

No. 780,273.

PATENTED JAN. 17, 1905.

D. E. FELT.
TABULATING MACHINE.
APPLICATION FILED SEPT. 17, 1903.

3 SHEETS—SHEET 1.

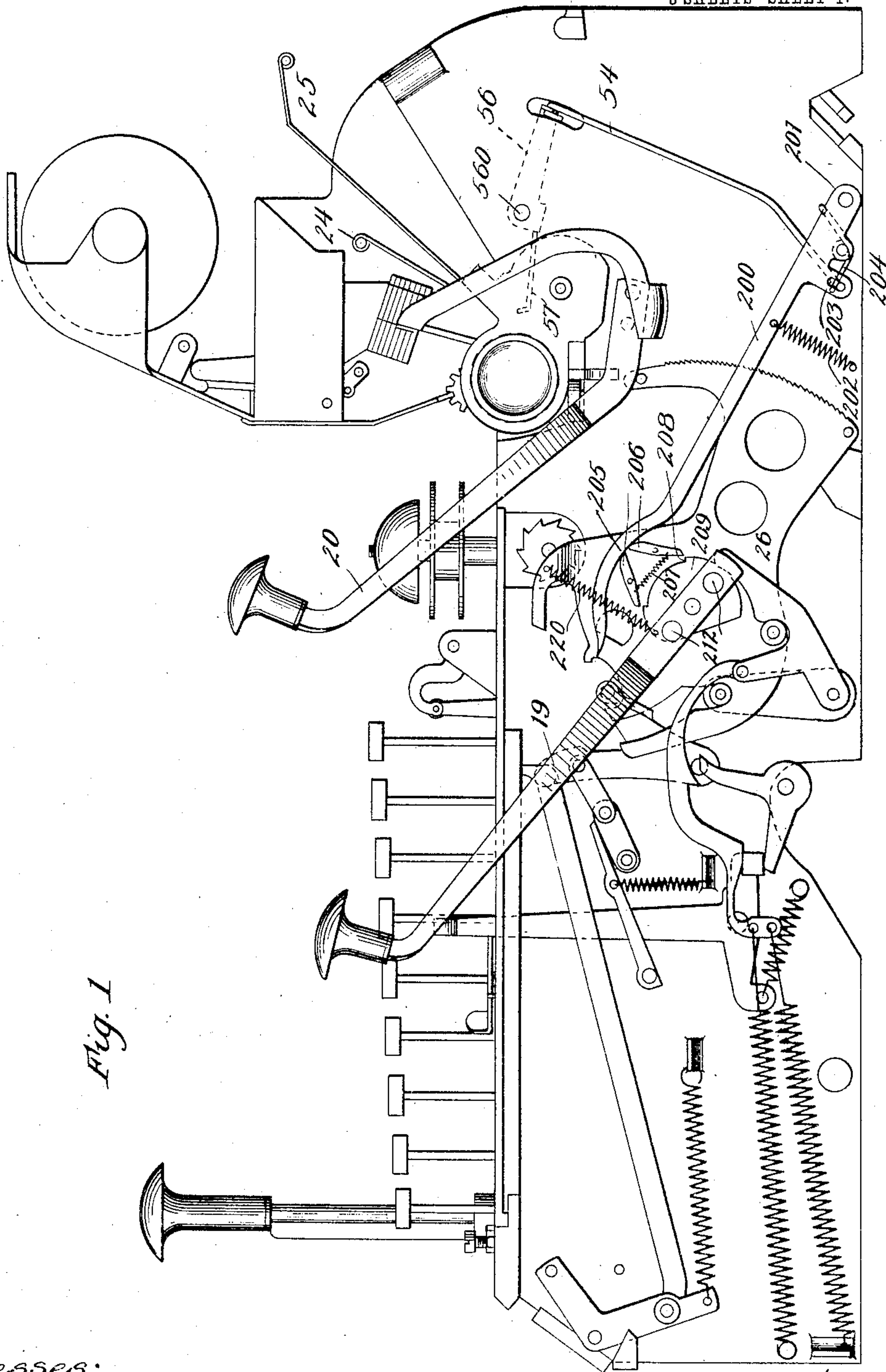


Fig. 1

Witnesses:

