

H. L. WAGNER.  
TYPE WRITING MACHINE.  
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947,873.

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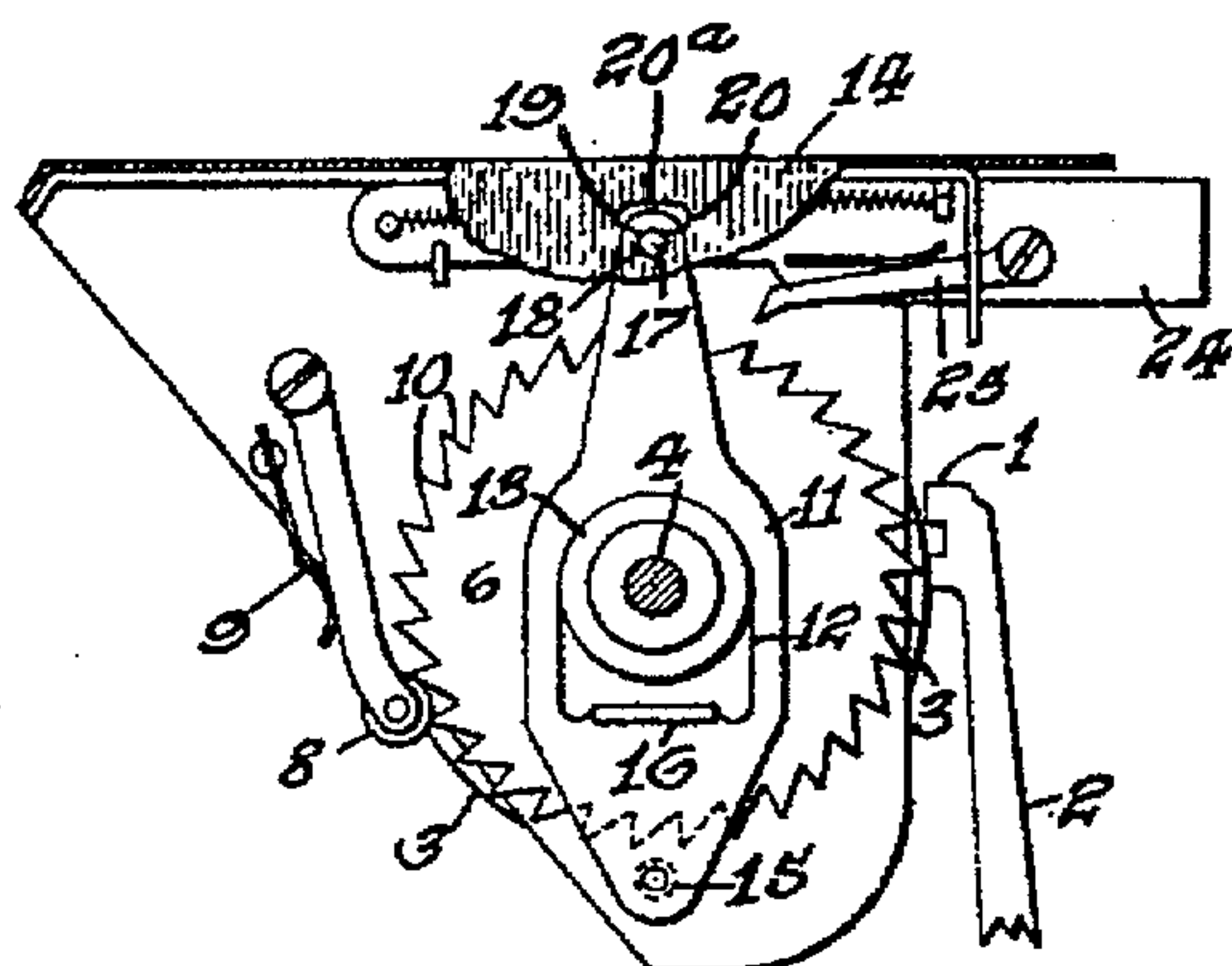


Fig. 1.

