

(No Model.)

E. S. RAFF.

2 Sheets—Sheet 1.

CHECK PUNCH.

No. 429,814.

Patented June 10, 1890.

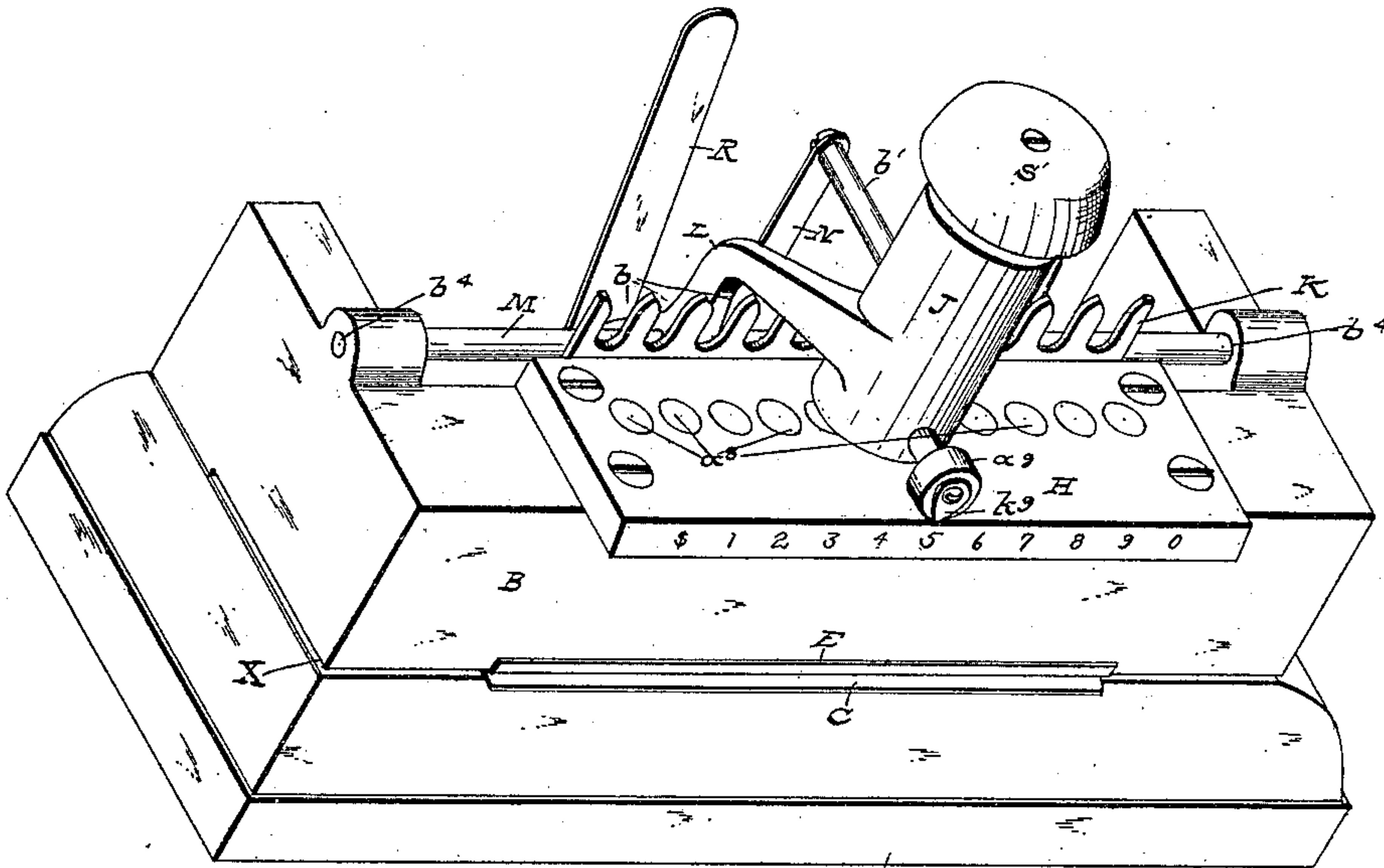


Fig. 1.

