

2 Sheets—Sheet 1.

No. 545,530.

Patented Sept. 3, 1895.

Fig. 1.

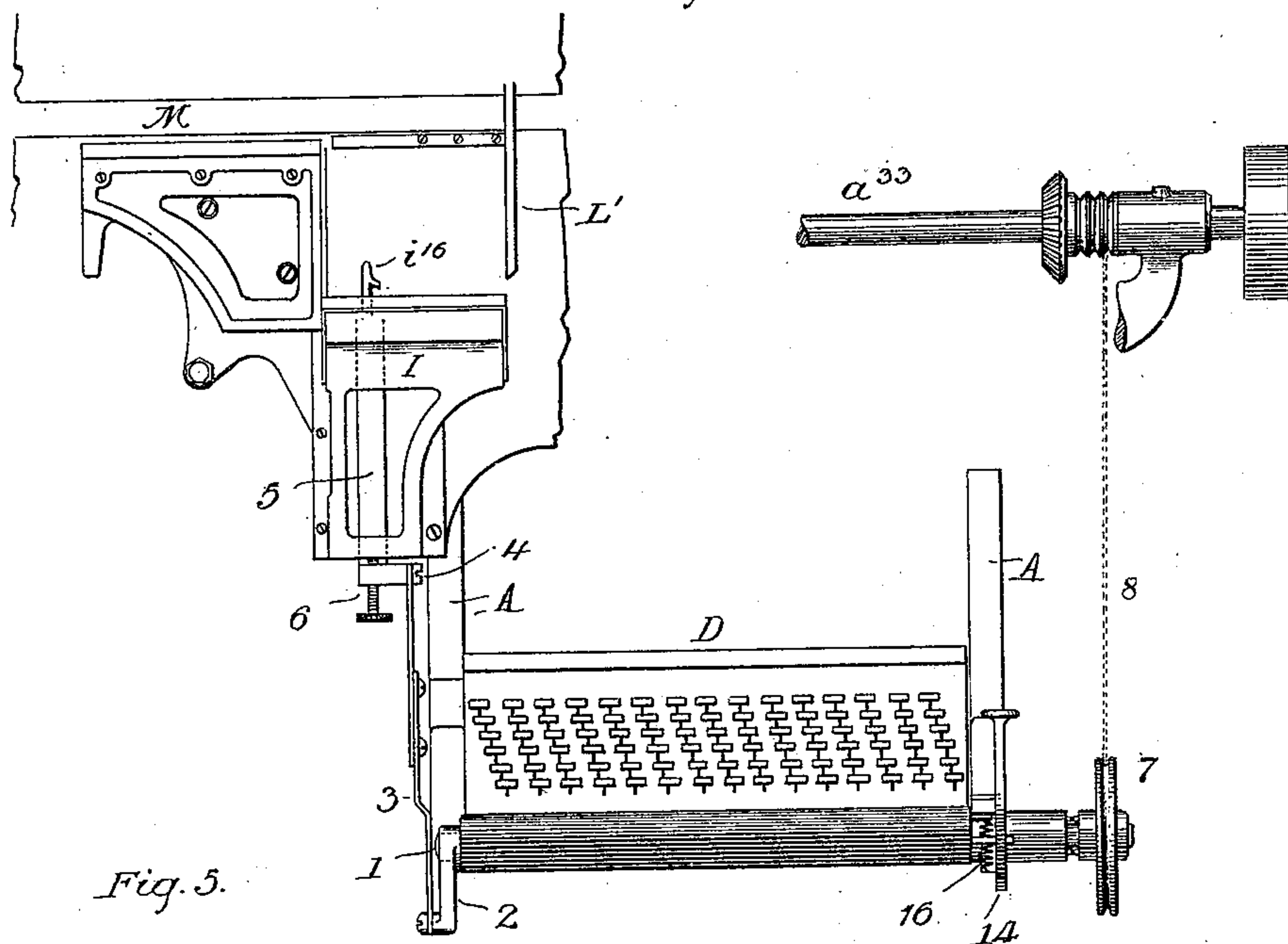


Fig. 5.