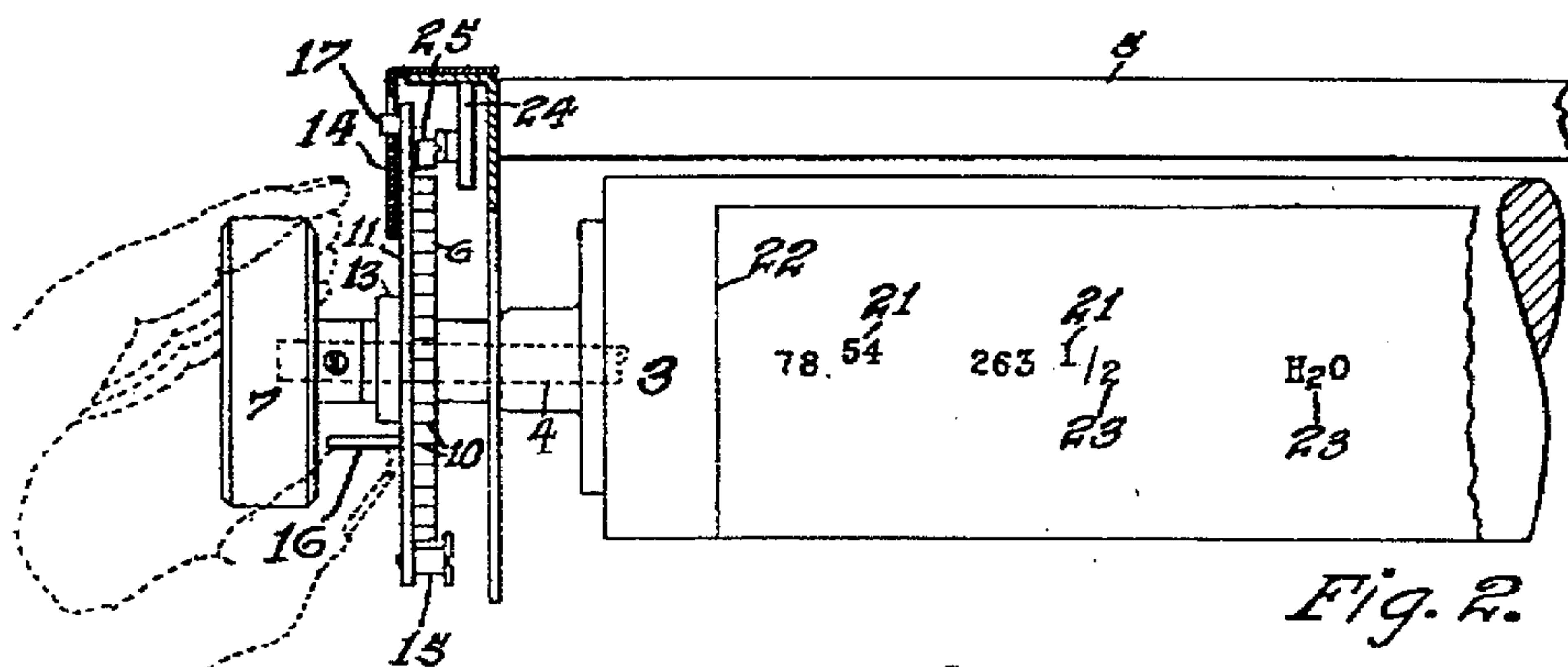


Fig. 2.

