

(No Model.)

3 Sheets—Sheet 1.

A. P. OSBORN.  
TYPE WRITING MACHINE.

No. 387,534.

Patented Aug. 7, 1888.

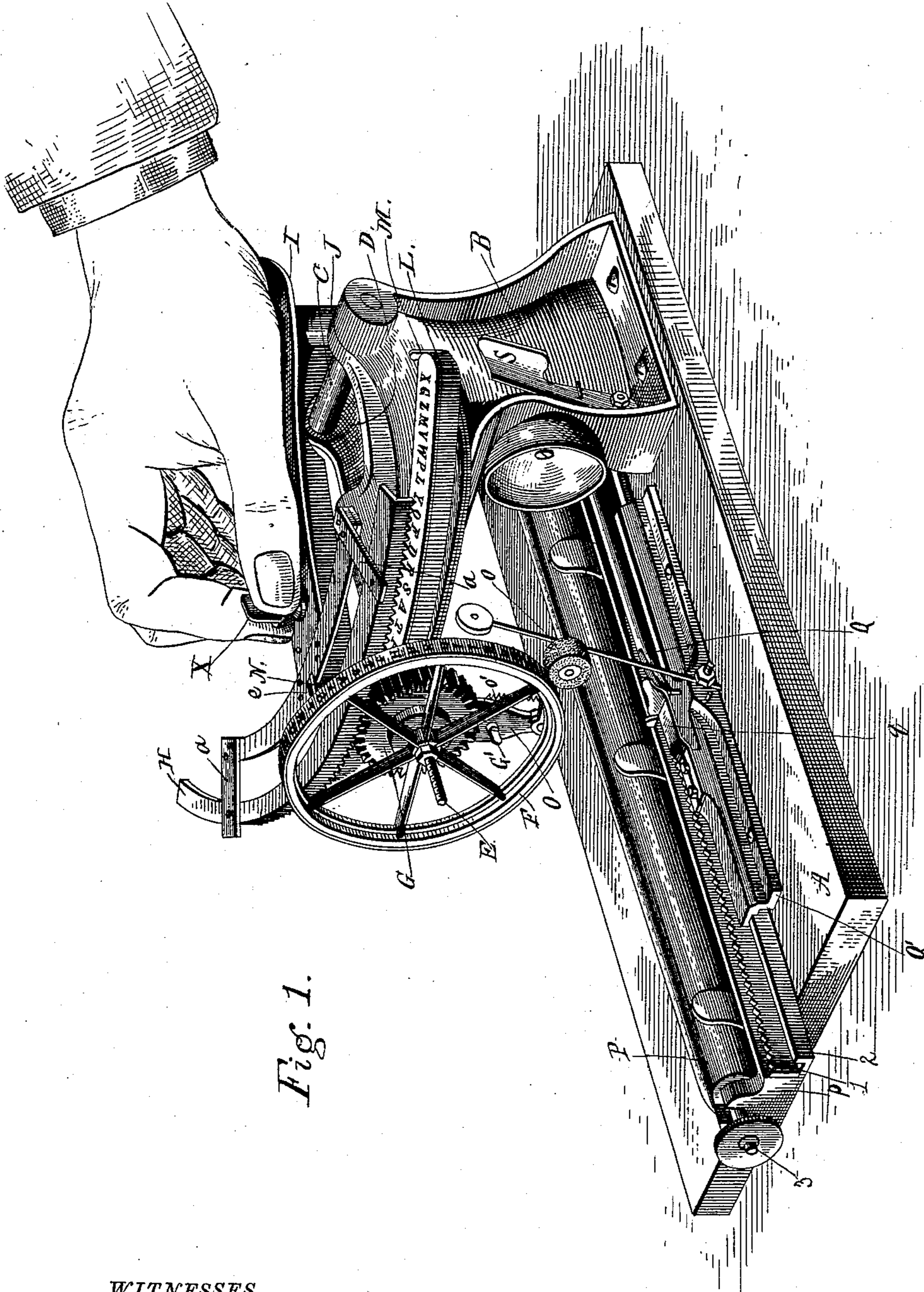


Fig. 1.