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Inventor:
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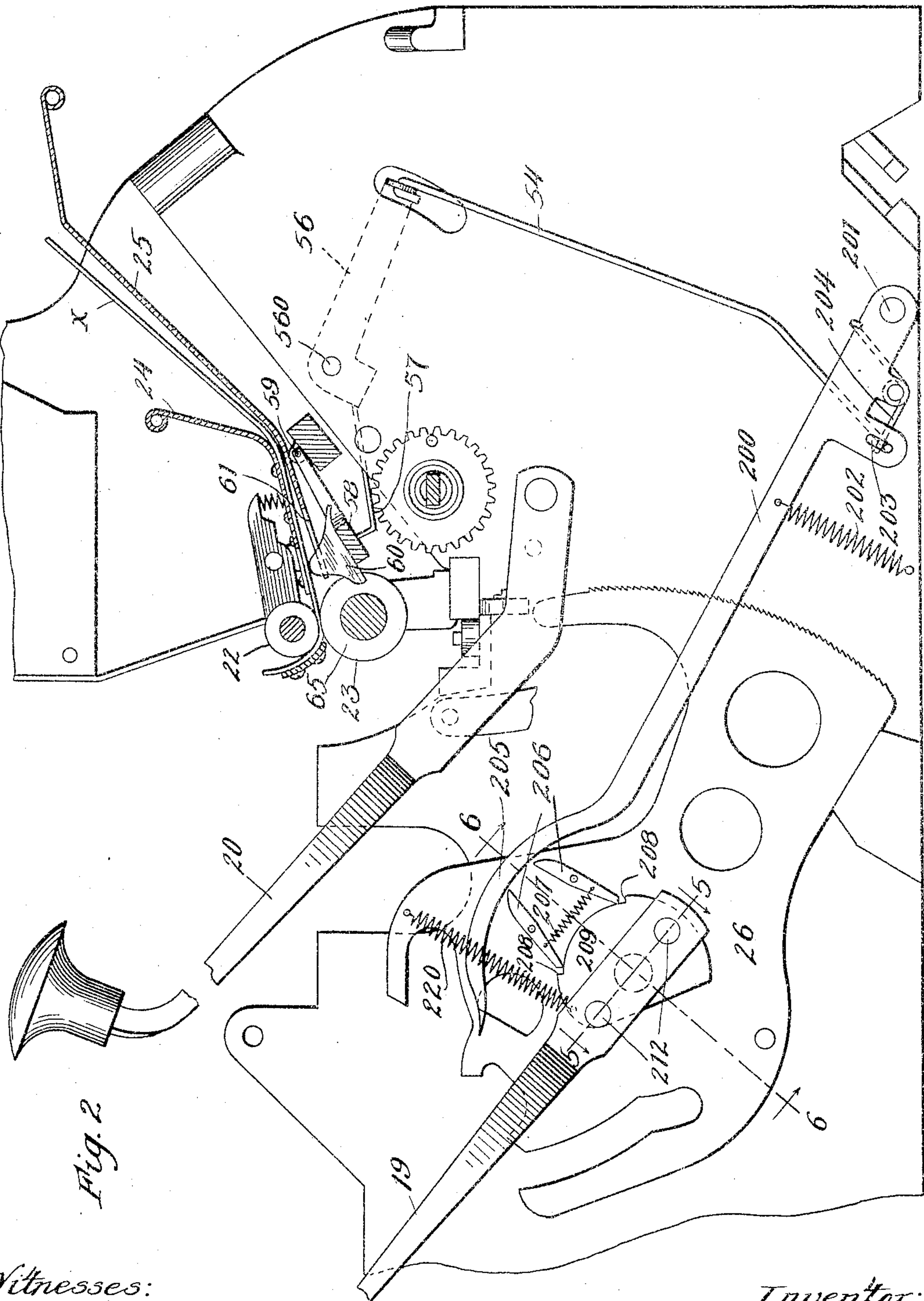


Fig. 2

Witnesses:

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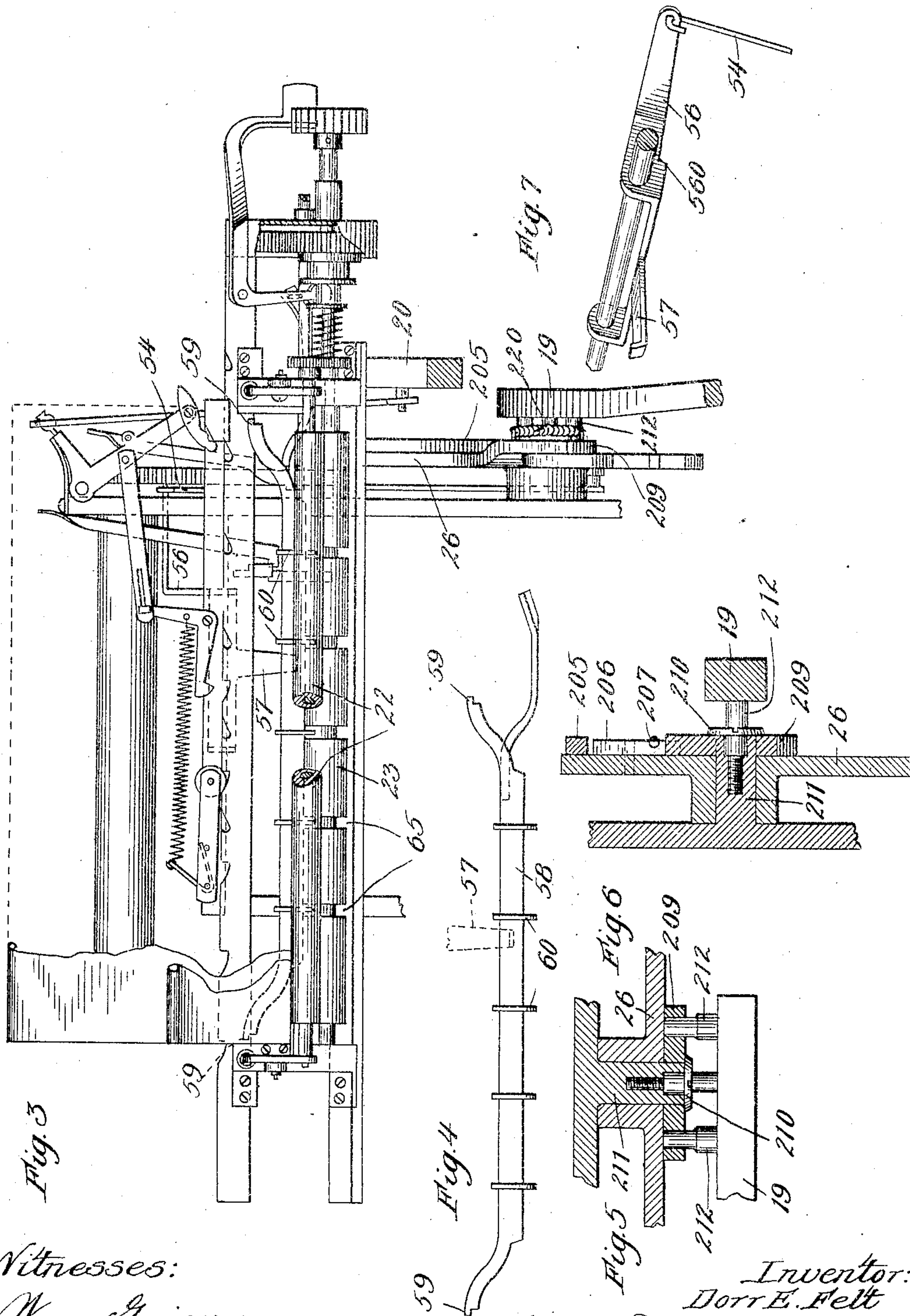
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3 SHEETS—SHEET 3.



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UNITED STATES PATENT OFFICE.

DORR E. FELT, OF CHICAGO, ILLINOIS, ASSIGNOR TO COMPTOGRAPH COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

TABULATING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 780,273, dated January 17, 1905.

Application filed September 17, 1903. Serial No. 173,553.

To all whom it may concern:

Be it known that I, DORR E. FELT, a citizen of the United States, residing in Chicago, in the county of Cook and State of Illinois, have
5 invented a new and useful Improvement in Tabulating-Machines, of which the following is a specification.

In Patent No. 694,955, granted to me on March 11, 1902, there is shown means whereby
10 both the printing mechanism and the adding mechanism of a tabulating-machine may be absolutely locked as soon as the last line of any column has been printed, so that all further printing except of totals and all further
15 adding may be prevented prior to the shifting of the sheet for the next column. My present invention is intended to accomplish this same result of preventing further printing and adding in a different way from that
20 shown in the patent; and it consists in connecting the main operating-levers, by which the printing and adding mechanism are actuated, to the device, whereby the lever causes the operation of those mechanisms by means
25 which are automatically released or disconnected whenever a column is completed.

The nature of my improvement will be fully understood from the accompanying drawings when considered in connection with the description given below.
30

In said drawings, Figure 1 is a side elevation of a tabulating-machine embodying my present invention. Fig. 2 is a partial longitudinal vertical section. Fig. 3 is a partial
35 plan. Fig. 4 shows the rocking bar carrying the fingers which press upon the paper and control the mechanism for releasing the operating-lever. Figs. 5 and 6 are sections on the lines 5 5 and 6 6, respectively, of Fig. 2. Fig.
40 7 is a perspective of the device for transmitting motion from the rocking bar to the releasing mechanism.

