

(No Model.)

3 Sheets—Sheet 1.

F. W. SMITH, Jr., & S. S. WILLIAMSON.

CHECK PUNCH.

No. 413,575.

Patented Oct. 22, 1889.

Fig 1

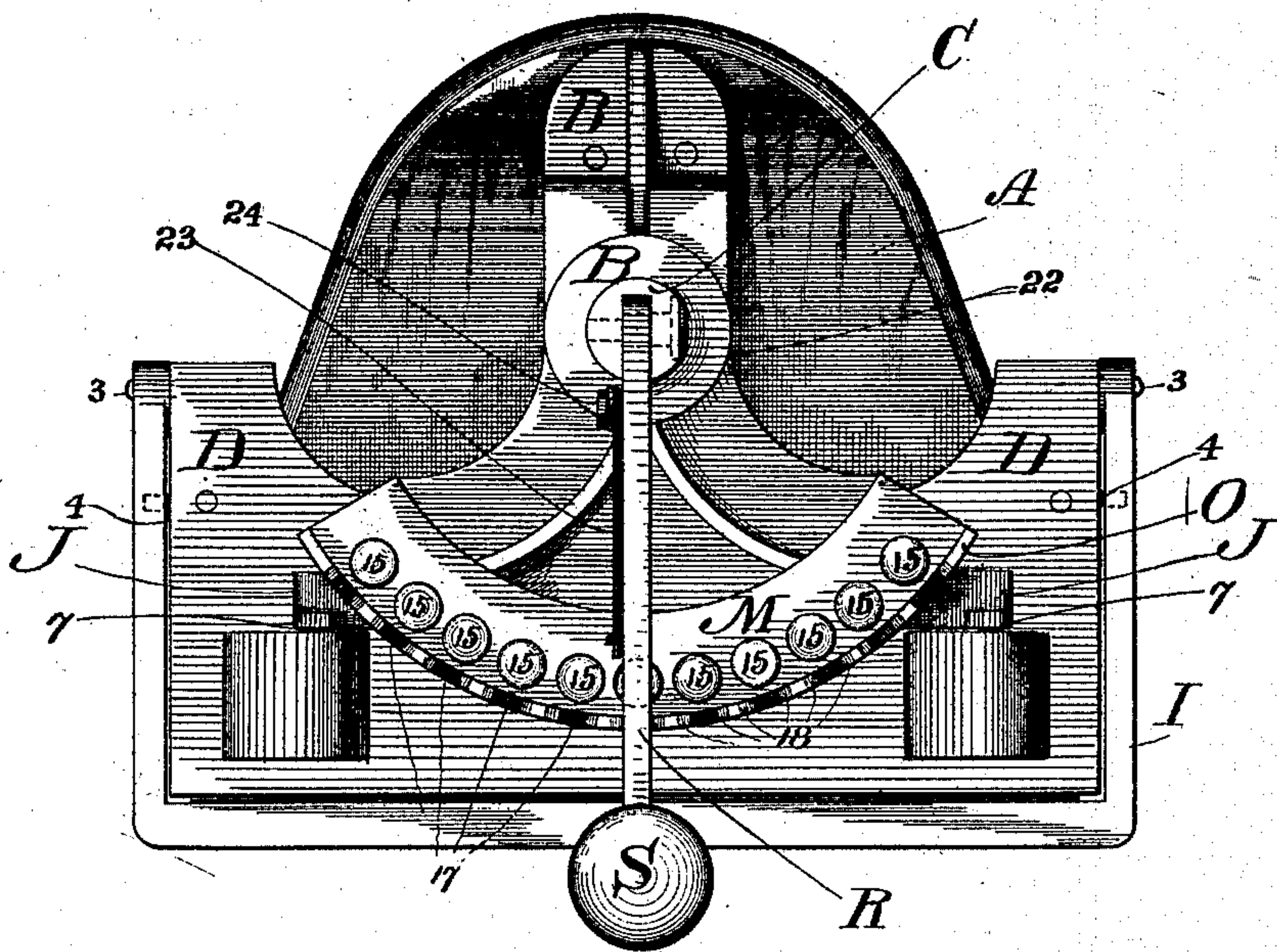
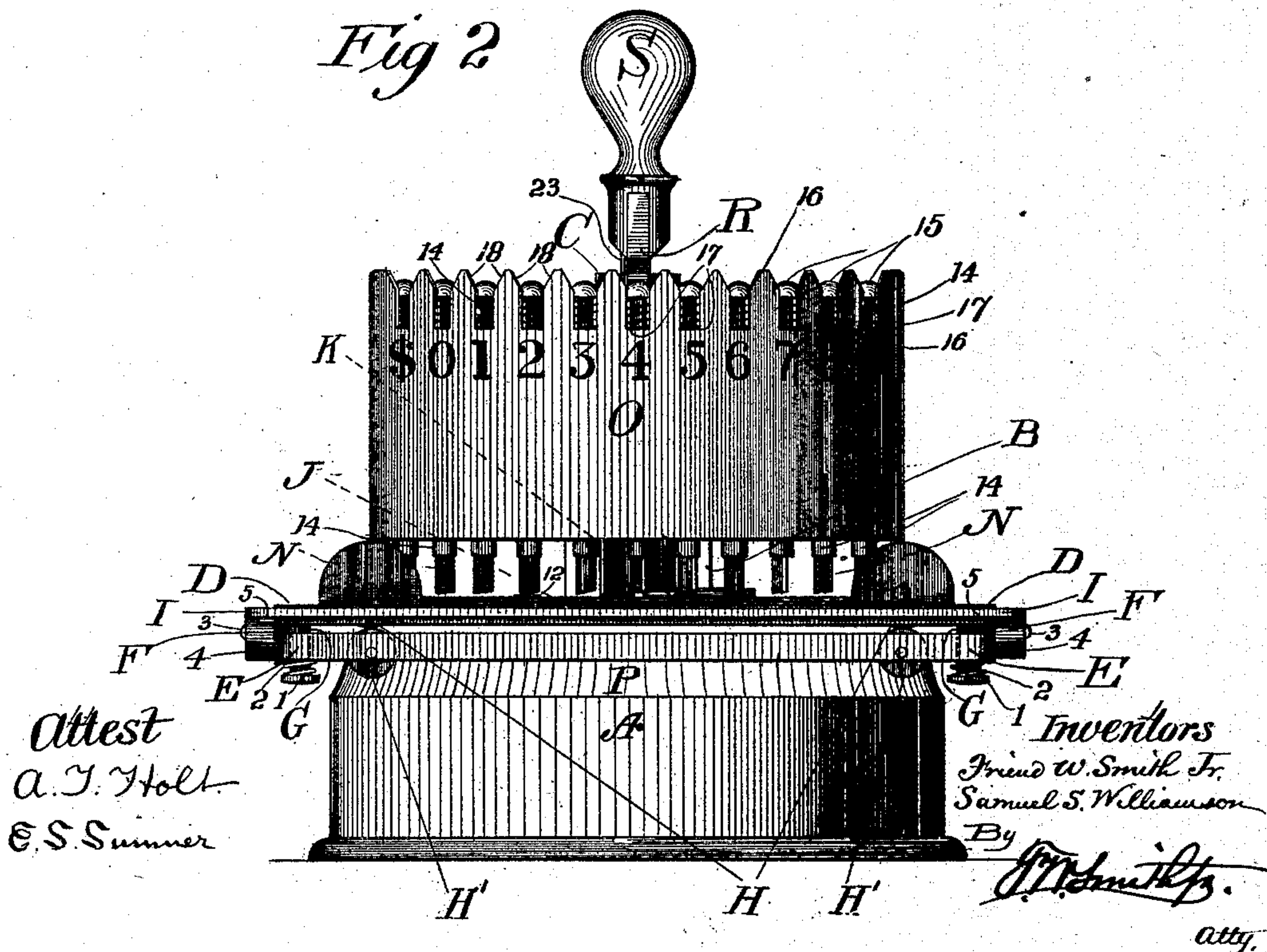


