-stop, whereby the denomination-stop is moved by the lever into position to engage with the column-stops and stop the carriage, a fixed scale adjacent to the front piece to guide the adjustment of the tabulator-lever in the proper slot thereof, a shutter moving over the fixed scale, and connections between the shutter and the tabulator-lever whereby the scale is brought into view.

8. In the tabulating mechanism of a type-writing machine, the combination with the frame and the carriage, of one or more movable column-stops arranged on the frame, connections between the column-stops and the carriage, whereby they are moved by the movement of the carriage, corresponding slotted front and rear pieces, each provided with several slots, a denomination-stop arranged adjacent to the rear piece, a single tabulator-lever having its forward end ar-

anged adjacent to the front slotted piece, connections between the tabulator-lever and the denomination-stop, whereby the denomination-stop is moved into operative position by the lever, a fixed scale arranged adjacent to the front piece, a sliding shutter adapted to be moved in front of said scale, and connections between the shutter and the tabulator-lever, whereby the shutter is moved and the figures on the scale brought into view to guide the insertion of the lever in the proper slot in the front piece and the adjustment of the denomination-stop in the corresponding slot in the rear slot, whereby the desired number of figures may be printed before the carriage is stopped.

9. In the tabulating mechanism of a type-writing machine, the combination of front and rear corresponding slotted pieces, a tabulator-lever suitably supported, a denomination-stop suitably hung adjacent to the rear slotted piece, connections between the lever and the stop whereby the stop may be inserted in a slot of the rear slotted piece corresponding to the slot of the front slotted piece in which the lever may be inserted, a suitably-journaled spring-barrel having a slotted edge and a scale corresponding to the front scale, a pinion secured to said barrel engaging with the carriage-rack, column-stops arranged between said spring-barrel and said pinion and having ribs fitted to corresponding circular grooves on the adjacent inner faces of the spring-barrel and the pinion, and adapted to be arranged extending outwardly through the desired slot on the edge of the spring-barrel to engage with the denomination-stop and stop the carriage at a predetermined point.

10. In the tabulating mechanism of a type-writing machine, the combination of front and rear corresponding slotted pieces, of a lever suitably supported, a denomination-stop suitably hung adjacent to the rear slotted piece, connections between the lever and the stop whereby the stop may be inserted in a slot of the rear slotted piece corresponding to the slot of the front slotted piece in which the lever may be inserted, a suitably-journaled spring-barrel having a slotted edge and a scale corresponding to the front scale, a pinion secured to said barrel engaging with the carriage-rack, column-stops arranged between said spring-barrel and said pinion and having ribs fitted to corresponding circular grooves on the adjacent inner faces of the spring-barrel and the pinion, and adapted to be arranged extending outwardly through the desired slot on the edge of the spring-barrel to engage with the denomination-stop and stop the carriage at a predetermined point, and an anti-friction brake-piece of soft material arranged on the front face of the denomination-stop to engage with the rear face of the spring-barrel

to check its motion, and a set-screw in the rear face of the denomination-stop to adjust said brake-piece.

11. In the tabulating mechanism of a type-writing machine, the combination of a lever suitably supported, a denomination-stop suitably supported, connections between the lever and the stop whereby the stop may be suitably adjusted, a suitably-journaled spring-barrel, a pinion secured to said barrel engaging with the carriage-rack, column-stops arranged between said spring-barrel and said pinion and having ribs fitted to corresponding circular grooves on the adjacent inner faces of the spring-barrel and the pinion, and adapted to be turned rearwardly, to engage with the denomination-stop and stop the carriage at predetermined points.

12. In the tabulating mechanism of a type-writing machine, the combination of a lever suitably supported, a denomination-stop suitably hung, connections between the lever and the stop whereby the stop may be suitably adjusted, a suitably-journaled spring-barrel having a slotted edge and a scale corresponding to the front scale, a pinion secured to said barrel engaging with the carriage-rack, column-stops carried on the spring-barrel and adapted to be turned rearwardly, to engage with the denomination-stop and stop the carriage at a predetermined point, and an antifriction brake-piece of soft material arranged on the front face of the denomination-stop to engage with the rear face of the spring-barrel to check its motion, and a set-screw in the rear face of the denomination-stop to adjust said brake-piece.

13. In the tabulating mechanism of a type-writing machine, the combination of a lever suitably supported, a denomination-stop suitably supported, connections between the lever and the stop whereby the stop may be suitably adjusted, a suitably-journaled spring-barrel, a pinion secured to said barrel engaging with the carriage-rack, column-stops arranged between said spring-barrel and said pinion and having ribs fitted to corresponding circular grooves on the adjacent inner faces of the spring-barrel and the pinion and adapted to be turned rearwardly, to engage with the denomination-stop and stop the carriage at a predetermined point, and an antifriction brake-piece of soft material arranged on the front face of the denomination-stop to engage with the rear face of the spring-barrel to check its motion.

14. In the tabulating mechanism of a type-writing machine, the combination with the frame, the carriage and the rack on the carriage, of a spring-barrel having a slotted margin and a scale on its rear face corresponding to the front scale, of a pinion secured to said spring-barrel and engaging with the carriage-

rack, a suitably-journaled shaft for the spring-barrel and the pinion, guiding-blocks arranged between the spring-barrel margin and pinion, having integral ribs fitted to corresponding circular grooves on the adjacent inner faces of the spring-barrel and pinion, column-stops pivotally supported on said blocks, springs to hold said column-stops in either operative or inoperative position, said column-stops being adapted to be turned rearwardly on their pivoted support into the desired marginal slot to engage with the denomination-stop and stop the carriage at the predetermined points, of said denomination-stop and means for adjusting it in position to engage with said column-stops.