WITNESSES,  
*Edwin T. Yewell,*  
*Wm. J. Huntmann.*

INVENTOR,  
*Alvah P. Osborn.*  
*H. J. Tunis* Attorney,

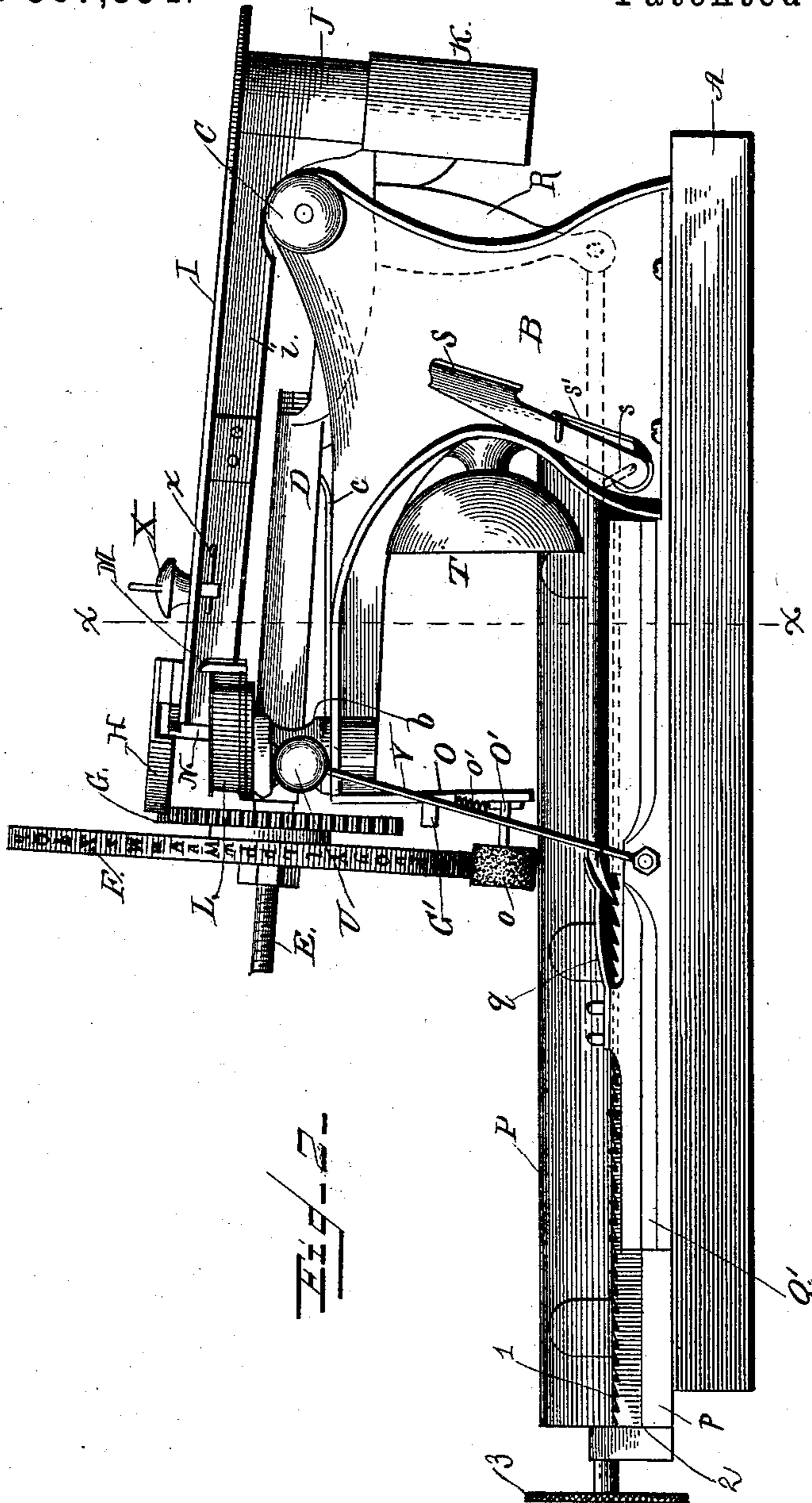
(No Model.)