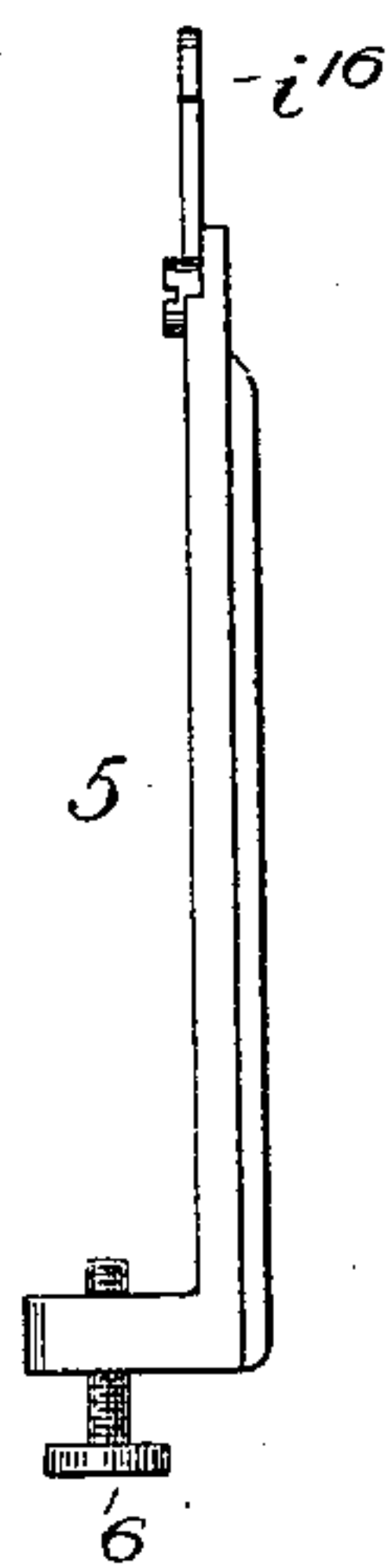
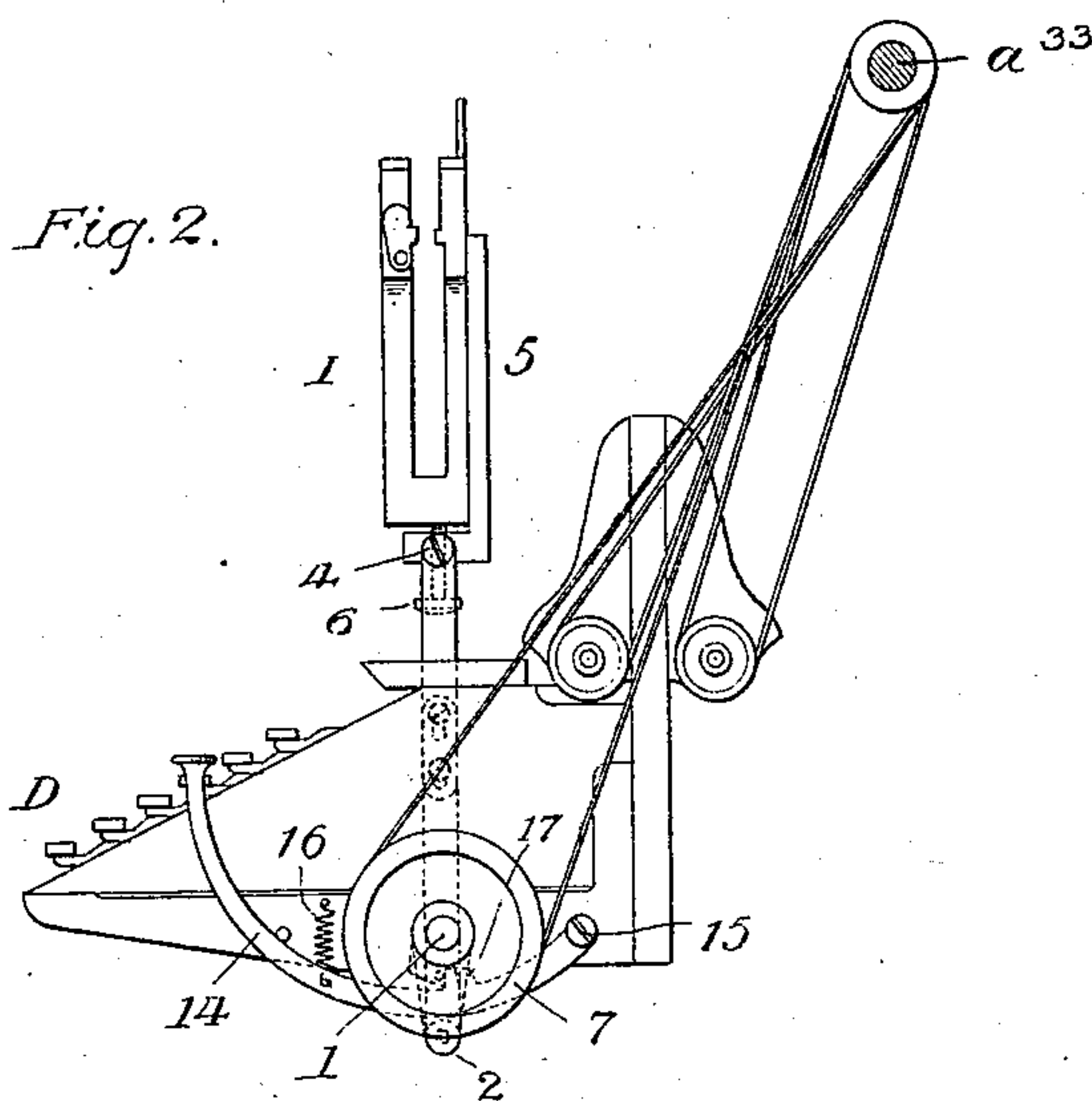


