

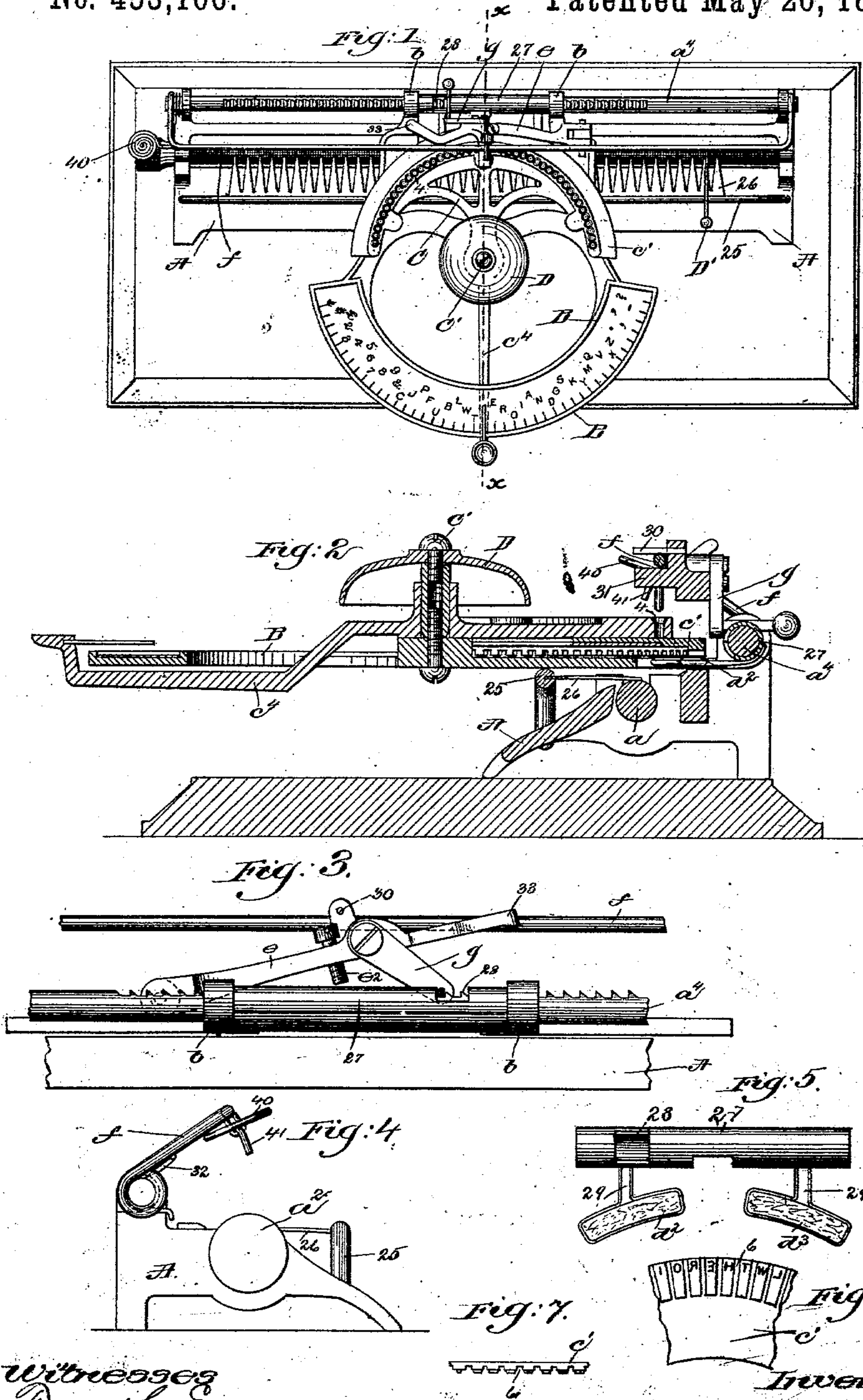
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(No Model.)

J. BECKER.  
TYPE WRITING MACHINE.

No. 453,166.

Patented May 26, 1891.



Witnesses  
Fred L. Emery  
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Inventor  
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attys.

# UNITED STATES PATENT OFFICE.

JOHN BECKER, OF BOSTON, MASSACHUSETTS, ASSIGNOR, BY MESNE ASSIGNMENTS, TO THE POPE MANUFACTURING COMPANY, OF SAME PLACE.

## TYPE-WRITING MACHINE.

SPECIFICATION forming part of Letters Patent No. 453,166, dated May 26, 1891.

Application filed September 3, 1886. Serial No. 212,577. (No model.) Patented in England October 12, 1886, No. 12,960; in Germany October 13, 1886, No. 41,127; in Austria-Hungary August 19, 1887, No. 9,034 and No. 31,660; in Canada March 7, 1887, No. 26,157, and in France March 21, 1887, No. 182,323.