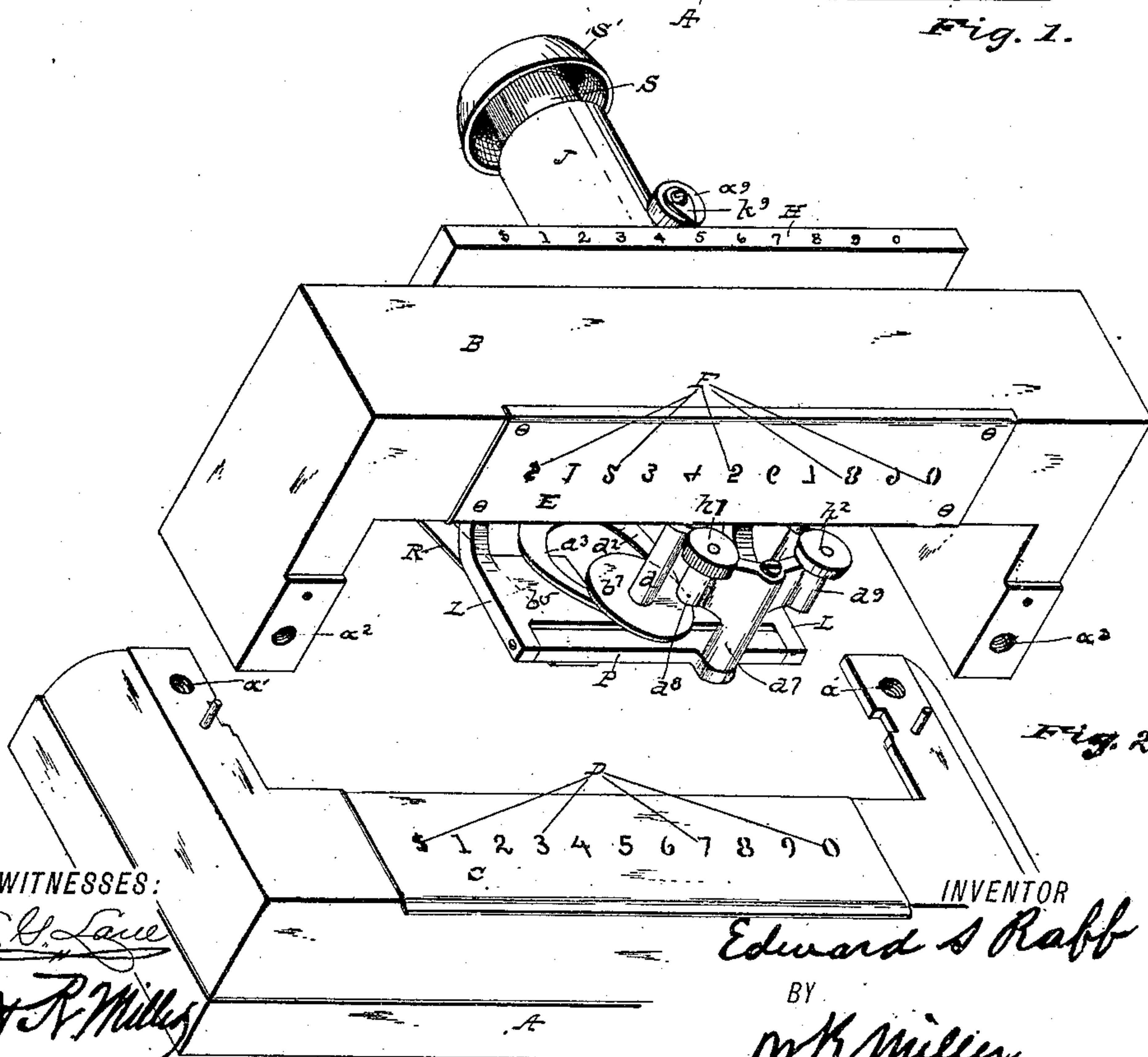


Fig. 2.

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2 Sheets—Sheet 2.