3 Sheets—Sheet 2.

A. P. OSBORN.  
TYPE WRITING MACHINE.

No. 387,534.

Patented Aug. 7, 1888.



WITNESSES,  
Edwin T. Yewell,  
R. W. Bishop

INVENTOR,  
Alvah P. Osborn,  
H. J. Ems  
Attorney.

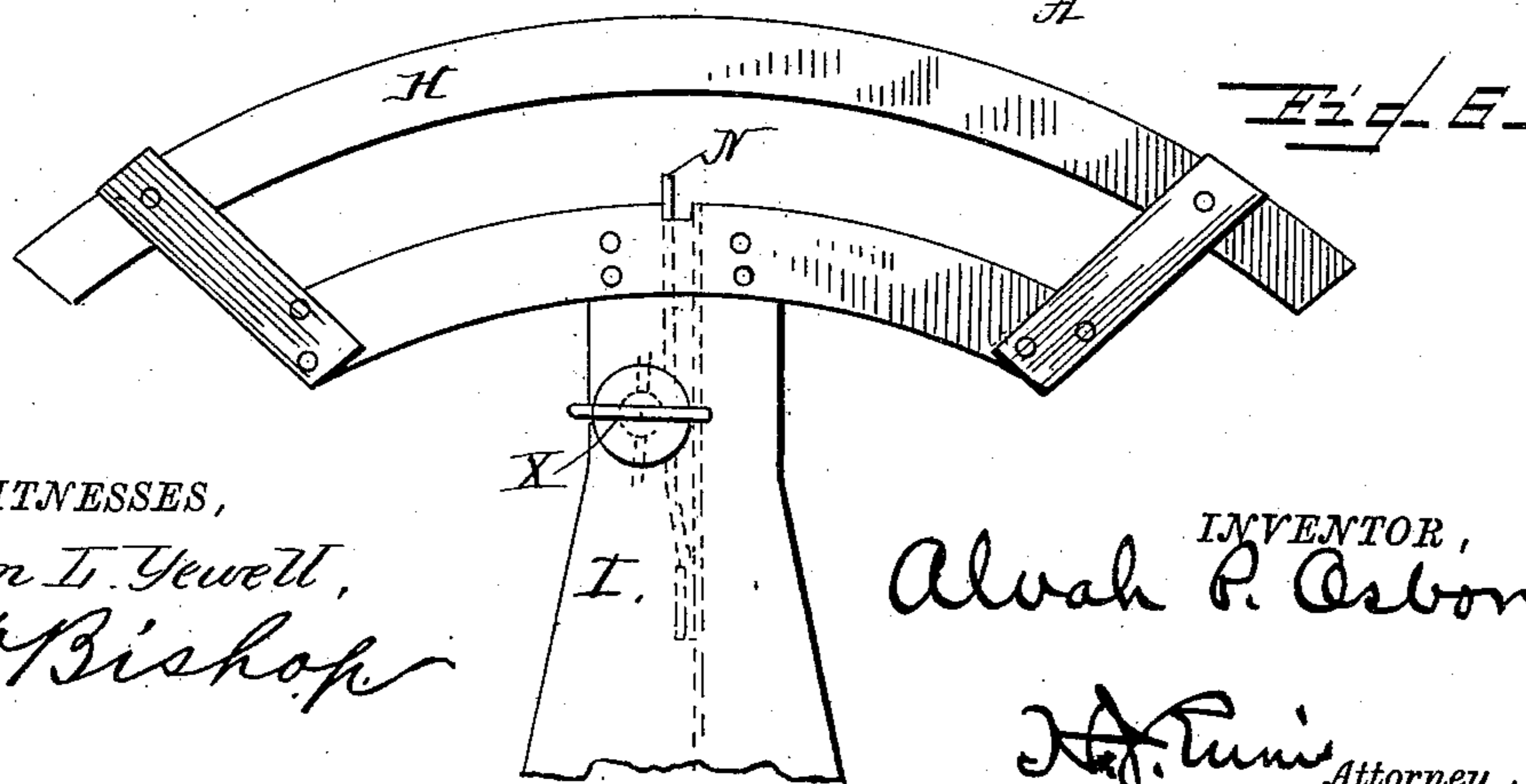
