

(No Model.)

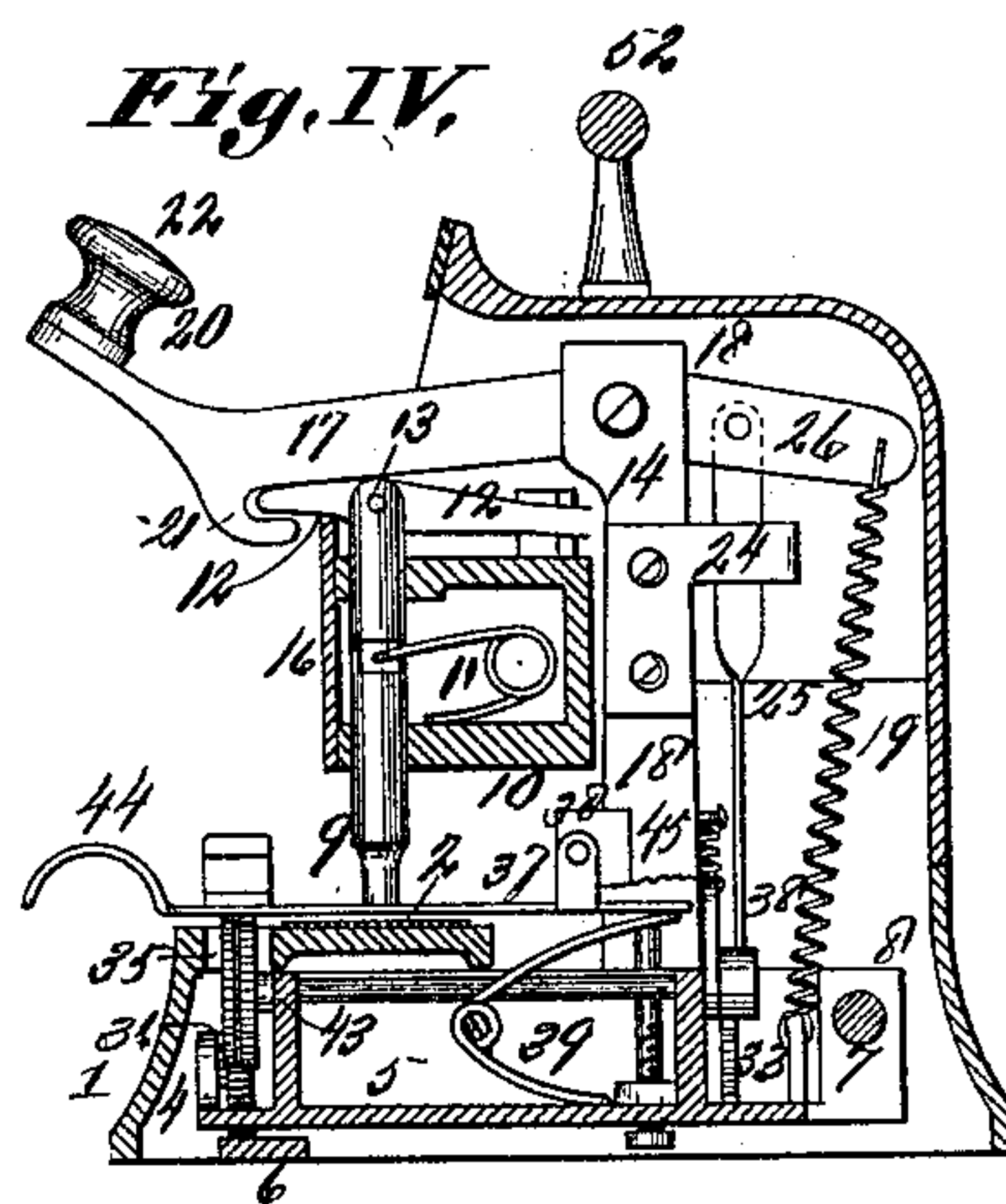