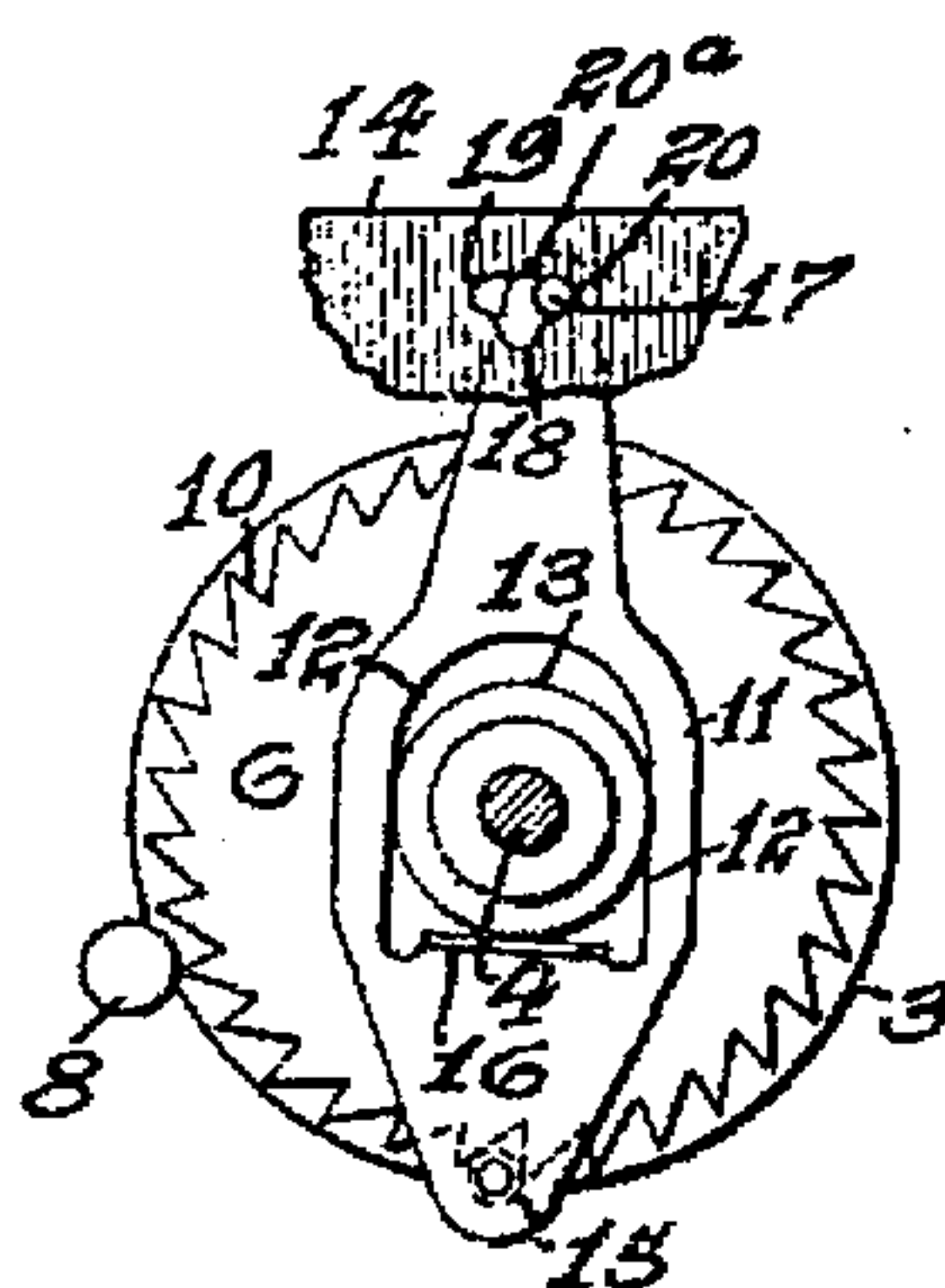


Fig. 3.

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# UNITED STATES PATENT OFFICE.

HERMAN L. WAGNER, OF MOUNT VERNON, NEW YORK, ASSIGNOR TO UNDERWOOD TYPEWRITER COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW JERSEY.

## TYPE-WRITING MACHINE.

947,873.

Specification of Letters Patent.

Patented Feb. 1, 1910.

Application filed May 28, 1906. Serial No. 319,089.

*To all whom it may concern:*

Be it known that I, HERMAN L. WAGNER, a citizen of the United States, residing in Mount Vernon, in the county of Westchester and State of New York, have invented certain new and useful Improvements in Type-Writing Machines, of which the following is a specification.