Fig 2



Attest
A. J. Holt
E. S. Sumner

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By
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Fig 3

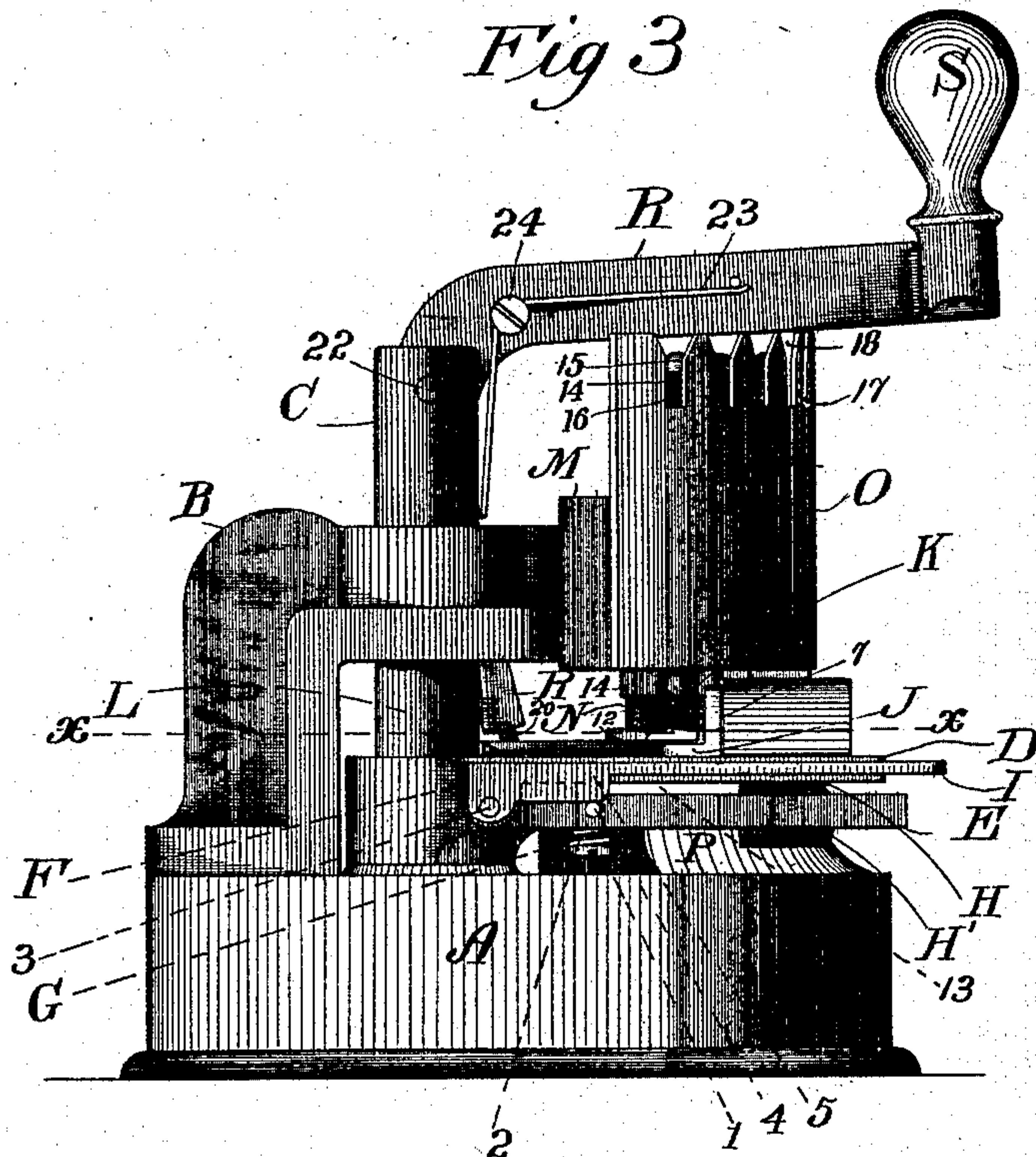
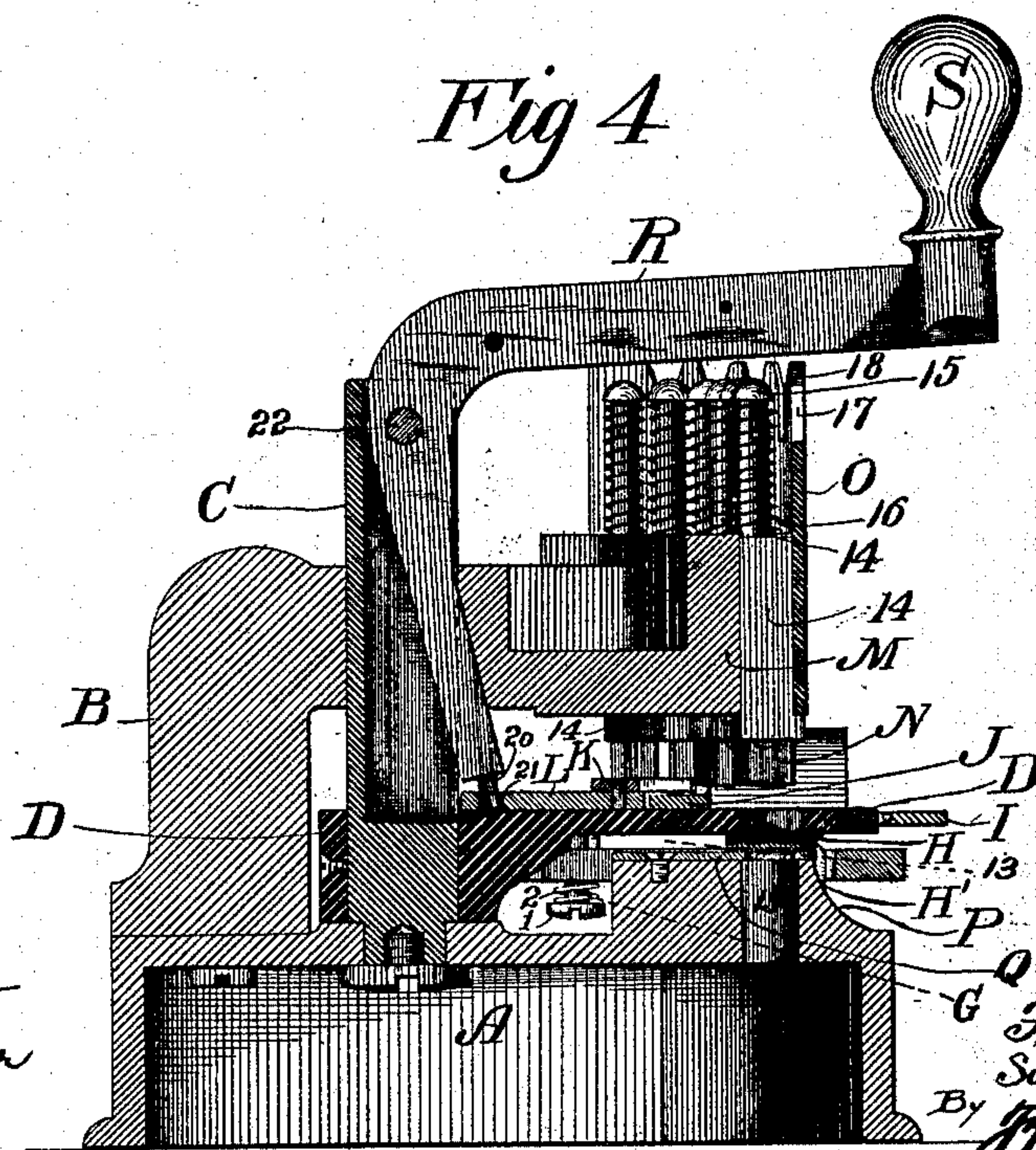