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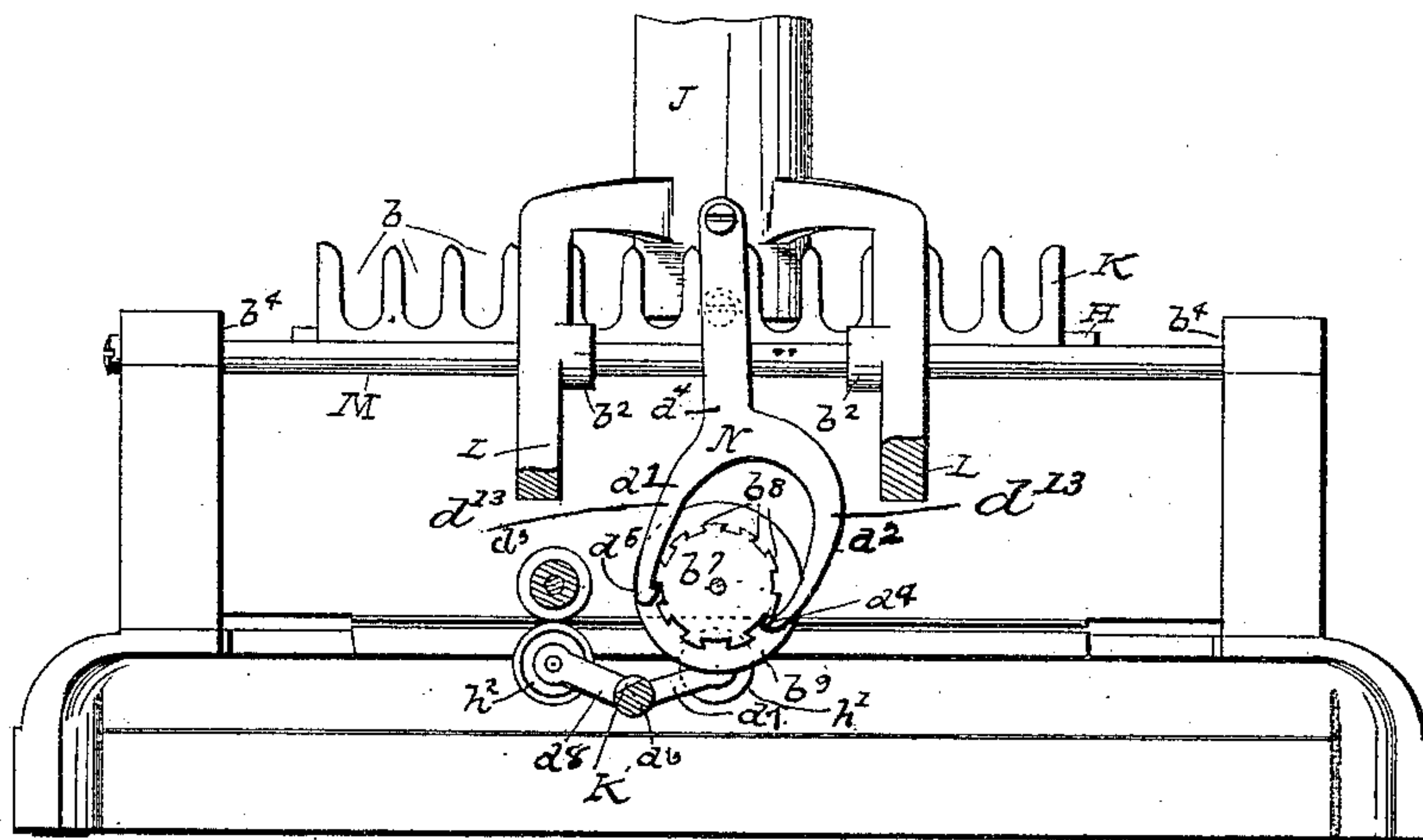


Fig. 3.