Fig. 2.



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(No Model.)

2 Sheets—Sheet 2.

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LINOTYPE MACHINE.

No. 545,530.

Patented Sept. 3, 1895.

Fig. 3.

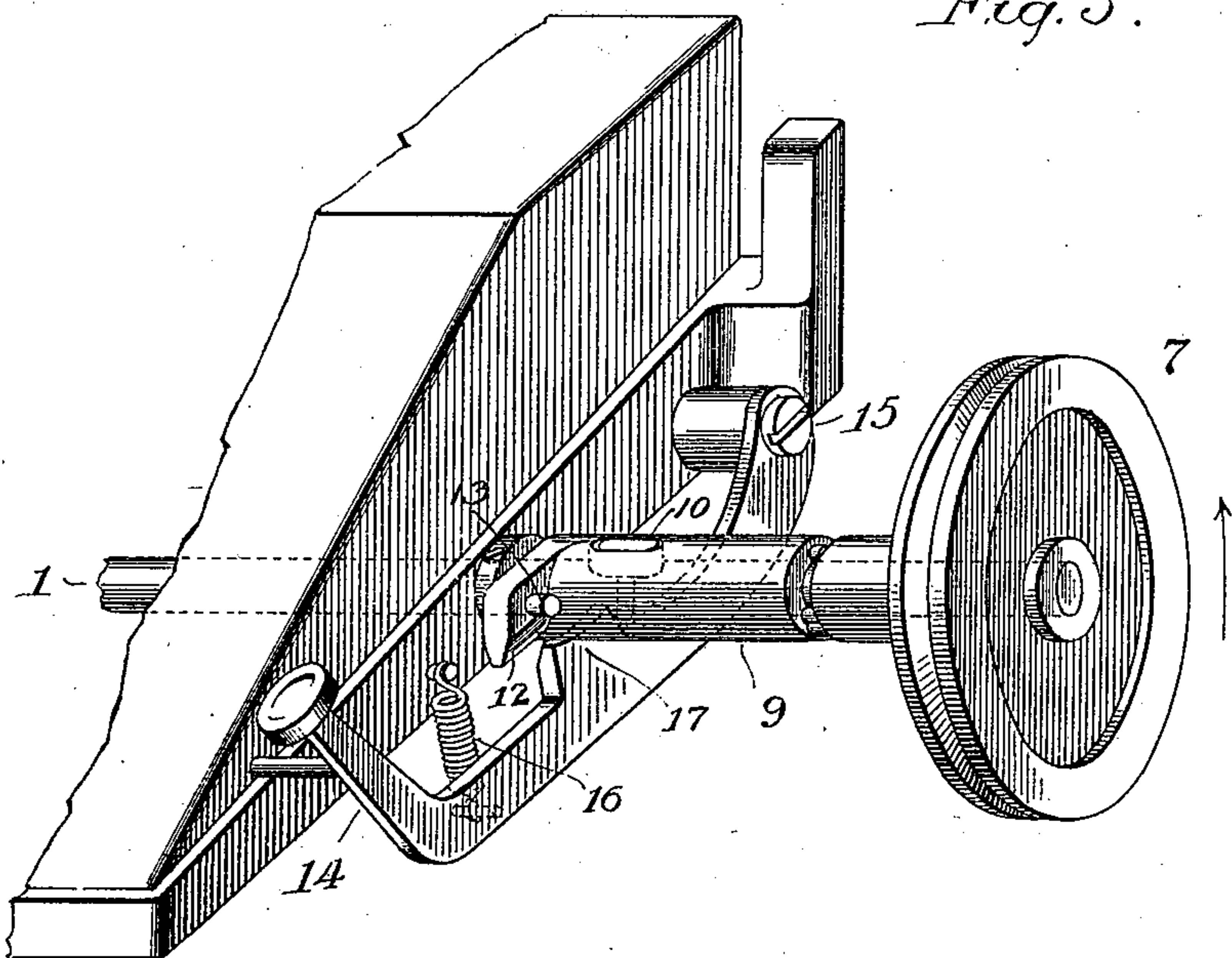
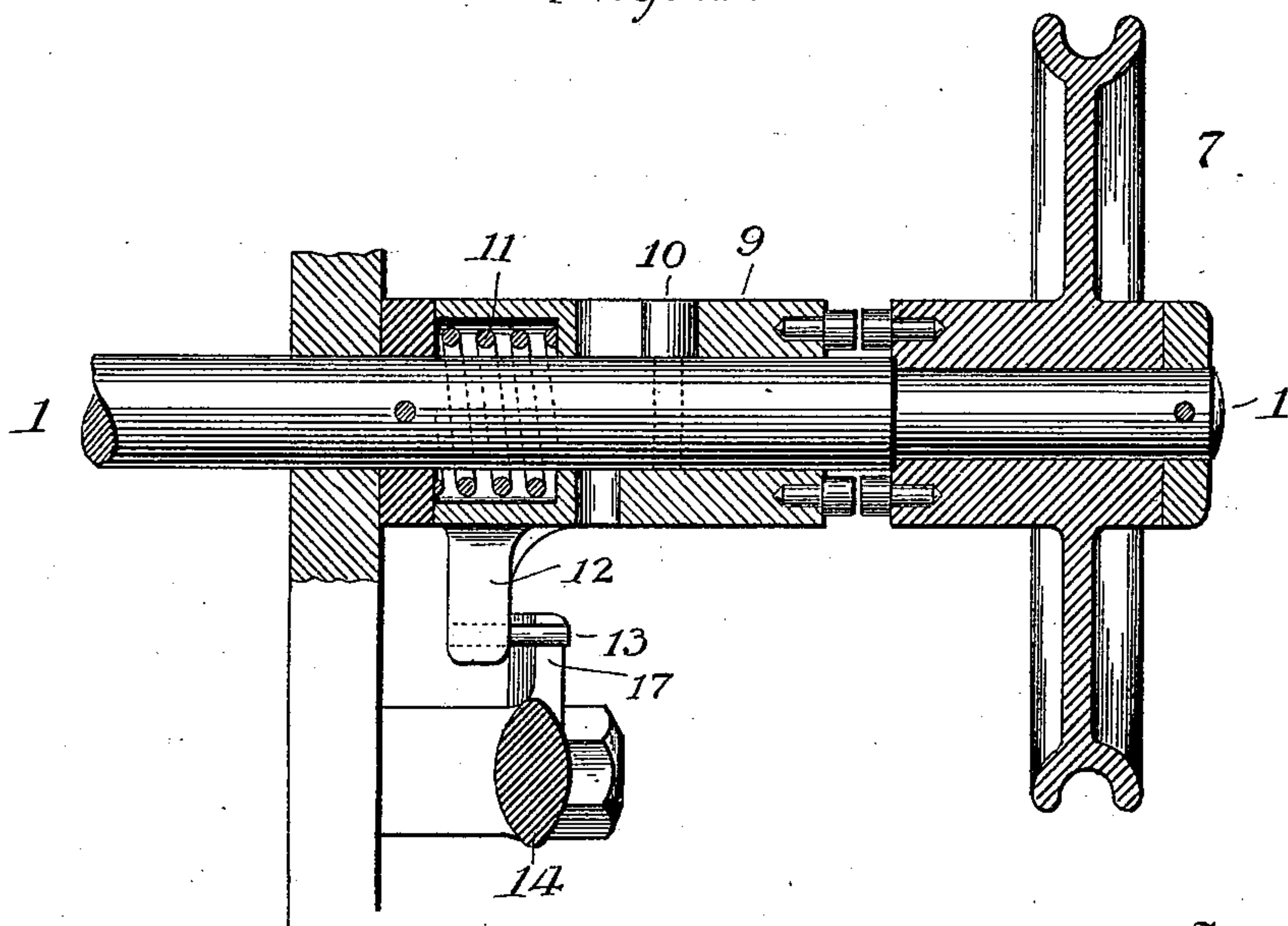