Fig 4



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Fig 5

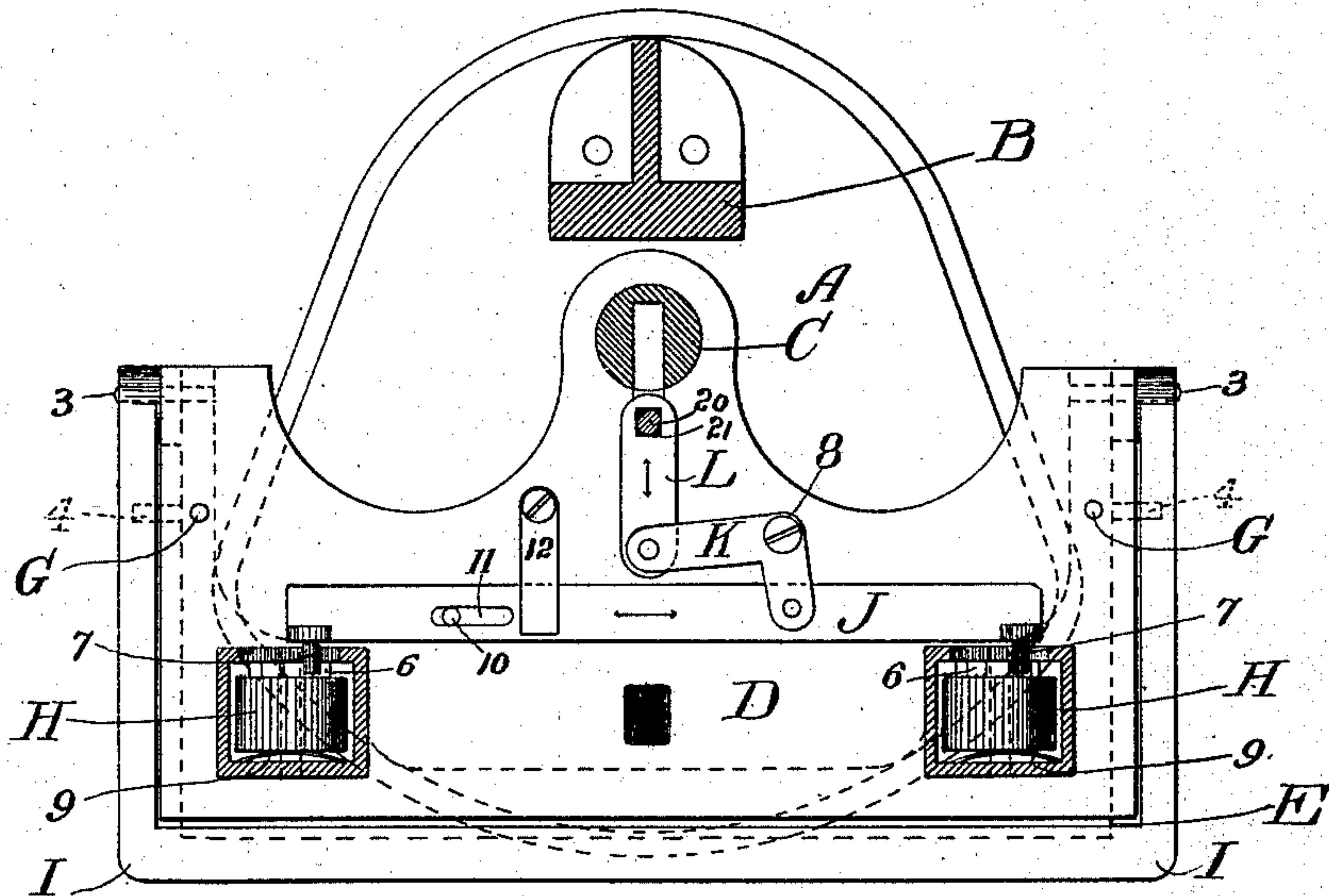
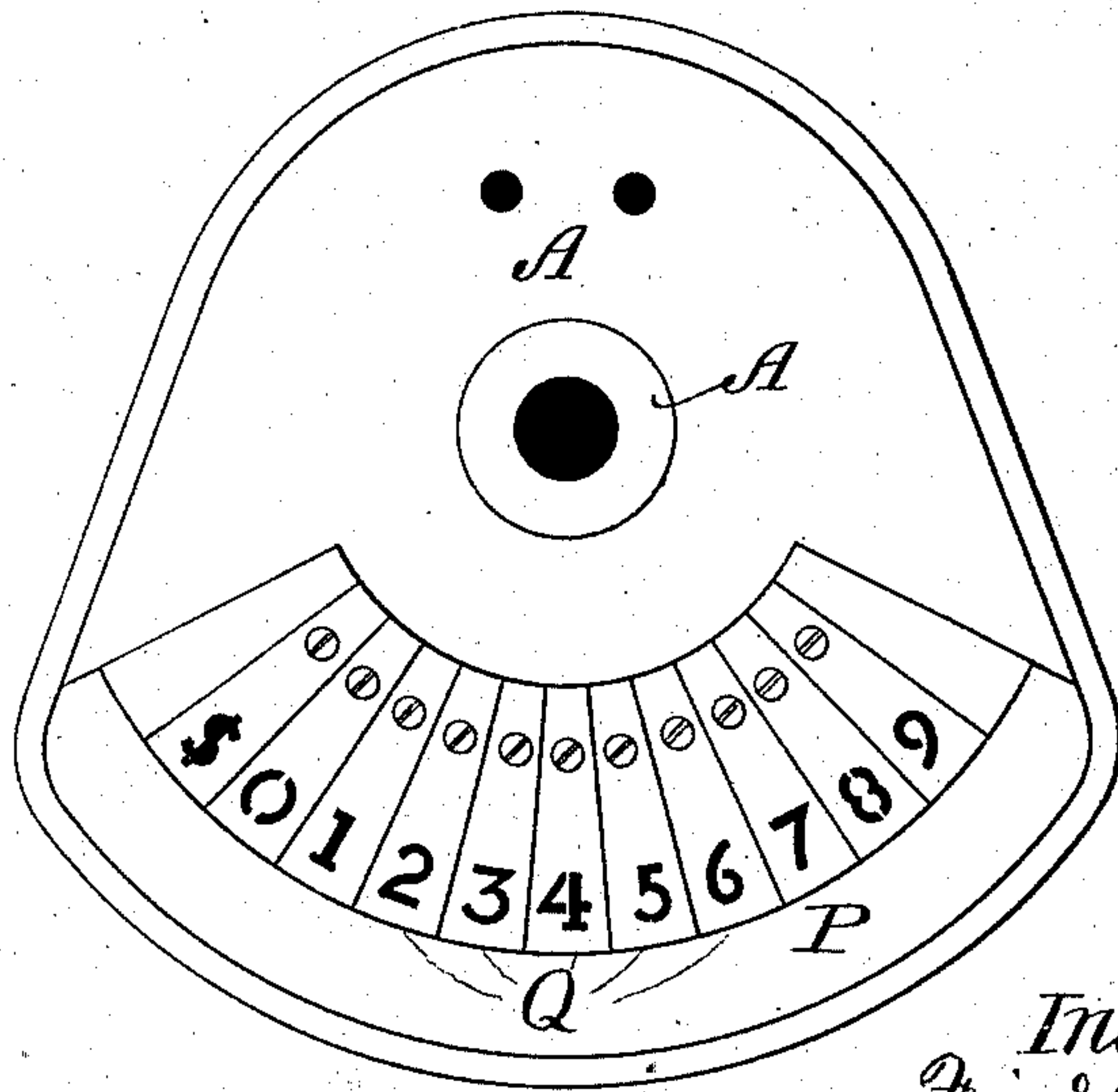