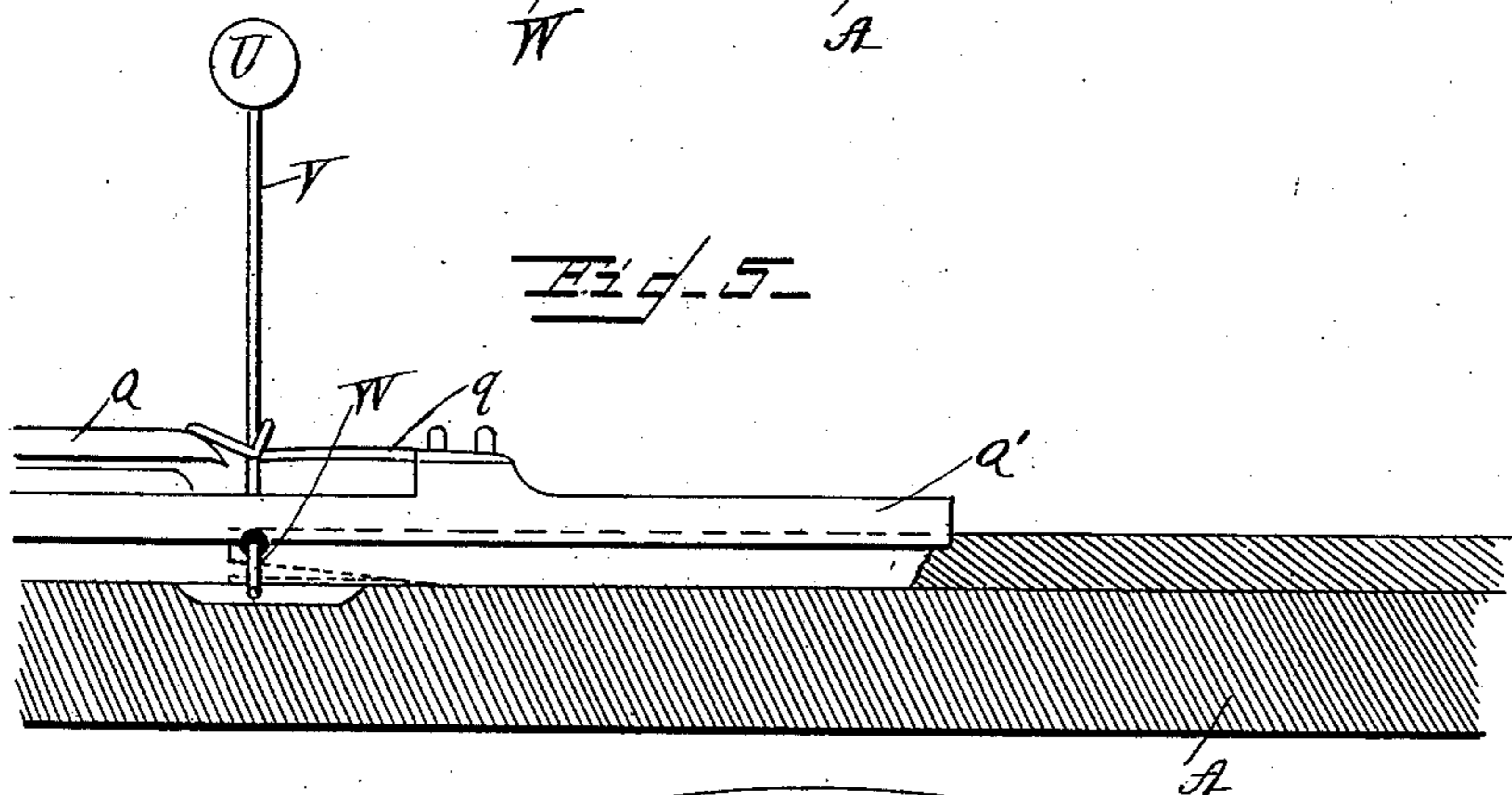
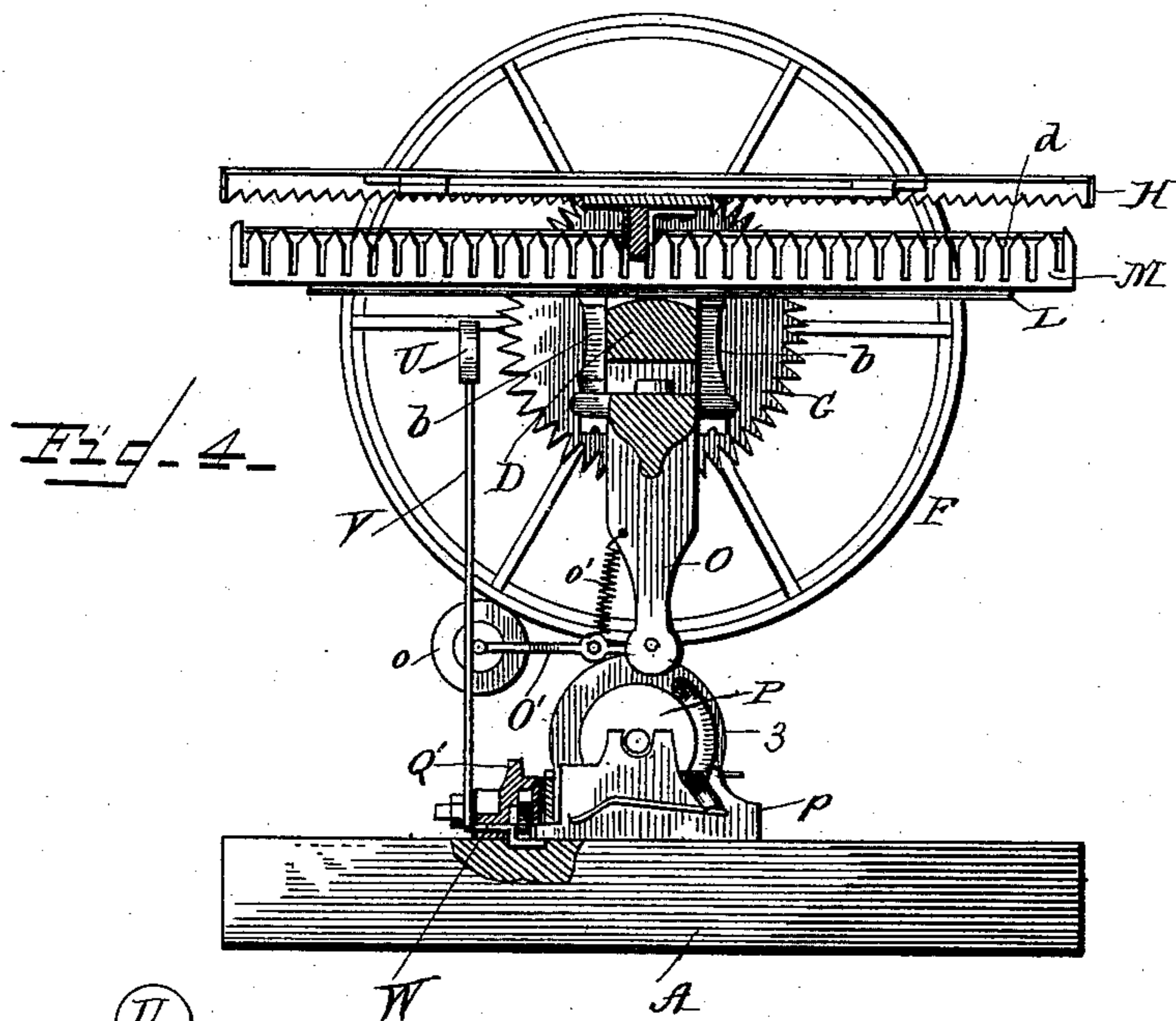
(No Model.)