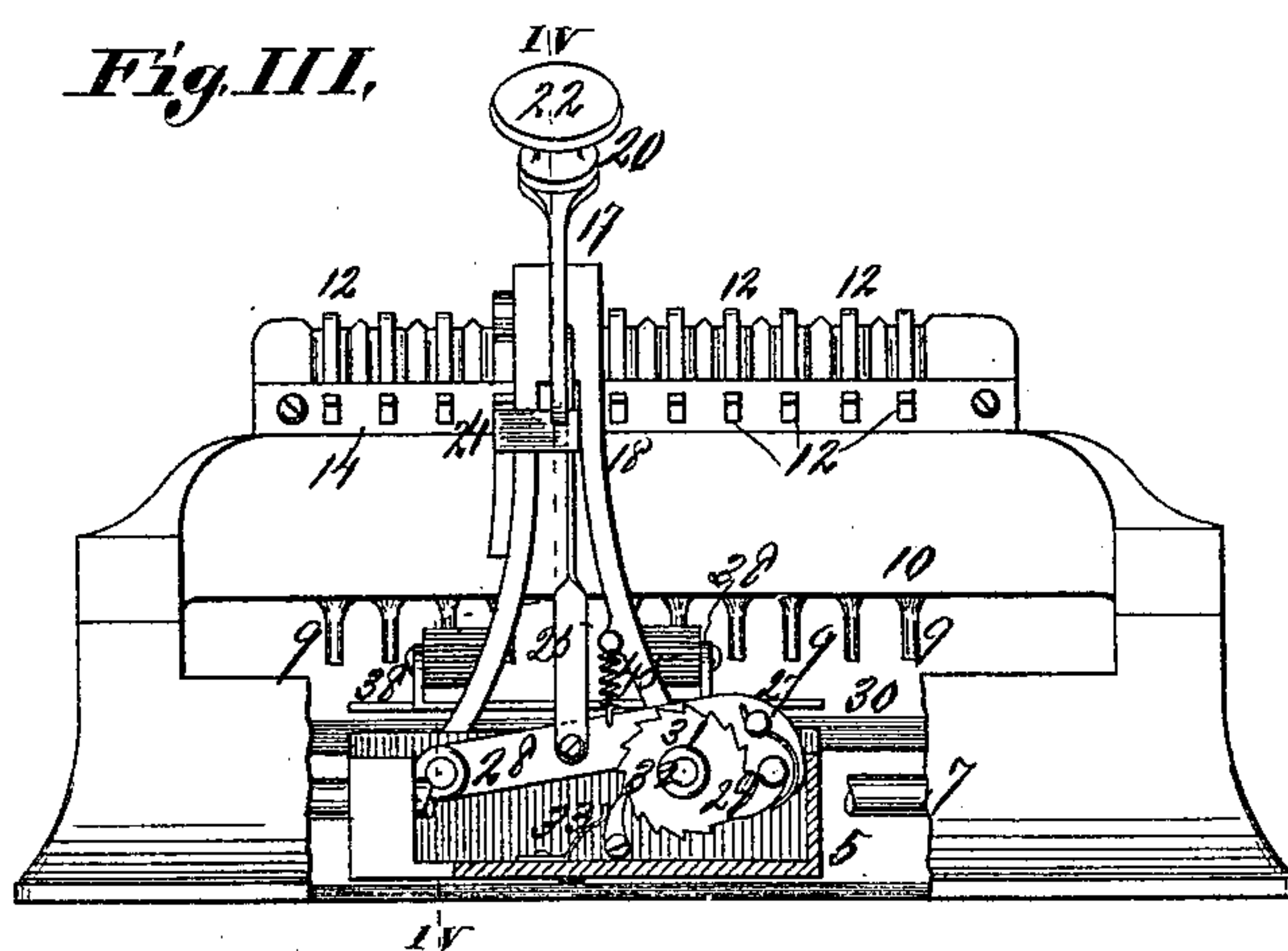
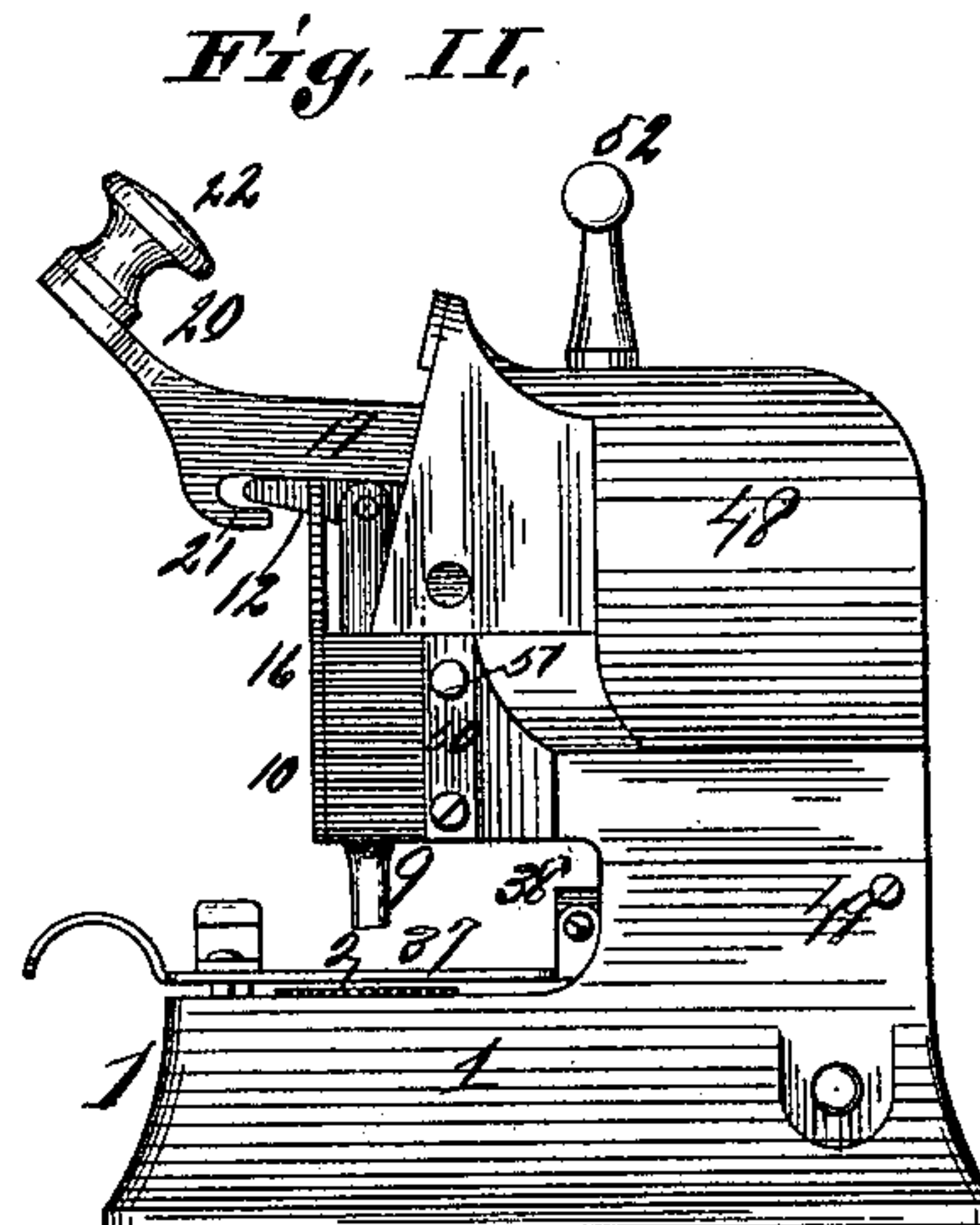