Fig 6



Attest

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E. S. Sumner

Inventors

Fried W. Smith Jr.
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UNITED STATES PATENT OFFICE.

FRIEND W. SMITH, JR., AND SAMUEL S. WILLIAMSON, OF BRIDGEPORT,
CONNECTICUT.

CHECK-PUNCH.

SPECIFICATION forming part of Letters Patent No. 413,575, dated October 22, 1889.

Application filed October 28, 1888. Serial No. 289,219. (No model.)

To all whom it may concern:

Be it known that we, FRIEND W. SMITH, Jr., and SAMUEL S. WILLIAMSON, citizens of the United States, residing at Bridgeport, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Check-Punches; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

Our invention relates to certain new and useful improvements in check-punches, and has for its object to simplify the construction of said devices and to greatly facilitate the adaptation of the same in practical use.

With these ends in view our invention consists in the details of construction and combination of elements, such as will be hereinafter fully set forth, and then specifically designated by the claims.

In the accompanying drawings, Figure 1 is a plan view of our improvement; Fig. 2, a front elevation; Fig. 3, a side elevation; Fig. 4, a central vertical section, the operating-lever being in elevation; Fig. 5, a section at the line $x x$ of Fig. 3, and Fig. 6 a detail plan showing the die-bed.

Similar letters and numerals denote like parts in the several figures.

A is the bed, and B a standard extending upward therefrom and rigidly secured thereto.

C is a spindle journaled within said bed and standard so as to be capable of a free rotary movement.

D is a plate rigidly secured to the spindle C, so as to revolve therewith, and E is a tray pivoted at 3 between ears F, depending from said plate.

G are pins extending from the plate D through the tray and terminating in heads 1, between which latter and the bottom of the tray are coil-springs 2, whereby the downward movement of said tray is rendered resilient. The pins G pass loosely through the tray, and the heads 1 limit the downward movement of the tray, the springs serving to keep the latter in elevated or normal position.

H H' are feed-rolls journaled, respectively, in the plate D and tray E, one above the other. We prefer to use two sets of these rolls—one at each end of said plate and tray—in order to insure a constant and uniform feed movement, as will be clearly understood from the description hereinafter to be given. The rolls H H' are normally in contact, owing to the action of the springs 2.

I is a lever extending around the plate D and pivoted at 3 to the ears F, and 4 are pins extending laterally from opposite sides of the tray, upon which pins rest fins 5, which depend from said lever. The function of this lever is to depress the tray so that the rolls H H' will be separated for the purpose of introducing a check, as will be presently set forth.

6 are ratchet-wheels rigidly secured to the inner sides of the rolls H.

J is a pawl-carrier resting on the plate D, and having at each extremity pawls 7, which project into operative engagement with the ratchet-wheels 6.

K is a bell-crank lever pivoted at 8 to the plate D, the ends of said lever being pivoted, respectively, to the carrier J and to a link L, so that it will be readily understood that the reciprocation of said link in the direction indicated by the arrow will effect a lengthwise reciprocation of the carrier, whereby the pawls 7 will operate to turn the ratchets 6, and thereby revolve the rolls.

9 are bow-springs which bear against the outer sides of the rolls H and serve as frictional detents to prevent the reverse movements of said rolls while the pawls are returned to normal position.

10 is a pin projecting from the plate D through a guide-slot 11 in the carrier, whereby the movement of the latter is rendered uniform and steady.

12 is a flexible flat spring secured to the plate D and bearing directly upon the carrier J to further steady the movement of the latter and to permit said carrier to rise and fall with a spring action as the pawls ride over the ratchet-wheels 6 and drop into position behind succeeding teeth.

The mechanism consisting of the rolls H H', ratchets 6, pawls 7, carrier J, guided as set forth, bell-crank K, link L, and detents 9, constitute our check-feeding means, and the insertion and step-by-step feed of a check is accomplished as follows: The operator depresses the lever I, inserts the check between the rolls within the space 13, releases the said lever, thereby causing the rolls to grip the check, and by reciprocating the link L in the direction indicated by the arrow effects the intermittent revolution of said rolls, which latter by their movement feed the check step by step.

We will now proceed to describe the means by which the feed is operated and the punching of the check effected.

M is a head integral with or secured to the standard B, and having vertically extending therethrough pins 14, capable of a free up-and-down movement. These pins terminate at their upper ends in heads 15, between which latter and the head M are coil-springs 16, whereby the movements of said pins are rendered resilient and the normal elevated position of the latter insured. The pins extend below the head M, and on their lower ends are secured the punches N.