3 Sheets—Sheet 3.

A. P. OSBORN.  
TYPE WRITING MACHINE.

No. 387,534.

Patented Aug. 7, 1888.



WITNESSES,  
*Edwin L. Yewell,*  
*A. H. Bishop*

INVENTOR,  
*Alvah P. Osborn,*  
*H. F. Tunn* Attorney.

# UNITED STATES PATENT OFFICE.

ALVAH P. OSBORN, OF TRUMANSBURG, NEW YORK, ASSIGNOR TO FREDRIC D. BARTO, OF SAME PLACE.

## TYPE-WRITING MACHINE.

SPECIFICATION forming part of Letters Patent No. 387,534, dated August 7, 1888.

Application filed November 23, 1886. Serial No. 219,612. (No model.)

*To all whom it may concern:*

Be it known that I, ALVAH P. OSBORN, a citizen of the United States, residing at Trumansburg, in the county of Tompkins and State of New York, have invented certain new and useful Improvements in Type-Writing Machines; and I do 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, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

This invention has relation to type-writers, and the object is to provide a simple and inexpensive device of this kind; and to these ends the novelty in the present invention consists in the combination, with the type-wheel, the dial-plate, and the operating-arm, of the indicator adjustable in a recess in the forward edge of the operating-arm and the toothed rack engaged by the indicator, as will be hereinafter more fully described, and pointed out in the claim.

In the accompanying drawings the same letters of reference indicate similar parts of the invention.

Figure 1 is a view in perspective of my improved writing-machine, showing the position of the hand as it appears when the machine is in operation. Fig. 2 is a longitudinal side elevation of the same. Fig. 3 is a plan view of a portion of the periphery of the type-wheel, showing the arrangement of the capitals, lower case, figures, punctuation-points, and other arbitrary marks used in writing. Fig. 4 is a transverse section of the machine on the line *xx* of Fig. 2. Fig. 5 is a detail of the bell or alarm mechanism; and Fig. 6 is a top plan view of the type-indicator, showing in dotted lines the switch by means of which the capitals and lower case are printed when desired.

A is the base of the machine, to the right-hand end of which is secured an upright arm, B, in the rear end of which is journaled a shaft, C, and upon this shaft is mounted a frame, D, which is provided with a freely-rotating shaft, E, upon the outer end of which is secured a type-wheel, F, to the inner side of

which is rigidly attached a gear-wheel, G. This gear G meshes with and is operated by a curved rack, H, secured to the ends *a a* of the arm I, and said arm is provided with a vertically depending shaft, J, journaled in the socket K of the frame D, so as to admit of the said arm and rack having a horizontal motion to the right and left, thereby rotating and corresponding to one complete revolution of the gear and type wheels.

The frame D has a slight vertical motion on the shaft C, and its forward end moves between the two guide-posts *b b*, which prevent any lateral motion of said frame. The normal position of this frame is up, as shown in Fig. 2, and it is held thus by the leaf-spring *c*, one end of which is secured to the top of the forward end of the arm B, while the other or free end of said spring presses against the under side of the frame D, keeping it up.