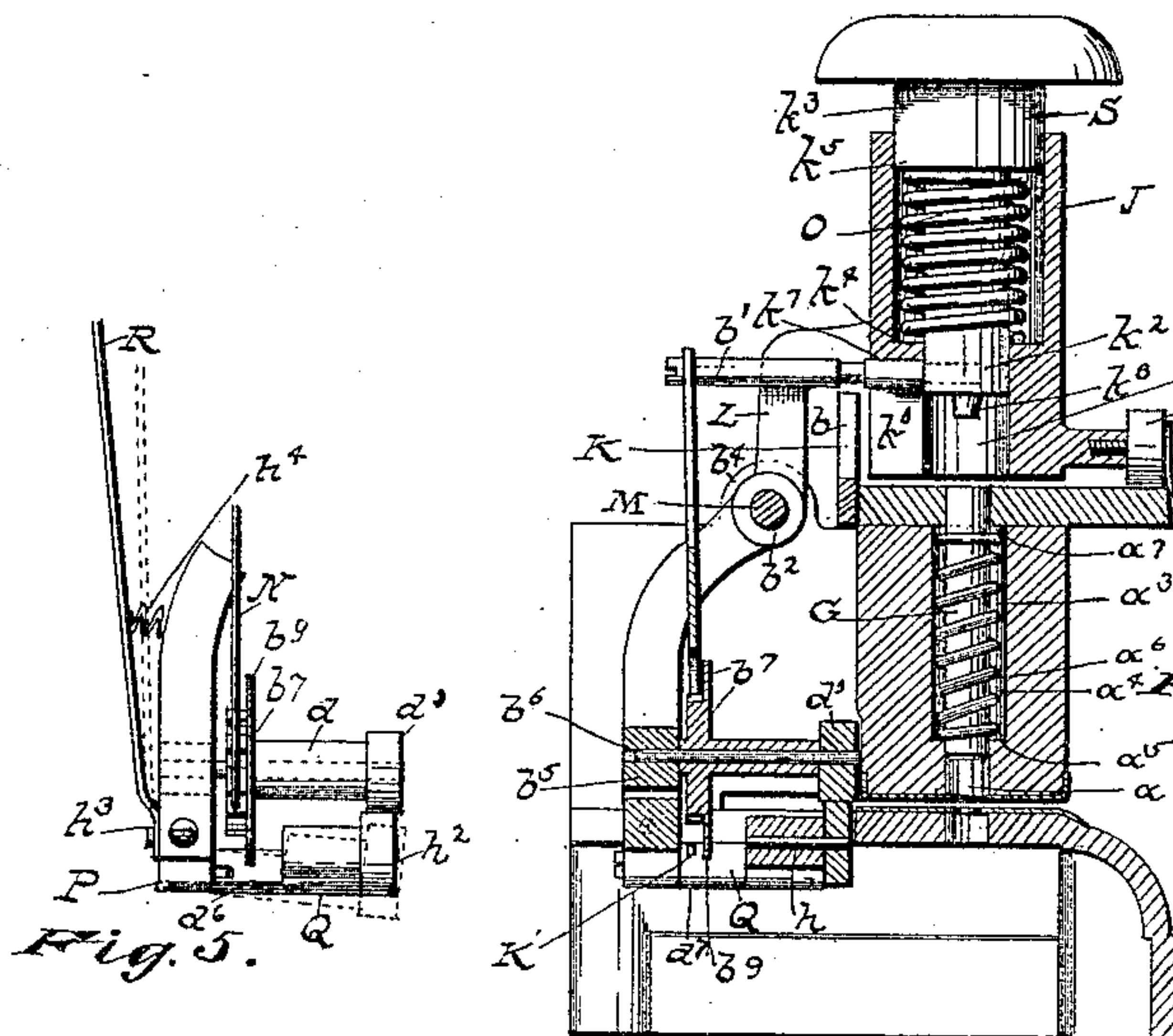


Fig. 4.

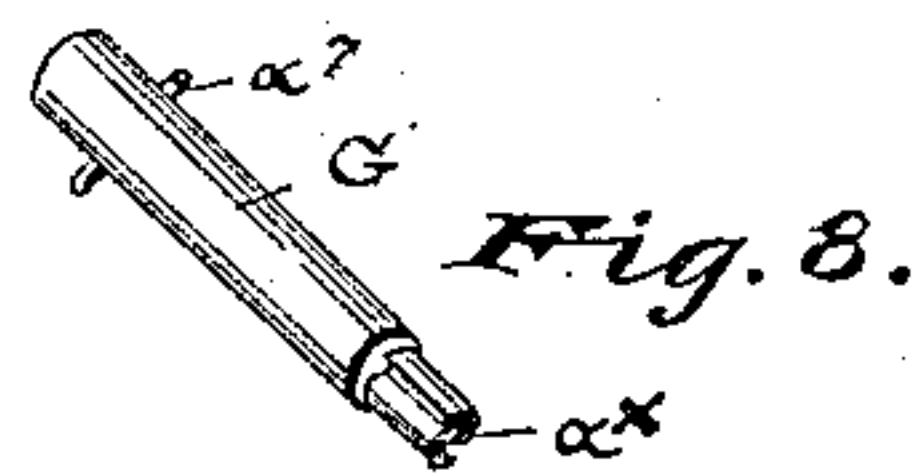


Fig. 8.