This invention relates to the line spacing mechanism of typewriting machines, and its object is to make it convenient to place letters or figures a trifle above or below the line of writing as when writing accents, fractions, symbols, etc.

My improvements relate to means for effecting rotation of the platen either forwardly or backwardly to a predetermined distance less than a line space, so that the device may print below or above the line. The rotation of the platen I effect by means of the usual hand wheel, and the distance to which the platen is rotated either forwardly or backwardly for the purposes of the present invention, is mechanically determined by means of a stop device, which is conveniently brought into action by the same hand that turns the hand wheel, but it is normally out of use during the rotation of the platen. After the figures or symbols are written above or below the line, the platen and line space wheel are returned to initial position by means of the usual spring detent that engages the line space wheel.

In the accompanying drawings, Figure 1 is a side elevation partly in section of the left hand end of the platen frame etc., of the well known "Underwood" front strike typewriting machine, showing my improvements applied thereto. Fig. 2 is a front elevation illustrating the manner of using the improvement. Fig. 3 shows the platen and line space wheel as rotated backwardly by means of my improvements for a mechanically determined distance less than a line space.

In said machine, types 1 mounted on type bars 2 strike against the front side of a platen 3, which by means of an axle 4 is journaled in a platen frame 5. Upon the axle are fixed a notched line space wheel 6 and a hand wheel 7, the latter at the extreme end of the axle. A detent 8 is pressed by a spring 9 into the notches or teeth 10 of the

line space wheel which are formed at line space intervals.

A stop lever 11 is mounted loosely upon the platen axle by means of a vertical slot 12 formed in the lever and fitting over a collar 13 provided upon the axle; the lever lying facewise or flat against the outer face of the line space wheel and confined at its upper end by means of a vertical flange 14 usually formed upon the end of the platen frame 5. At its lower end the lever is provided with a tooth 15 which normally clears the line space wheel, so as not to obstruct the movement thereof. Projecting from the lever toward the hand wheel 7 is a finger piece 16 in position to be conveniently pressed up by the thumb of the operator and there held during the turning of the line space wheel 7. By means of said finger piece, the tooth 15 is lifted into the immediately overlying notch of the line space wheel, Fig. 3, thereby locking the lever to the line space wheel, so that both may rock together about the platen axis; the sides of the slots 12 fitting closely to the collar 13.

Upon the upper end of the lever is provided a pin 17 which normally rests in a notch 18 formed in said flange 14, but which is lifted out of said notch when the lever rises, Fig. 3. After lifting the stop lever, the operator turns the hand wheel 7 together with the line space wheel and platen as far as permitted by the pin 17, which engages with either a forward stop 19 or a backward stop 20 formed in said flange adjacent to said notch 18; said stops 19 and 20 preferably forming the ends of a slot 20\* formed in said flange. These stops 19 and 20 are so placed as to limit the stroke of the platen in either direction to less than a line space.

When it is desired to write a trifle above the line of writing, the finger piece 16 is pressed up and the hand wheel 7 turned backwardly until the pin 17 contacts with the stop 20, Fig. 3, and while the parts are held in this position the type bars 2 are operated to effect the printing, as seen at 21 on the Sheet 22, Fig. 2. Upon relieving the parts 7 and 16 from pressure the spring detent 8 restores the line space wheel and platen to initial position. If the operator



desires to write below the line, he rotates the platen in the opposite direction, and operates a type bar to print as at 23, Fig. 2. The usual line space movements of the platen are effected by means of the usual slide 24 and pawl 25.

Variations may be resorted to within the scope of the invention.

Having thus described my invention, I claim:

1. In a typewriting machine, the combination with a platen and a line space rack therefor, of a stop device normally idle during the rotation of the platen but connectible to said line space rack at will to move forwardly and backwardly therewith, and means for limiting to less than a single line space the forward and backward movements of said stop device and rack when so connected.