L is a removable curved dial-plate having the characters placed thereon to correspond to the arrangement of the characters on the type-wheel, and M is a curved toothed rack having slots *d* between the teeth, which correspond in number to the characters on the dial-plate L.

N is the indicator-point, consisting, as shown, of a leaf-spring secured to a depending rib, *i*, on the under side of the arm I. The indicator N extends slightly past the forward end of the arm I and engages the notches *d* in the curved rack M in the operation of the device. The upper forward corner of the indicator is provided with a small shoulder which works in a recess, *e*, in the forward edge of the arm I to set the type-wheel to print upper or lower case letters, as will be more fully referred to hereinafter.

Depending from the forward end of the arm B is a bracket, O, having a lever, O', pivoted to its lower end, and said lever O' carries an inking-roller, *o*, on its free end, the lever being so bent and of such a length that the inking-roller will be in contact with the periphery or edge of the type-wheel, and to counteract the effect of gravity and prevent the lever and inking-roller dropping away from the type-wheel I provide a spring, *o'*, having its opposite ends secured to the lever O' and the

bracket O, respectively. This spring draws the lever O' toward the bracket O, and consequently keeps the inking-roller in contact with the type-wheel.

5 I have shown the lever O' and the inking-roller as being on one side only of the bracket and type-wheel; but it will be understood that it would be mere duplication to provide them on both sides. A pin, G', is provided on the  
10 front side of the bracket O, and when the gear-wheel G is pressed downward in using the machine this pin engages the said wheel and locks the same against side movement, as will presently appear.

15 P is the paper-carrying roller, which may be of any desired length and is carried by a frame, p, sliding on the base A. The frame p is provided with a series of ratchet-teeth, 1, along one edge, which are engaged by a pawl,  
20 Q, and the frame thereby caused to glide along the base, as will be understood. The frame is kept in a straight line by means of an up-turned edge, 2, which works in a groove in the under side of a guide-plate, Q', secured to the  
25 base. The paper-carrying roller is provided with the usual means for holding the paper thereupon, and is also provided with means for turning the same after a complete line has been printed. In the present case I have shown  
30 a thumb-screw, 3, for this purpose.

The pawl Q, which engages the ratchet-teeth 1, and thereby moves the frame which carries the paper-carrying roller, is held in engagement with the said teeth by a spring, q, secured to the guide-plate Q' and bearing upon  
35 the pawl. This spring q is slotted at its point of attachment to the guide-plate, so that its tension may be adjusted as may be desired. The pawl extends back to an arm, R, depending from the frame D, to which it is pivotally  
40 secured and by which it is operated.

S is a pivoted lever having a crank-shaft, s, which extends through the arm B and under the pawl Q, the cranked portion coming directly under the pawl and acting upon the  
45 same, as will be presently described.

s' is a spring, which serves to keep the lever S in its normal position, which is that shown in Figs. 1 and 2.

50 T is a bell secured to the arm B, and U is the hammer carried by a lever, V, which is pivotally supported by a crank-shaft, W, which passes through the guide-plate Q' and under the edge of the frame p. When the end of a  
55 line has been reached, the hammer U falls upon the bell T and gives an alarm, when the operator slides the frame p back to the starting-point.