O is a guide-plate secured to the head M and provided with slots 17 immediately in front of the pins 14. These slots have flared gates 18, and at the lower ends of said slots and upon the plate O are the signs or numbers \$, 1, 2, 3, 4, 5, &c., which identify the punches.

P is the die-bed, secured upon or cast with the bed A, and having a channel 19, through which the punchings drop from the die within the bed A.

Q are the dies secured on the bed P and adapted to register with the punches.

R is an L-shaped operating-lever, the heel end of which terminates in a pin 20, fitting loosely within a socket 21 in the link L. The knee of this lever is pivoted at 22 within the spindle C, and a spring 23, secured to the lever by a pin or screw 24 and bearing at its free ends against the said spindle and lever, respectively, keeps said lever in a normal elevated position. The said lever extends forward above and beyond the guide-plate O, and in cross-diameter said lever is of such dimension as to fit easily within the slots 17. Any suitable knob S is secured to the outer end of this lever.

By grasping the knob S the lever R, spindle C, plate D, and parts carried thereby are swung in the arc of a circle, and in operating the punches it is merely necessary to swing the lever R until it is above the particular punch to be operated, when the said lever is depressed, thereby forcing the punch into proper engagement with its corresponding die. When the knob is released, the springs 16 and the spring 23 co-operate to return the lever to normal position. When the forward

end of the operating-lever is depressed, the heel end thereof will be thrown rearward, thereby operating the link L, bell-crank K, and carrier J to return the pawls 7 to normal position, and when said lever is elevated the said pawls will be operated against the ratchets 6 to turn the feed-rolls H H', as and for the purposes hereinbefore set forth.

The most prominent features of our improvement are that the punches and dies are stationary, while the check carrying and feeding mechanisms are shifted in synchronism, and this will be readily understood when it is borne in mind that the lever R and plate D are both secured to the same rock-shaft or spindle C.

We do not herein claim novel features of construction embodied in the punching mechanism, as they are made the subject-matter of another application filed by us October 2, 1889, Serial No. 325,768.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. The combination of the rotary spindle, the plate D rigid therewith, the tray E, pivoted beneath and to said plate, feed-rolls H H', journaled in said tray and plate, respectively, one above the other, springs adapted to keep said tray and plate together and render the downward movement of the tray resilient, ratchet-wheels rigid with the inner sides of the wheels H, pawl-carrier J, resting on the plate D and having terminal pawls 7 projecting into operative engagement with said wheels, lever K, pivoted to the plate D and having its extremities pivoted, respectively, to the carrier J and link L, the operating-lever pivoted within said spindle and having its heel end engaging with the link L, the dies secured upon the bed of the punch, the resiliently-acting punches mounted within the head, and the guide-plate provided with slots which identify the punches, substantially as set forth.

2. The combination of the feed-rolls journaled in pairs, one above the other, the ratchet-wheels rigid on the inner sides of the lower rolls, the carrier having terminal pawls engaging said ratchet-wheels, the reciprocatory link, the bell-crank lever pivoted at its ends to said carrier and link, respectively, and the operating-lever connected at its heel end to said link, substantially as and for the purposes set forth.

3. In combination, the spindle C, the plate D, rigidly secured thereto and having ears F, the tray E, pivoted to said plate between said ears, the springs 2, normally maintaining the said tray in its upper position, the feed-rolls H H', journaled, respectively, in plate D and tray E, and the lever I, for depressing said tray, as set forth.

4. In combination, the plate D, having ears F, the tray E, normally maintained in its upper position and having pins 4, the lever I,

having fins 5, the pivot-pin at 3, connecting
said tray, plate, and lever, and the feed-rolls
carried by said tray and plate, the fins 5 be-
ing arranged to engage pins 4, whereby the
5 tray may be depressed against the action of
its spring-support to separate the feed-rolls
by downward pressure on said lever, as set
forth.

In testimony whereof we affix our signatures
in presence of two witnesses.

FRIEND W. SMITH, JR.
SAMUEL S. WILLIAMSON.

Witnesses:

A. T. HOLT,
F. J. LOCKWOOD.