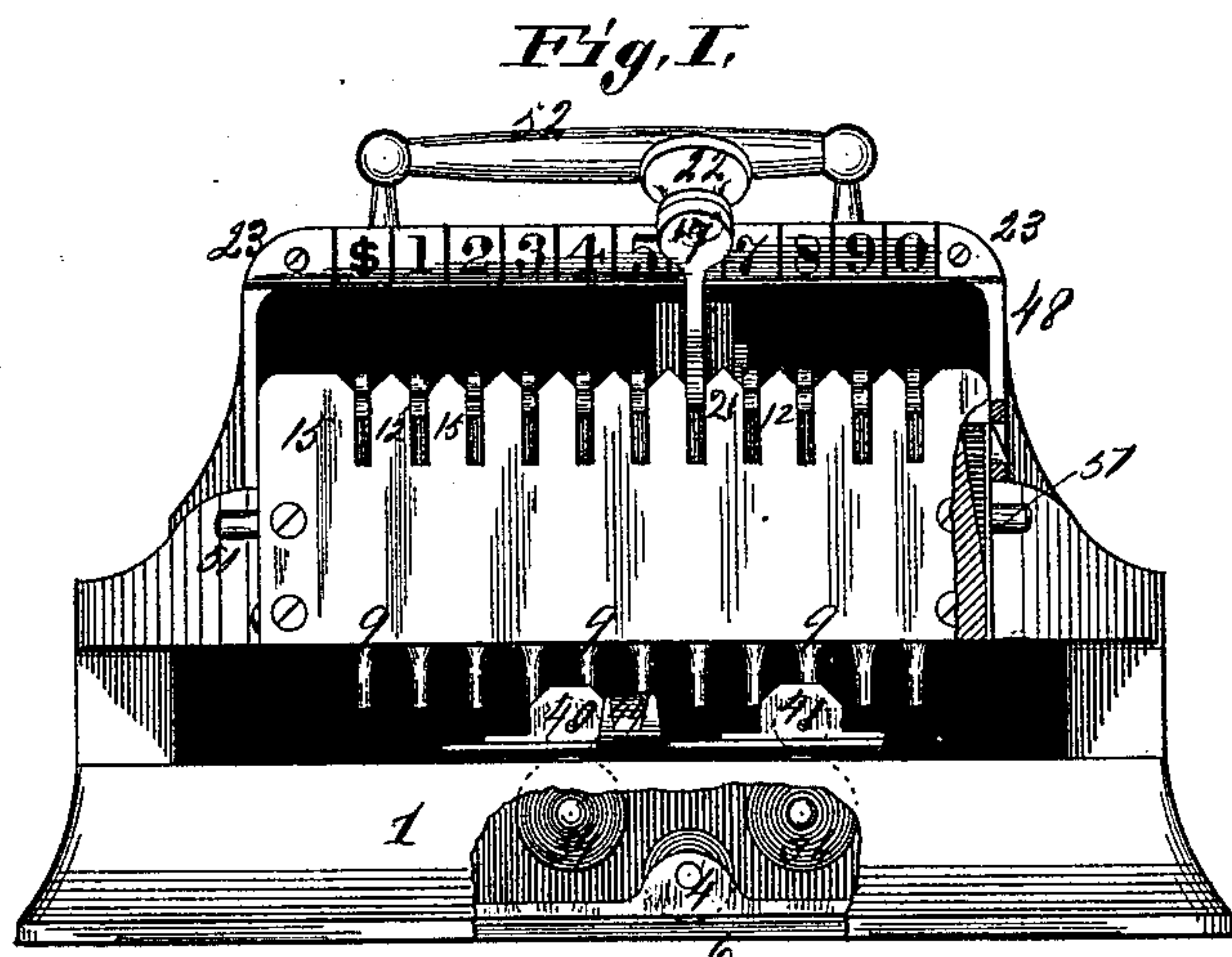
2 Sheets—Sheet 1.