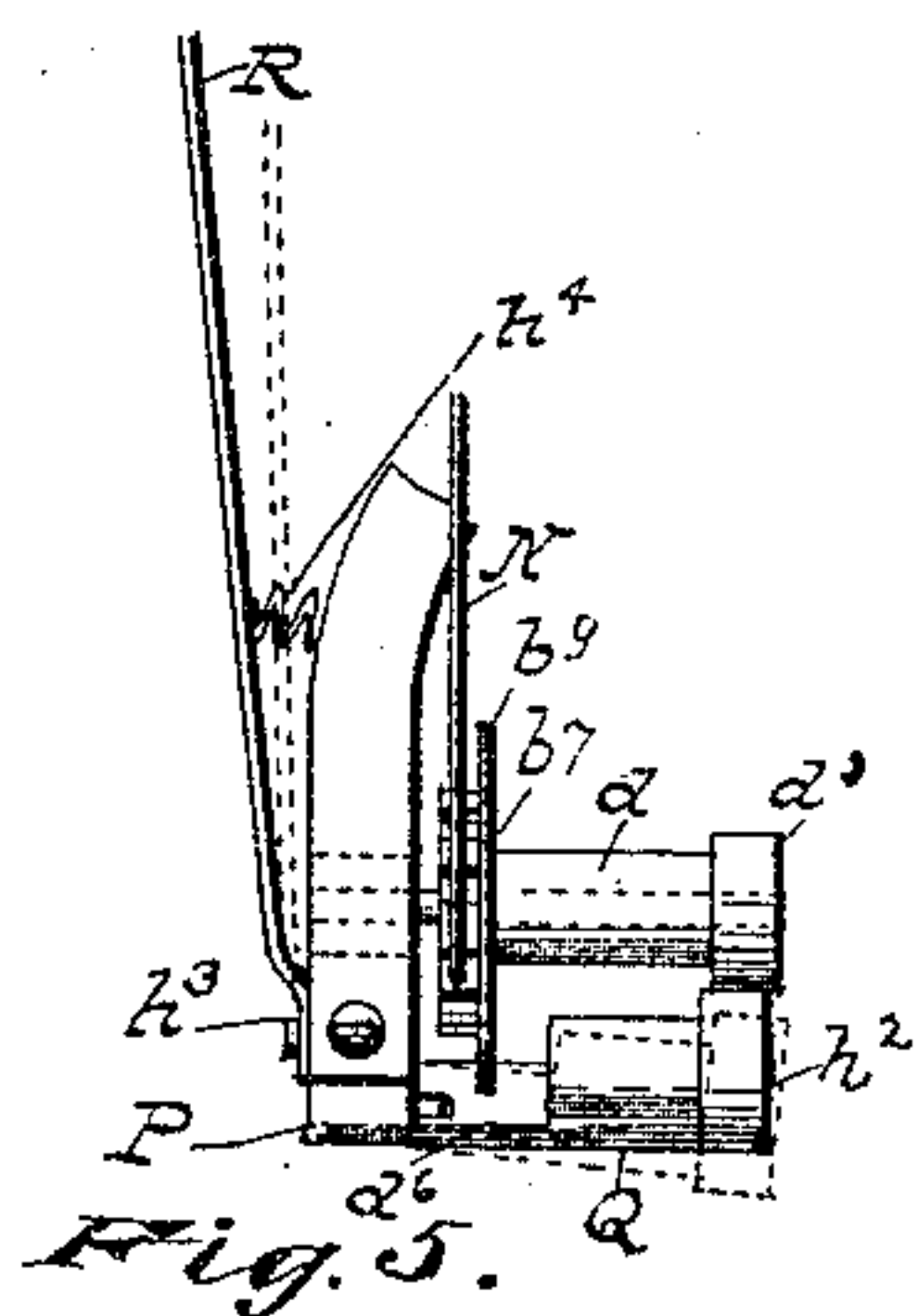


Fig. 5.

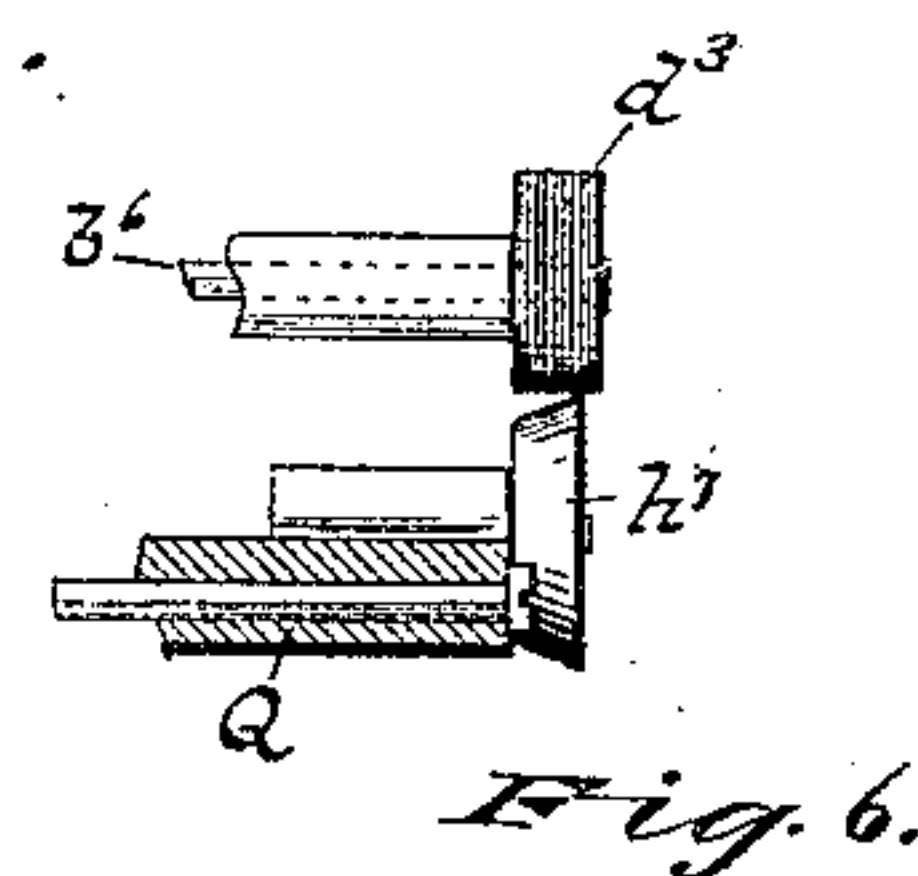


Fig. 6.