Fig. 4.



Witnesses

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UNITED STATES PATENT OFFICE.

ALBERT D. PENTZ, OF BROOKLYN, ASSIGNOR TO THE MERGENTHALER
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LINOTYPE-MACHINE.

SPECIFICATION forming part of Letters Patent No. 545,532, dated September 3, 1895.

Application filed April 8, 1895. Serial No. 544,905. (No model.)

To all whom it may concern:

Be it known that I, ALBERT D. PENTZ, of Brooklyn, county of Kings, and State of New York, have invented a new and useful Improvement in Linotype-Machines, of which the following is a specification.

My invention relates to an improvement in the Mergenthaler linotype-machine of the character represented in Letters Patent of the United States No. 436,532, dated September 16, 1890. In the machine named the selected matrices are delivered one after another from the magazine and assembled or composed in line in a vertically-movable assembling-block, designated by I in the original patent. In the machine of the patent and those of later construction this assembling-block was connected with a hand-lever, by which it was elevated at the completion of each line of composition preparatory to the transfer of the line to the casting mechanism.

It is the aim of the present invention to relieve the operator of the labor of lifting the elevator; and to this end it consists in combining with the elevator power-driven devices under the control of the operator for effecting its vertical motion.

The operating devices may be widely varied in construction and arrangement in the ways which will suggest themselves to the skilled mechanic without departing from the scope of my invention.

In the accompanying drawings I have represented the improvement in a form found satisfactory in practice, the drawings being limited to such parts of the machine as are necessary to the understanding of the present invention.

In the drawings the old parts of the machine are represented by the same letters and numerals as those of the original patent.

Figure 1 represents a front elevation of the assembling-elevator, keyboard, and adjacent parts with my improvement applied thereto. Fig. 2 is an end elevation of the same. Fig. 3 is a perspective view showing the driving-clutch and connections through which the assembling-elevator is actuated. Fig. 4 is a longitudinal section through the same parts. Fig. 5 is a view of a detail.

Referring to the drawings, A represents

the frame of the machine; D, the keyboard through which the matrices are designated and caused to pass to the assembler. 55

I represents the assembling-elevator, slotted at the top to receive the matrices as they are delivered thereto, one after another, and mounted in guides in the frame, so that it may rise from the position shown in Fig. 1 to a position in which its matrices may be transferred horizontally to the stationary guide or channel M. 60

L' represents one of the horizontally-moving carriage-fingers, by which the line of matrices is carried out of the elevated assembler through the passage M in the course to the casting devices. 65

The foregoing parts are all constructed and arranged to operate in the ordinary manner, except as to the means for raising and lowering the assembler I. 70

In applying my improvement I extend through the base of the keyboard, from right to left, a rotary shaft 1, provided on one end with a crank 2, which is connected by a pitman 3 to the lower end of the assembler I, so that the half-revolution of the shaft and crank from the position shown in Fig. 1 will elevate the assembler and the next half-revolution lower the assembler to its first position. 75