J. C. LOWDON.

CHECK PUNCH.

No. 386,785.

Patented July 24, 1888.



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(No Model.)

2 Sheets—Sheet 2.

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Fig.V.

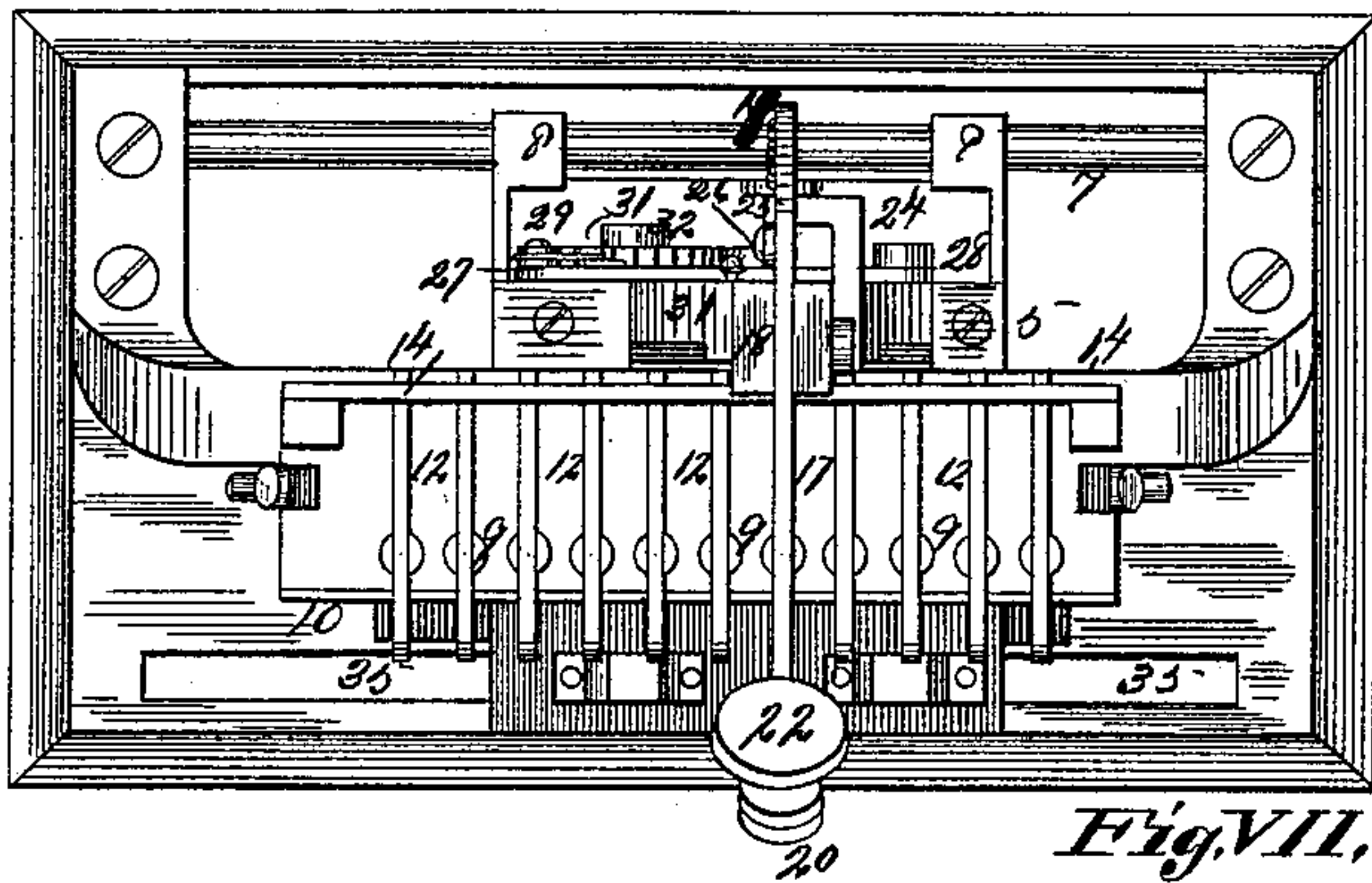


Fig.VII.

Fig.VI.