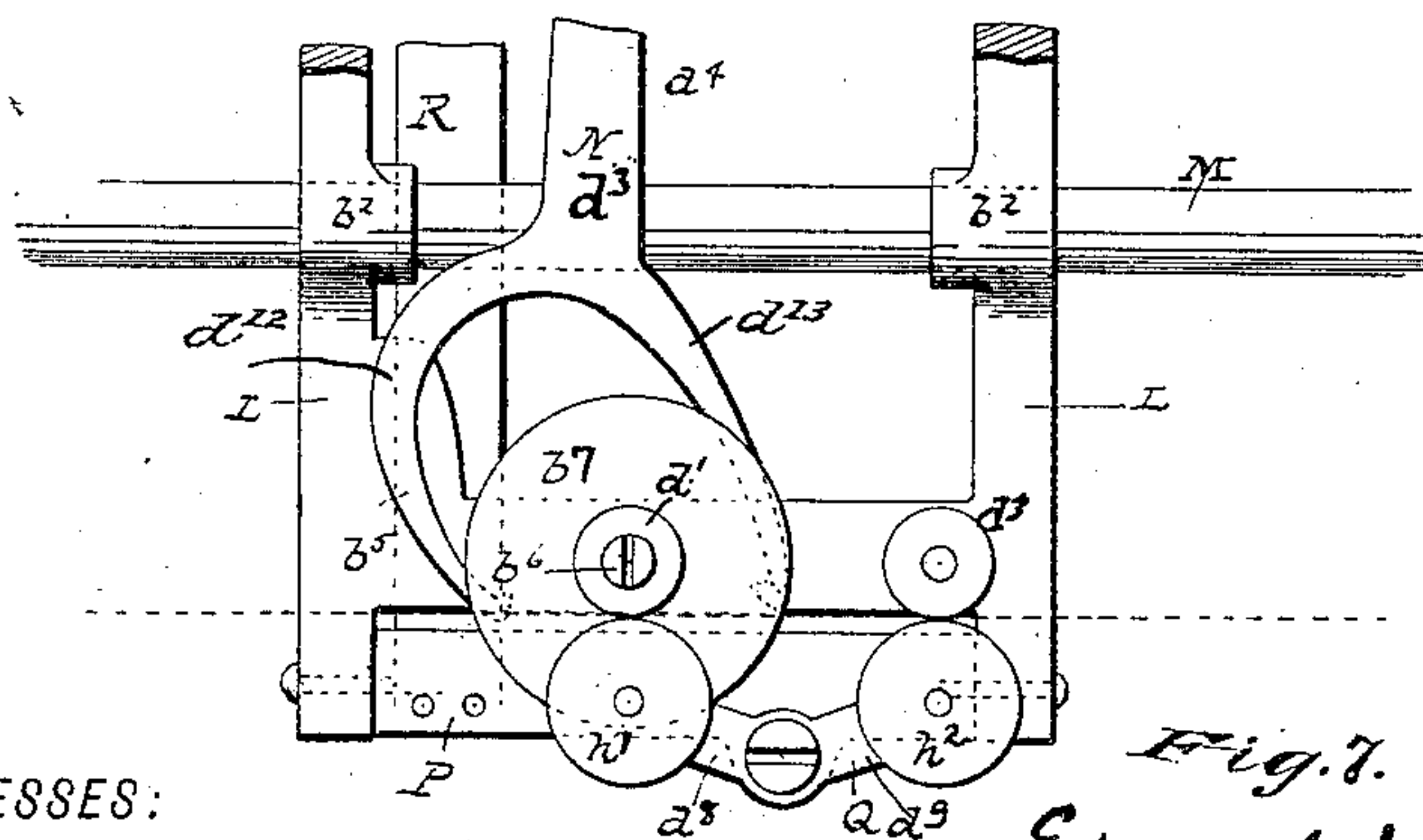


Fig. 7.

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UNITED STATES PATENT OFFICE.

EDWARD S. RAFF, OF CANTON, OHIO.

CHECK-PUNCH.

SPECIFICATION forming part of Letters Patent No. 429,814, dated June 10, 1890.

Application filed October 31, 1889. Serial No. 328,858. (No model.)

To all whom it may concern:

Be it known that I, EDWARD S. RAFF, a citizen of the United States, and a resident of Canton, county of Stark, State of Ohio, have
5 invented a 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, making part of this specification.

10 My invention relates to an improvement in machines for punching figures in bank-checks or other papers to correspond with the amount or value otherwise indicated on such check or paper to prevent subsequent alteration.

15 With these ends in view my invention consists in certain features of construction and combination of parts, as will be hereinafter described, and set forth in the claims.

In the accompanying drawings, Figure 1 is
20 a perspective illustrating my invention. Fig. 2 is a similar view with the top portion turned up to disclose the die-plate secured to the bottom portion of the frame, the stripper-plate secured to the bottom face of the
25 top portion of the frame, and a perspective of feed-rollers from below. Fig. 3 is a rear elevation showing mechanism for actuating feed-rollers. Fig. 4 is a transverse sectional
30 view through the sliding frame, rack-wheel, and left-hand-side feed-rolls. Fig. 5 is a side view or elevation of lower rear portion of sliding frame, rack-wheel, pawl, right-hand rollers, and lever. Fig. 6 is a view, partly
35 perspective and partly sectional, showing the left-hand rollers and supporting-frame. Fig. 7 is a view from the front of the rear lower portion of the sliding frame, showing the rock-shaft, the front face of the feed-rollers, the actuating-pawl, lever, and supporting-
40 bar; and Fig. 8, a punch.