In said drawings, 19 represents the main operating-lever, and 20 the paper reversing and shifting lever. The main lever actuates
45 a cam 26 and through said cam gives movement to the printing and adding mechanisms and also to the devices for feeding the paper vertically in line-spacing.

22 and 23 are the paper-feed rolls, and 24 50 and 25 are the paper-guides. A sheet of paper X is shown as having been entered between the guides and feed-rolls.

60 represents the fingers mounted upon a bar 58, which I call the "finger" or "rocking" bar 55 and which has a limited up-and-down swinging movement, being pivoted at its ends 59 in the paper carriage and the ends being bent away from the plane of the bar, as seen at Fig. 4. The fingers press upward against 60 the paper and register with slots 61 in the paper-guides and are located close under guide 25, with their points extending through it. Lever 56, pivoted at 560, is connected to the bar 58 by an arm 57 and through such con- 65 nection supports the bar. Lever 56 is also connected by a wire 54 to a lever 200, pivoted at 201 and drawn downward constantly by a spring 202. The end of the wire 54 is bent at right angles and entered in a slot 203 in 70 the lever 200, and a spring 204 upon the lever bears upon such bent end and may yield to the slight extent permitted by the slot, so as to prevent the connection from being too rigid. The lever 200 extends upward in an 75 inclined direction, and its further end is curved, as shown at 205. Below this curved portion of the lever are located two swinging catches 206, normally inclined toward each other, as shown at Fig. 2, and provided with 80 a spring 207, drawing their lower ends together. These catches engage shoulders 208 on a plate 209, pivotally secured to the cam 26 by a broad-headed screw 210, entering the stud 211, upon which the cam turns. The catches 85 206 are pivoted to the cam, and in their normal positions they engage the shoulders 208, as seen at Fig. 2. The lever 19 is rigid with the plate 209, being secured to it by the studs 212—one at each side of the axis upon which 90 the lever swings. In consequence of these features the lever 19 whenever it is actuated in the normal operation of the machine operates the cam 26; but when the bottom of the paper being printed upon passes the fingers 95 60 the fingers are permitted to rise under the power of spring 202, communicated to the fingers through the lever 200, the wire 54,

the lever 56, and the arm 57, and the movement of the lever 200 thus taking place acts upon the catches 206 and forces their upper ends together to the position illustrated at 5 Fig. 1, thereby releasing the plate 209 from the catches and enabling said plate to move with the lever 19 without communicating any motion to the cam 26. While the catches are 10 held in the position of Fig. 1 it will be seen that any movements imparted to the lever 19 will be idle. The catches will return to their normal positions, as in Fig. 2, under the power of spring 207 whenever paper is inserted between the guides, so as to depress the 15 fingers 60.

The mechanism described, it will be thus seen, effects a break between the operating-lever 19 and the device by which the various mechanisms of the machine are operated, so 20 that when the paper has passed the fingers 60 no further operation of the machine can take place, and I thereby prevent the evils sought to be remedied by my said patent. The fingers 60 are extended into grooves 65, formed 25 in the feed-roll 23, so that they are enabled to be brought into close proximity to the roll.

The machine of the application is adapted, like that of the patent, to shift the paper laterally in column-spacing and at the same 30 time to return the top of the paper to the printing-line in the manner set forth in the patent, this operation being caused by the lever 20. I have shown in addition to the mechanism described the column-spacing

mechanism and other devices for controlling 35 the paper, also the total-printing lever and some other parts of the machine which have no bearing on the present invention and which I do not, therefore, describe.

So far as the letters of reference herein 40 employed correspond with those of my said patent they indicate the same parts, and if the description given is not understood a more full explanation and description will be found in the patent. 45

In order that the main operating-lever may be returned to its normal position when operated idly after it has been released from the cam, I employ a spring 220, one end of which is joined to the lever and the other end to the 50 cam, as plainly illustrated.

I claim—

1. In a tabulating-machine adapted to write numbers in columns, an operating-lever, the operative connection between which and the 55 mechanism of the machine is broken automatically on the completion of a column.

2. The combination in a tabulating-machine, with a main operating-lever and the device by which the lever gives motion to the mechan- 60 ism of the machine, of catches carrying power from the lever to said device, and means controlled by the paper for throwing such catches out of action and rendering the lever idle.

DORR E. FELT.

Witnesses:

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