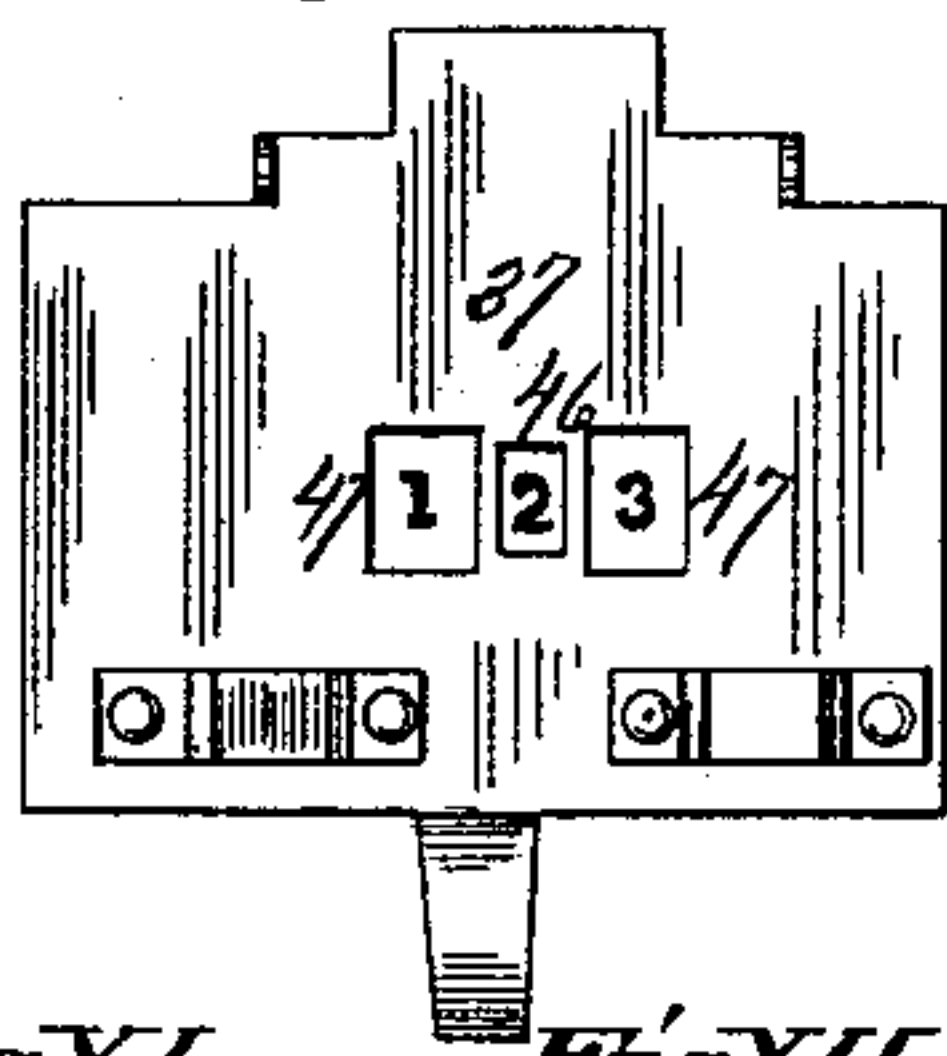


Fig.VIII. Fig.IX.