The main frame of the machine consists of a bottom portion A and an upper or top portion B, the under side of the bottom A cut
45 away, as shown in Figs. 3 and 4, to lighten the casting and to form a cavity, in which may be placed a box or drawer to receive the cuttings of paper from checks or other like papers. On the upper front face of said
50 bottom portion of the frame is secured a metal plate C, preferably of tempered steel, in which is formed a series of female dies of such forms as may be desired; but for the

purpose of this application a dollar-mark and a series of numerals or figures D are shown.

On the under face of the front or overhung
55 portion of the frame-piece B is secured a similar plate E, having perforations F, to correspond with the dies D in the plate C, said plate with its perforations to serve as a rest for the type portion and a guide to register
60 the type portion a^x of the punch G, hereinafter described, and to strip the paper or article punched from the punch.

The frame portions A and B are secured together by screw-bolts passed through the
65 perforation a' in the rear portion of the frame-piece A into a threaded perforation a^2 in piece B.

In the front portion of the frame-piece B is provided a series of vertical perforations, as
70 a^3 , placed parallel with the front portion of said piece B. The lower end portion a^4 of said perforations is contracted, as shown, to form a shoulder a^5 to support the coil-spring a^6 , and to correspond with the body of the punch
75 G a coil-spring a^6 is placed about the body of the punch, its lower end resting on the shoulder a^5 and its upper end under a pin a^7 , passed through the upper end portion of the punch. The upward movement of the punch, which
80 is caused by the upwardly-exerted energy of the spring, is arrested by the pin a^7 striking against the bottom of the plate H, said plate having a series of perforations a^8 to correspond with the perforations a in the frame-
85 piece B. The perforations a^8 are adapted to receive the upper end portions of the punches G, and the plate H projects forwardly to provide a way for the head-supporting wheel a^9 , which is supported by a spindle projected
90 from the front side of the head J.

To the rear of the plate H is secured, either to the plate H or the frame-piece B, in vertical relation a plate K, having at its upper
95 edge portion a series of notches b , which correspond with the punches G and serve to guide the plunger S to the desired punch by the rearwardly-projected bar b' entering and passing down into the notch b .

The head J is provided with a rearwardly
100 and downwardly projected frame portion L, consisting of two arms having sleeve-bearings b^2 , through which a supporting slide-rod M is passed, the ends of which are secured in

the upper portion of the frame, as shown at b^4 . To the cross-bar b^5 of the frame L is provided a forwardly-projected pin b^6 , rigidly secured thereto, on which there is loosely mounted a rack-wheel b^7 , having rack-teeth b^8 , an annular flange b^9 , and forwardly-projected sleeve d , on the forward end of which is mounted a roller d' , hereinafter explained.

At the rear end of the bar b' is loosely secured a depending pawl N, the lower end portion of which is bifurcated, the prongs d^{12} and d^{13} embracing the rack-wheel b^7 , as shown in Figs. 1 and 7, the upper end portion of the latter curved or thrown to one side, as shown, and the lower end portion of prong d^{12} turned out in an opposite direction, by which arrangement of the prongs d^{12} and d^{13} the space between them is oblique to the vertical portion or arm d^3 of the pawl N to allow of a lateral movement of the lower end of the pawl, as hereinafter described. The lower ends of the prongs aforesaid are provided with hooks d^4 and d^5 , that engage the rack-teeth b^8 , the hooks engaging the teeth b^8 on the under side, the prong d^{13} , with its hook d^4 , to rotate the rack-wheel as the pawl is raised up by the upwardly-exerted energy of the spring O, that raises the plunger S, and the prong d^{12} , with its hook d^5 , to arrest said rotation by engaging the under side of a rack-tooth diametrically opposite, or nearly so, of the tooth engaged by the hook d^4 , thereby arresting the further rotation of the rack-wheel and roller d' .

At the lower end portion of the frame L and pivotally secured thereto is provided a rock-shaft P, to which is secured a roller-supporting frame Q, having a neck portion d^6 and outwardly-extending arms d^8 and d^9 . In said arm portions are provided spindles h , on the front end of which are loosely secured rollers h' and h^2 , the former slightly coned, the larger diameter portion to correspond with and engage a groove in the roller d' . (See Fig. 6.)

To rock the shaft P an operating-lever R is secured to the shaft, as shown at h^3 . By moving said lever to position indicated by the dotted lines in Fig. 5 the rollers will be thrown apart, as shown by dotted lines in same figure, to allow the check to be passed in between the rollers, and when the lever is released the spring h^4 will throw the lever outwardly, which serves through the rock-shaft and frame Q to hold the lower rollers h' and h^2 against the upper rollers d' .