2. In a typewriting machine, the combination with a revoluble platen and a line space wheel therefor, of a stop lever normally idle during the revolution of the platen, and having a tooth to engage any of the teeth of said line space wheel, and means effective when the lever is engaged to the line space wheel for limiting the stroke of the lever to less than a line space.

3. In a typewriting machine, the combination with a revoluble platen and a line space wheel therefor, of a stop lever normally idle during the revolution of the platen, and having a tooth to engage any of the teeth of said line space wheel, and means effective when the lever is engaged to the line space wheel for limiting the stroke of the lever to less than a line space either forwardly or backwardly.

4. In a typewriting machine, the combination with a revoluble platen and a line space wheel therefor, of a lever having a loose engagement with an axle or collar of the platen and also having a tooth normally disengaged from the line space wheel, said lever movable upon said collar or axle, so as to bring its tooth into engagement with the line space wheel, and means for limiting the forward and backward stroke of the lever when so engaged, to less than a line space in each direction.

5. In a typewriting machine, the combination with a revoluble platen and a line space wheel, of a stop device normally idle during the revolution of the platen and having a tooth, a finger piece moving said stop device, so that its tooth will engage the line space wheel to cause the wheel and stop device to move together, and means for limiting the throw of the wheel and stop device to less than a line space.

6. In a typewriting machine, the combination with a platen and platen frame, of an axle supporting the platen in said frame,

a lever having a slot connection with said axle and provided with a finger piece, a tooth upon said lever, the latter movable by said finger piece, so that the tooth engages said line space wheel to lock the latter to the lever, and stops upon the platen frame to limit the rotation of the lever to less than a line space in each direction.

7. In a typewriting machine, the combination with a revoluble platen and a line space wheel, of a frame, an axle whereby said platen is mounted upon said frame, a hand wheel upon said axle, a loosely mounted stop lever having a finger piece which is arranged between said hand wheel and said line space wheel, a tooth upon said lever liftable by said finger piece into engagement with a bottom notch on the line space wheel, and stops upon the platen frame for limiting the stroke of said lever to less than a line space when so engaged to the line space wheel.

8. In a typewriting machine, the combination with a revoluble platen and a hand wheel therefor, of a stop device having a finger piece convenient to said hand wheel, so that the stop device may conveniently be moved from normal to effective position, and held there conveniently by the same hand that manipulates said hand wheel, a tooth upon said stop device movable by said finger piece into engagement with the line space wheel of the platen, and a stop for limiting the stroke of the platen and said stop device to less than a line space.

9. In a typewriting machine, the combination with a platen having an axle, of a frame in which said axle is journaled, said frame comprising a vertical flange, a line space wheel secured upon said axle, a hand wheel also secured upon said axle, a lever mounted loosely upon said axle and having at its upper end a pin which fits in a notch in said flange to prevent vibration of the lever, a finger piece upon said lever beneath said axle and between the line space wheel and the hand wheel, a tooth upon the lower end of said lever, the latter movable by said finger piece, so that said tooth engages the line space wheel and locks the lever thereto, said pin being moved out of the notch by the tooth engaging movement of said lever, and said flange being provided with stops to limit the movement of said pin either forwardly or backwardly to less than a line space.

10. In a typewriting machine, the combination of a platen, line spacing mechanism, and means for writing above or below a line determined by said line spacing mechanism, said means comprising a fixed guide with slots therein at right angles to each other, and a hand actuated engaging device working in said slots, the movement of the en-

gaging device in one slot carrying the device into and out of operative engagement with the platen and out of and into said last mentioned slot and the movement of the  
5 engaging device in the other slot determining the extent of rotation which may be given the platen by said device.

11. In a typewriting machine, the combination of a platen, a toothed wheel connected with the platen, an engaging device  
10 coöperative with said toothed wheel, and a

fixed guide with slots therein at right angles to each other and in which said engaging device is adapted to move, the engaging device being in engagement with said toothed  
15 wheel when said device is in one slot and out of engagement with the wheel when said device is in the other slot.

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