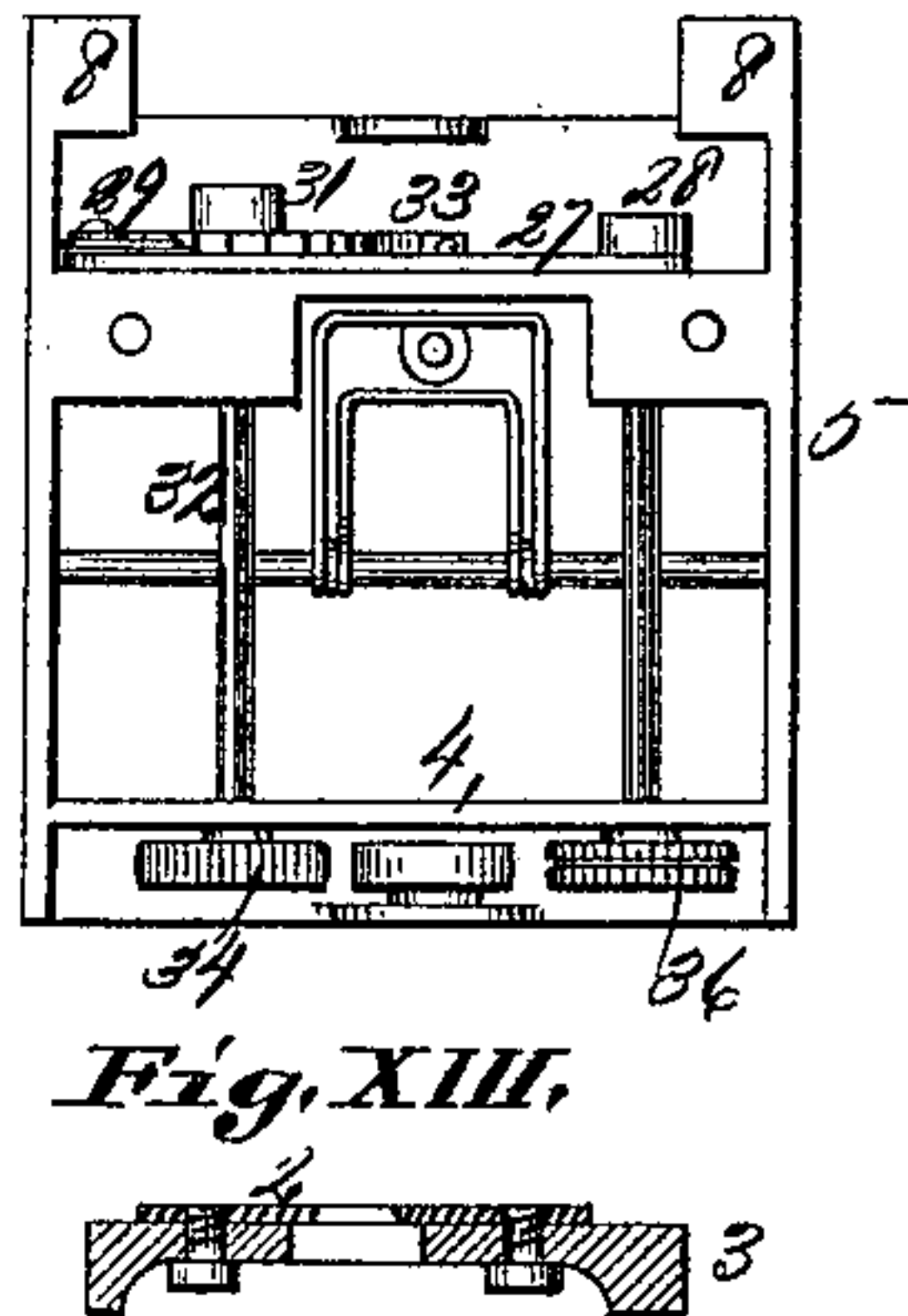
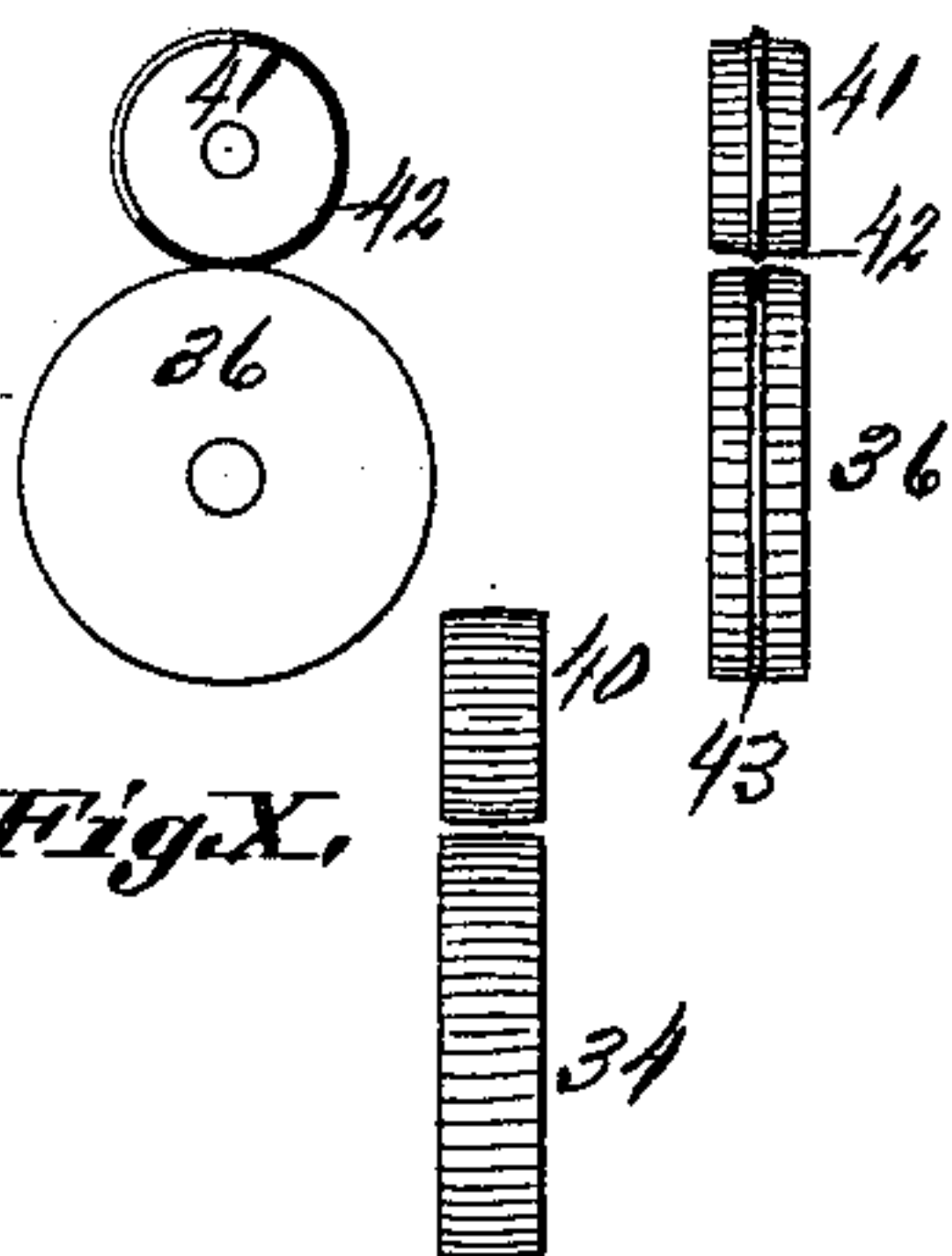


Fig.XI

Fig.XII.



Fig.X.

Fig.XIV.