The pitman may be connected directly to the assembler; but to facilitate the accurate vertical adjustment of the latter I prefer to connect the upper end of the pitman by a pivot 4 to the lower end of a slide 5, such as shown in Fig. 5, seated in a vertical dovetailed groove in the assembler and provided with a vertical set-screw 6, by which a slight vertical adjustment may be effected. In relation 80

to the pitman the upper end of the slide 5 is provided with a hook 7¹⁶, corresponding to that of the original patent, No. 436,532, which automatically engages with the frame when the assembler is elevated to maintain it in the elevated position. This hook is automatically disengaged, as usual, by the carriage, which shifts the line to the left, and its function is to prevent the assembler from descending until the line has been transferred therefrom. At its right-hand end the shaft 1 is provided with a loosely-turning pulley 7, driven by a belt 8 from a grooved hub on the shaft a³³, used to drive the keyboard connec- 85

90
95
100

tions, as in the original machine. The pulley 7 is driven constantly, but motion is transmitted thence to the shaft and crank intermittingly through the clutch devices now about to be described.

The clutch proper consists of a hub or collar 9, provided at its outer end with pins or teeth to engage corresponding pins on the hub and slotted longitudinally to receive a pin 10, affixed to the shaft, this arrangement permitting the hub to slide endwise into and out of engagement with the driving-pulley while it is prevented from turning on the shaft. A spiral spring 11, seated within the hub, acts to throw it into engagement with the driving-pulley whenever it is released.

In order to disconnect the parts and hold the shaft at rest under normal conditions, the hub of the clutch is provided with a rigid arm 12 having a lateral stud or projection 13. A finger-lever 14, pivoted to the arm 15 and lifted by spring 16, is provided, near its middle, with an uprising shoulder 17, inclined or beveled on the left-hand side. The parts stand normally in the position shown in Figs. 3 and 4, the clutch being held to the left out of engagement by the contact of its arms with the side of the finger-lever and being prevented from rotating by the contact of the stud 13 with the projection on the lever. If, now, the lever is depressed so as to throw this projection out of engagement with the clutch, the latter will be thrown to the left by the spring into engagement with the driving-pulley. The clutch will now turn the shaft and crank, and the pitman will elevate the assembler to the required point. The hook 1¹⁶ will engage and prevent the assembler from descending, and, as the parts can turn no farther, the driving-belt will slip. When the hook 1¹⁶ is disengaged and the assembler released, the parts will continue their rotation and the assembler will descend. The finger-key having been relieved from pressure and lifted to its former position by the spring will present its projection 17 in the path of the projection on the revolving clutch. As the clutch-arm rides

against the inclined side of the projection it will be forced to the left until it disengages from the pulley, and its motion will be thereafter arrested by the contact of the pin 13 with the lever. Thus it will be seen that the momentary depression of the finger-key is followed by the immediate elevation of the assembler without further effort on the part of the operator, and that the assembler is in due time returned automatically to its first position.

It is manifest that the clutch devices herein shown may be replaced by any other form of automatic stop-clutch known to those skilled in the art and that the other details may be varied at will, provided only that the automatic elevation and depression of the assembler is effected.

Having thus described my invention, what I claim is—

1. In a linotype machine the movable assembler in combination with mechanism power driven for moving the same and means for controlling the movement.

2. In a linotype machine the movable assembler in combination with a crank shaft and pitman, a driving clutch and finger lever connections for controlling the clutch.

3. In a linotype machine, the assembling elevator, the crank shaft and pitman, the constantly driven pulley, the clutch for connecting the shaft and pulley, the pulley actuating spring and the finger key lever arranged to disengage and hold the clutch.

4. In a linotype machine, the combination of the movable assembler the crank and pitman, the bar connected to the pitman and carrying the hook and an adjustable connection between said bar and the assembler.

In testimony whereof I hereunto set my hand, this 19th day of March, 1895, in the presence of two attesting witnesses.

ALBERT D. PENTZ.

Witnesses:

BENJAMIN G. BLOOM,
JOHN C. MCCAUSLAN.