15. In the tabulating mechanism of a type-writing machine, the combination with corresponding front and rear slotted pieces each provided with several slots, of the tabulator-lever suitably supported and extending forwardly through the front slotted piece, a denomination-stop suitably supported on the rear of the machine, connections between the tabulator-lever and the denomination-stop, a numbered scale adjacent to the front slotted piece, means to render the successive numbers thereon visible, operated by the lever, whereby the insertion of the lever in the desired slot in the front slotted piece is guided and the denomination-stop may be inserted in the corresponding slot in the rear slotted piece, a spring-barrel, a pinion thereon to engage with a carriage-rack, and column-stops thereon to engage with the denomination-stop as the spring-barrel rotates to stop the carriage at a predetermined point.

16. In the tabulating mechanism of a type-writing machine, the combination with the main frame and the carriage, of column-stops rotatably supported on the main frame, a connection between said stops and the carriage whereby the stops are rotated as the carriage is moved, an adjustable denomination-stop hung on the main frame and means to adjust said stop to different denominational points to cause it to engage with the column-stops, to stop the carriage, substantially as described and shown.

17. In the tabulating mechanism of a type-writing machine, the combination with the frame, of a spring-barrel shaft suitably supported thereon, a spring-barrel journaled on the shaft, having a slotted margin and a scale on its rear face corresponding to the front scale, a pinion also journaled on the shaft and connected to the spring-barrel, a spring to rotate the spring-barrel, column-stops supported on the spring-barrel and adapted to be turned rearwardly to engage with the denomination-stops, a denomination-stop hung on the shaft so as to swing in and out, and formed with cross-slots in its lower end, a short rod and pin fitted to said respective

slots, a vertical lever-arm secured to said rod, a lock-rod secured to the upper end of said lever at its inner end and having a forked piece secured to its outer end, a vertical swivel having a horizontal pin supported in said forked end, a tabulator-lever supported in a journaled swivel-bushing so as to be swung in various directions, and having cross-slots at its rear end engaging respectively with the vertical swivel and the horizontal pin, a slotted piece having several slots arranged at the front of the machine adjacent to the lever end, and a corresponding slotted piece arranged at the rear of the machine adjacent to the denomination-stop.

18. In the tabulating mechanism of a type-writing machine, the combination with the main frame and the carriage, of a rotating support journaled on the main frame, adjustable column-stops arranged on the periphery of said support, a connection between the support and the carriage whereby the support is rotated, an adjustable denomination-stop hung on the main frame and an operating-lever suitably connected to the denomination-stop to adjust said denomination-stop to different denominational points, to cause it to engage with the column-stops to stop the carriage at said points.

19. In the tabulating mechanism of a type-writing machine, the combination with the main frame, the carriage and the carriage-rack, of a spring-barrel suitably journaled on the main frame, a pinion connected to said barrel and engaging with the carriage-rack, column-stops supported on the spring-barrel, means for adjusting said column-stops either in or out of operative position, a denomination-stop hung on the main frame, and adapted to engage with the column-stops to stop the carriage, a single lever extending outwardly to the front of the machine, and connections between said lever and the denomination-stop, whereby the denomination-stop may be adjusted in any one of its operative positions.

20. In the tabulating mechanism of a type-writing machine, the combination of front and rear slotted pieces, a denomination-stop arranged adjacent to the rear slotted piece, means for adjusting said stop in the desired slot of said rear slotted piece, a suitably-journaled spring-barrel having a notched edge, and column-stops supported on the spring-barrel, and adapted to be arranged extending outwardly through one of said notches to engage with the denomination-stop and stop

the carriage at a predetermined point, the slots on said rear slotted piece being inclined to correspond with the notches on the spring-barrel.

21. In the carriage-stop mechanism of a type-writing machine, the combination with the main frame and the carriage, of a rotatable column-stop support on the main frame, column-stops arranged on said support, connections between said support and the carriage whereby the support is rotated by the movement of the carriage, an adjustable denomination-stop arranged on the main frame to engage with the column-stops to stop the carriage, and means to adjust the denomination-stop in various positions.

22. In the tabulating mechanism of a type-writing machine, the combination with the main frame and the carriage, of column-stops supported on the main frame, a spring for moving said stops and carriage, an adjustable denomination-stop also supported on the main frame, and means to adjust said stop to different denominational points, to cause it to engage with the column-stops to stop the carriage.

23. In the tabulating mechanism of a type-writing machine, the combination with the main frame and the carriage, of column-stops rotatably supported on the main frame, a connection between the carriage and said stops, a spring whereby the stops are rotated and the carriage is moved, an adjustable denomination-stop hung on the main frame, and means to adjust said stop to different denominational points, to cause it to engage with the column-stops to stop the carriage.

24. In the tabulating mechanism of a type-writing machine, the combination with the main frame and the carriage, of a rotating support journaled on the main frame, adjustable column-stops arranged on the periphery of said support, a connection between said support and the carriage, a spring whereby the support is rotated and the carriage moved, an adjustable denomination-stop hung on the main frame, and an operating-lever suitably connected to the denomination-stop to adjust said stop to different denominational points, in which it engages with the column-stops to stop the carriage.

In testimony whereof I have hereunto signed my name.

AUGUST SCHNEELOCH. [L. s.]

Witnesses:

M. E. SKINNER,
HENRY W. WELLS.