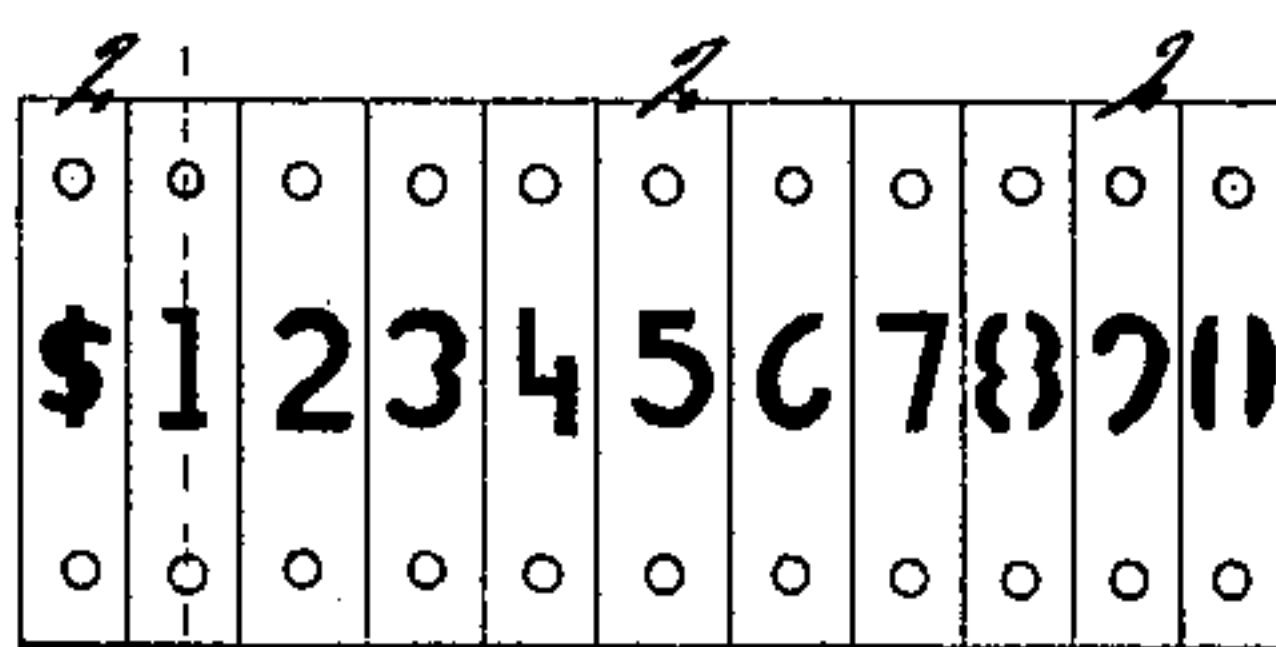


Fig.XV. Fig.XVI.



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UNITED STATES PATENT OFFICE.

JOHN C. LOWDON, OF KANSAS CITY, MISSOURI.

CHECK-PUNCH.

SPECIFICATION forming part of Letters Patent No. 386,785, dated July 24, 1888.

Application filed December 20, 1887 Serial No. 258,502. (No model.)

To all whom it may concern:

Be it known that I, JOHN C. LOWDON, of Kansas City, in the county of Jackson and State of Missouri, have invented a certain new and useful Improvement in Check-Punches, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

10 This is an improvement on the machine for which Letters Patent of the United States, No. 362,755, were granted to me May 10, 1887.

The present improvement relates to a device for insuring the upward movement of the punches with the hand-lever and to other details of construction set forth in the claims.

Figure I is a front elevation of the machine with part of the base broken out to exhibit parts beneath. Fig. II is an end elevation of the machine. Fig. III is a rear elevation with the cover removed and with parts of the base and slide broken out. Fig. IV is a transverse vertical section at IV IV, Fig. III. Fig. V is a top view of the machine with the cover removed. Fig. VI is a top plan of the perforated plate. Fig. VII is a top plan of the sliding box. Fig. VIII is a side elevation of the grooved guide-rolls. Fig. IX is an end elevation of the grooved guide-rolls. Fig. X is an elevation of the milled feed-rolls. Figs. XI and XII are respectively front and side views of the lower ends of the punches. Fig. XIII is a vertical section through the die and base plate at line XIII XIII, Fig. XIV. Fig. XIV is a top plan of the dies. Figs. XV and XVI are views illustrating manner of marking amounts on checks.

40 The base of the machine is marked 1. The die-plates are marked 2, and are secured to the table 3, which is secured to or forms part of the base. The table has apertures beneath the figure-openings of the dies to allow the pieces of paper as they are punched out to descend into a sliding box, 5, beneath. The box 5 is supported at the front by a wheel, 4, which travels on a horizontal longitudinal bar, 6, and is supported at the rear by a bar, 7, which passes through ears 8 of the box. The ends

of both these bars are fast to the ends of the base. Directly over each die is a vertical punch, 9, having bearing in the longitudinal bar 10, which is fixed to the base. The bar 10 is made hollow, and within the hollow are punch-springs 11, of which there is one for each punch. The springs act to lift the punches after they have been depressed, each punch working singly. Each punch is slotted at the upper end to receive a lever, 12, which is connected to the punch by a pin, 13. The rear ends of the levers pass through mortises in a bar, 14, said bearings forming the fulcrum of the levers. These fulcrum-bearings allow the ends of the levers to move endwise in the mortises, so that the punches will not be cramped in their sockets in the bar 10. The front ends of the levers 12 work between upright guides 15, formed by slotting the face-plate 16.

17 is a hand-lever fulcrumed upon a standard, 18, upon the box. The inner end of the lever 17 is connected to the box by a spring, 19, which, by drawing down the inner end of the lever, lifts the outer end, 20, which in its normal position is directly over the outer ends of the line of levers 12, so that as the hand-lever is forced down it will carry with it that one of the levers 12 which may be beneath it.

The upper ends of the guides 15 are spear-pointed, so that they will guide the lever 17 into exact line with a lever, 12, as the hand-lever descends. The hand-lever has a horn, 21, passing beneath the end of the lever 12, with which it may be in contact, so that as the outer end of the hand-lever ascends it draws up with it the outer end of the lever 12 and the punch, to which it is attached, if the proper spring of the punch has not proved sufficient to draw the punch from the die. Such failure may result from the punch becoming jammed fast in the die, owing to some matter getting between them. Ordinarily the springs 11 have sufficient power to lift the punches from the dies, and have always power sufficient to hold the punches in their normal raised position when they are not depressed by the hand-lever 17.