60 From the foregoing it will be seen that my machine is extremely simple and free from complication in its construction and combinations of parts, and it is thought that its operation will be as readily appreciated. The printing is done, as is obvious, by pressing the  
65 type-wheel down upon the paper carried by the roller P. This is accomplished by pressing upon the forward end of the arm I, which

serves as a hand-rest for the operator, as shown in Fig. 1. The wheel is caused to print any desired letter by turning the arm I to one side 70 or the other until the indicator N points to the proper letter on the dial-plate L. The arm I is then pressed down, causing the indicator N to enter the notch d, against which the desired letter is shown. As the arm I is vibrated from 75 side to side the rack H is carried with it, meshing with the gear-wheel G and causing it to revolve, as will be understood. The type-wheel revolves simultaneously with the gear-wheel G, and the letters are so arranged that when 80 the indicator points to a letter on the dial-plate L the same letter will be at the lowest point of the circumference of the type-wheel. As shown in the drawings, the indicator is set so that the machine will print lower-case or 85 small letters. By giving the thumb screw X a partial turn its crank-shaft x will be made to bear against the indicator and push it to the other side of the recess e, and the machine will then print upper-case or caps. The reason of 90 this is that when the indicator passes downward into the notch d the type-wheel is carried straight downward, as any side vibration will be prevented by the sides of the notch. The only way the position of the wheel can be 95 changed, therefore, is by shifting the position of the indicator, which is done as described. The letters are arranged around the type-wheel with the upper and lower case alternating, as shown in Fig. 3. The recess e is equal 100 in width to the space between the two forms of the same letter, while the spaces between the teeth on the gear-wheel G and the rack H are equal to the distance between different letters. This arrangement insures alignment, 105 and also secures the change from lower to upper case letters when the indicator is shifted. When the gear-wheel and type-wheel are pressed downward, the lowermost teeth on the gear-wheel pass on opposite sides of the pin 110 G' and the gear-wheel is consequently locked against rotation between the said pin and the curved rack H. This prevents the rotation of the type-wheel after it has touched the paper and the consequent blurring of the letter 115 printed. The arm R, depending from the frame D, forms an integral part of said frame, and consequently when the frame is depressed the arm will be swung backward, carrying the pawl Q with it. When the pressure on the 120 frame is relieved, the spring c throws it upward, and the arm R swings forward, communicating its motion to the pawl Q, which engages the ratchet-teeth 1 and shoves the frame and paper-carrying roller forward. 125 When the line has been completed, and it is desired to push the roller back in position to print another line, the lever S is thrown down and the crank-shaft s is turned up against the pawl Q, throwing it up out of engagement 130 with the ratchet-teeth. The paper-carrying roller is then pushed back to the starting-point and the lever S released, allowing the pawl to engage the ratchet-teeth. While the

machine is being operated the frame *p* rests upon the crank-shaft *W* and prevents its turning. The lever *V*, which carries the bell-hammer *U*, is inclined toward the bell *T*, and consequently tends to fall upon the same by reason of the force of gravity. This tendency is overcome by the frame *p*, resting upon the crank-shaft *W*; but as soon as the frame has passed the crank-shaft the pressure thereon is removed, and the hammer consequently falls upon the bell, sounding an alarm and notifying the operator that the end of the line has been reached. The paper-carrying roller is then pushed back to the starting-point, and the machine is operated, as described, to print another line. The end of the frame *p* is beveled on its under side, as shown in dotted lines, Fig. 5, so as to ride over the upturned crank-shaft *W* and force the bell-hammer back to its raised position.

In order to print letters other than the ordinary Roman, it is only necessary to remove the type-wheel and substitute one carrying the desired style of letter. In case a wheel is used carrying the letters used in a foreign language which does not use the English letters—

such as the Greek or Russian—the dial-plate *L* must be removed and replaced by one bearing the alphabet corresponding to the one on the type-wheel. These changes can be readily accomplished, as the parts are easily gotten at, as will be readily understood from the drawings,

I do not claim the type-wheel in the present application, but reserve the right to make that feature the subject-matter of a separate application.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

The combination, with the type-wheel, the dial-plate, and the operating-arm, of the indicator adjustable in a recess in the forward edge of the operating-arm, and the toothed rack *M*, engaged by the indicator, substantially as specified.

In testimony whereof I affix my signature in presence of two witnesses.

ALVAH P. OSBORN.

Witnesses:

FRED. D. BARTO,  
R. VERNAM BARTO.