A portion of the neck d^6 of frame Q is cut away to form an incline plane K' , Figs. 3 and 4, the use of which will be explained farther along.

The head J is provided with a vertical aperture of unequal diameter, the lower portion k^1 adapted to the diameter of the lower portion k^2 of the plunger S and the upper portion of the aperture adapted to the diameter of the large portion k^3 , by which arrangement a chamber is formed to receive the

spring O, the lower end thereof resting on the shoulder k^4 of the head J and the upper end under the shoulder k^5 of the plunger S. An oblong perforation k^6 is provided through the rear side of the lower portion of the head J, through which the bar b' is projected. The upper movement of said bar is arrested by the shoulder k^7 , and the downward movement by the end portion of the plunger S, to which the bar b' is secured. At the lower end of the plunger there is provided a downwardly-projecting portion k^8 , adapted to enter the perforations a^8 in the plate H to drive the punches down to perforate the paper.

On a forwardly-projected arm there is loosely secured a supporting and guide roller a^9 and pointer k^9 .

The operation is as follows: A bank-check or other article to be perforated is passed into the body of the machine in the open space X, between the front portions of the frame and the plates C and E, the lever R drawn forward, and the check passed in between the rollers, the edge of check resting against the front face of the rack-wheel b^7 . The lever is then released. The energy of the spring h^4 will cause the rollers h' and h^2 to press the paper against the rollers d' . The plunger S is driven down by the hand striking on the head S', the lower end portion striking the punch G. The type portion a^x is driven through the paper and into the die D, and for the purpose of this case, say, into the dollar-mark. The stem b' will pass into the corresponding notch b and carry the pawl N down, and in its course the lower end of the prong d^{13} will strike the plane K' , which will carry the pawl to one side, bringing the hook d^4 below the central portion of the rack-wheel b^7 . The reverse or upward movement will engage the hook d^4 with the adjacent tooth on the hook side and carry it up to the position shown in Fig. 3, rotating the rack and roller d' a distance, and move the paper longitudinally the distance of one space between the figures. To write or to punch "\$1,590," the head J will be moved to the left and the pointer k^9 over the dollar-mark. The plunger S is driven down, cutting the signal in the paper. The head is then moved to the right one space, the pointer over the figure 1, the plunger operated as before mentioned, and the pawl and rack operating, as before stated, to space the paper independently of the sliding movement of the head J and frame L. Slide the head farther to the right, the pointer resting over figure 5, which is then punched out. Then move the head farther to the right to figure 9 and repeat the punching operation. Then move to figure 0 and punch that out. In all of these movements of the head the paper is carried with the head to remove the check. Draw the lever R forward to release it from the roller.

Having thus fully described the construction and operation of my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a check-punch, the combination, with body portion A and B, of the plate C, having a series of female dies D, arranged in parallel relation to the front portion of body, a stripping-plate E, rigidly secured to the body and having perforations to correspond with the dies D, a notched or combed plate K, a slide-rod M, secured to the upper portion of said body, a sliding frame L to slide on said rod, said frame having a rearwardly and downwardly projected portion, slides b^2 as a support for the rack-wheel b^7 and rollers d' , rock-shaft P as a support for the swinging rollers h' and h^2 , and a lever to operate said rock-shaft, substantially as described, and for the purpose set forth.

2. The combination, with the supporting-frame having a series of punches therein, of a die-plate C and a stripping-plate E, secured thereto, as shown, a slide-rod M, a sliding head J, adapted to slide thereon and supported thereby and by a roller a^9 , said head having a vertical perforation, a plunger S, adapted to said perforation, a rearwardly-projected arm b' , a swing-pawl N, loosely secured thereto and bifurcated at its lower end portion, the prongs to stand oblique to the vertical arm d^3 and having on their lower end portions hooks d^4 and d^5 to engage the

under side of the teeth b^8 on rack-wheel b^7 , a plane K' to divert the downward movement of the pawl, and a spring to raise the plunger and pawl and to rotate the rack-wheel and rollers, substantially as described, and for the purpose set forth.

3. In a check-punch, the combination, with the sliding head and the depending frame thereto attached, of a rock-shaft secured to said depending frame, a roller-frame secured to said rock-shaft and provided with rollers, rollers journaled above the first-named rollers, and a spring-actuated lever connected with said rock-shaft for operating the same, substantially as set forth.

4. The combination, in a check-punch, of the rack-wheel b^7 , the bifurcated pawl, the prongs of which embrace the rack-wheel b^7 and have on their lower ends hooks that oppositely engage the teeth b^8 of the rack-wheel b^7 , and the plane K' to divert the downward movement of the pawl, substantially as described, and for the purpose set forth.

In testimony whereof I have hereunto set my hand this 22d day of October, A. D. 1889.

EDWARD S. RAFF.

Witnesses:

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CHAS. R. MILLER.