22 is a knob by which the lever 17 may be

moved longitudinally over either one of the punch-levers, and by which it may be forced down, (and also drawn up, if need should be.)

23 is a row of numbers or signs indicating the number of the punch and die beneath, as a guide for the placing of the hand lever.

24 is a stop limiting the descent of the rear end of the hand-lever.

25 is a link or rod pivoted to the hand-lever at 26, and having its lower end pivoted to the plate 27, which is pivoted to the sliding box 5 at 28. The plate 27 carries a pawl, 29, whose spring 30 forces it into engagement with the ratchet-teeth of a wheel, 31, that is upon a shaft, 32.

33 is a spring-dog, which engages the ratchet-teeth of the wheel 31 and prevents its retrograde rotation.

The construction is such that each time the outer end of the hand-lever ascends the ratchet-wheel is turned the distance of one tooth. There is some lost motion between the lever and the ratchet-wheel, either in the joints of the link or between the pawl and ratchet-wheel, or both, so as to allow the punch to leave the die before the ratchet-wheel commences to turn, because when the ratchet-wheel commences to turn the paper is fed forward, and this cannot, of course, be done before the punch is withdrawn from it. The shaft 32 of the ratchet-wheel carries a milled feed-roll, 34, whose top extends above the level of the table 3.

35 is a longitudinal slot in the table, in which the feed and guide rolls move, such slot extending nearly the whole length of the table. In line with the feed-roll, and upon a parallel shaft, is another roll, 36, which carries the paper and is turned by the friction of the paper upon it.

37 is a clearing-plate pivoted to the standard 18 at 38, and having a spring, 39, beneath its rear end, which end extends beyond the pivots 38. The spring acts to force up the rear end of the plate, and thus to force down the front end of it. The front end of the plate carries two rolls, 40 and 41, the former of which is over the feed-roll 34 and the latter of which is over the other roll, 36. These upper rolls press the paper tightly on the rolls beneath them and cause it to be fed from right to left in a straight direction beneath the punches by the intermittent rotation of the feed-roll. This roll 34 turns sufficiently each time to carry forward the paper the needed distance from one punch-mark to another upon it.

It has been said that the feed-roll is milled. The periphery of the pressure-roll 40 is also milled, as are also the guide-rolls 36 and 41. To increase the lateral hold of the guide-rolls 36 41 on the paper and insure its straight movement, these rolls have preferably a circumferential rib and groove, as seen clearly in Fig. IX, which make a slight temporary bend in the paper. The rib is shown at 42 and the groove at 43.

44 is a handle, by which the front end of the plate 37 may be raised to allow the introduction of a check or other piece of paper to be punched. The plate is also raised for the withdrawal of the paper after punching. It has been said that there may be lost motion between the hand-lever 17 and the pivoted plate 27, and in order to carry the plate up to its highest position it is connected by a spring, 45, to the standard 18.

The plate 37 has an orifice, 46, for the passage of the punch, and each side of said orifice are orifices 47, through which the check or other piece of paper may be seen.

48 is the cover, which is hinged to the case at 49, and which is held in a closed position by spring-catches 50 at each end, whose ends engage the cover, and which may be sprung inward to release the cover by pressure on the knobs 51.

52 is a handle on the cover, by which the machine may be conveniently carried.

In punching a piece of paper—as a check or anything else—it may be desired to mark in such a manner that the figures cannot be changed. The clearing-plate 37 is raised and the paper slipped beneath. Then the plate is allowed to descend, engaging the paper between the feed-rolls 34 and 40 and guide-rolls 36 and 41. The hand-lever may then be moved to the first mark at the left hand, indicating dollars, pounds, &c. Then the lever is moved over any one of the punches and pushed down, punching the number out beside the mark before made. In the latter part of the upward movement of the punch the paper has been moved so as to bring a fresh part beneath the punch about to descend. The whole amount of the check is stamped out, closing with the dollar (or pound) mark, to prevent the addition of other numbers. In Figs. XV and XVI sums in dollars and in cents are shown, respectively.

It will be seen that the plate 37 acts as a clearing-plate, preventing the punch from carrying up the paper with it.

In order to enable the punches to cut the paper with ease, I bevel their faces, giving greater prominence to one point or corner, so that the paper shall be perforated first at this point, and from this point the inclined edges shall make a "draw cut" in the paper. The inclined cutting-faces of the punches are shown in Figs. XI and XII. It will be understood that if the face of the punch is parallel with the die-plate, so that all parts of it come in contact with the paper at the same moment, there will be a tendency to force the paper down into the die without cutting the paper, whereas in this case, where one point of the cutting-face perforates the paper in advance, the above difficulty is obviated.

I claim herein as new and of my invention—

1. In a paper-perforating machine, the combination of a number of punches, each connected to a lever, 12, and a hand-lever adapted

to be moved over any one of the punch-levers, substantially as and for the purpose set forth.

2. In a paper-perforating machine, the combination of a number of punches, each connected to a lever, 12, and a hand-lever adapted to be moved over either one of the punch-levers, and having a horn engaging beneath the lever 12, to enable positive movement to be

imparted by the hand-lever to the lever 12, both upward and downward, substantially as is set forth.

JOHN C. LOWDON.

In presence of—

JAMES H. PICKERING,
THOMAS TIBBITT.