*To all whom it may concern:*

Be it known that I, JOHN BECKER, of Boston, county of Suffolk, and State of Massachusetts, have invented an Improvement in Type-Writing Machines, (patented in Great Britain, No. 12,960, dated October 12, 1886; in Germany, No. 41,127, dated October 13, 1886; in Austria-Hungary, No. 9,034 and No. 31,660, dated August 19, 1887; in France, No. 182,323, dated March 21, 1887, and in Canada, No. 26,157, dated March 7, 1887,) of which the following description, in connection with the accompanying drawings, is a specification, like letters and figures on the drawings representing like parts.

This invention has for its object to improve the construction of type-writers of the class shown and described in United States Patent No. 350,717, dated October 12, 1886, granted to me.

In accordance with this invention a comb-like presser-bar is employed to hold the paper upon the feed-roll. The inking-pads are attached to a sleeve mounted to move freely upon the ratchet-toothed feed-bar in unison with the printing devices, the said sleeve being cut away at its upper side to permit the feed-dog to engage the teeth of the ratchet-toothed bar to effect the step-by-step feeding of the printing devices. The rubber segment attached to the type-carrying segment pivoted to the index-plate has upon its under side a series of projecting type separated by deep grooves, in order that as the rubber segment carried by the type-segment is acted upon by the pivoted printing-lever each type may operate independent of its neighbor to print upon the paper. The spacing-stop herein shown consists of a spring-arm attached to the end of a rocking lever near that portion thereof which is touched by the hand of the operator when depressing the said lever, such position of the spacing-stops rendering it readily accessible. The bell to indicate the completion of each line is located upon the carriage in position to be struck by a positively moved bell-hammer actuated by the rocking lever.

Figure 1 shows in top view a type-writer embodying this invention; Fig. 2, a cross-section

of Fig. 1, taken on the dotted line *xx*; Fig. 3, a rear side view of a portion of Fig. 1, showing the pivoted printing-lever and the sleeve carrying the independent pads; Fig. 4, a left-hand end view of the machine, the carriage comprising the printing devices being omitted; Fig. 5, a detail of the independent pads; Fig. 6, an enlarged detail of a portion of the rubber segment; and Fig. 7, an edge view of Fig. 6, to show the deep grooves in the rubber segment between the types.

The main frame A, feed-roll *a*, index-plate B, having attached guides or arms *b* mounted to slide freely upon the ratchet-toothed bar *a'*, the type-carrying segment C, pivoted at C' to the index-plate B, and having an operating-lever *c'*, the rubber-segment *c'*, attached to the type-carrying segment C, and having upon its under side a series of projecting type, the series of holes 4 bored in the type-carrying segment to receive a pin attached to the printing-lever *e*, pivoted to the index-plate, the feed-dog *g*, loosely attached to the printing-lever *e*, and engaging the teeth of the ratchet-toothed bar *a'*, the rocking lever *f*, extending lengthwise of the machine and connected loosely with the ratchet-toothed bar *a'* as its support, are all substantially as in the patent referred to, so need not be herein further described.

The feed-roll *a*, having its bearings in the main frame-work A of the machine, has a milled surface and at one end a thumb-nut *a''*, by which to rotate it by hand when desired. A rod 25, extending lengthwise of the machine, parallel with the feed-roll *a*, is provided for its entire length with spring-fingers 26, which by their action upon the paper to be printed upon keep the said paper closely in contact with the feed-roll, the said bar and fingers constituting a presser and insuring the accurate movement of the paper with the feed-roll.

The ratchet-toothed feed-rod *a'* (see Figs. 1 and 5) is surrounded between the guide-arms *b* of the index-plate B by a pad-carrying sleeve 27, which slides on the said rod *a'* in unison with the index-plate as the latter is moved by hand. The sleeve 27 is cut out at

its upper side for a short distance, as at 28, (see Fig. 3,) to permit the pivoted feed-dog *g* to pass through the sleeve and engage the teeth of the ratchet-toothed bar *a*<sup>1</sup>. Two independent inking-pads *d*<sup>2</sup> *d*<sup>3</sup> are rigidly connected with the said sleeve 27 near each end by arms 29, said arms being of sufficient length to enable the said inking-pads to be placed under the rubber segment carrying the type, the pads being left in such position as to be struck by some of the projecting type of the said rubber segment *c* when the latter is depressed. The inking-pads *d*<sup>2</sup> *d*<sup>3</sup> are also located some little distance apart to leave sufficient space between the said inking-pads to enable the type on the type-segment to be forced against the paper to be printed.

The rubber segment *c*<sup>1</sup>, carrying the type, is provided (see Figs. 6 and 7) with a series of deep grooves 6, which separate the type one from the other, such separating-grooves enabling that one type of the segment immediately below the stud *e*<sup>2</sup>, attached to the printing-lever *e*, to be forced down upon the paper without at the same time forcing downward against the paper other type adjacent to the one selected as next to print a letter.

The rocking lever *f*, loosely connected with the ratchet-toothed bar *a*<sup>1</sup>, which serves as a bearing for it, passes between two projections 30 31, extending from the pivoted printing-lever *e*, so that as the said rocking lever *f* is depressed the printing-lever *e* will also be depressed, a spring 32, introduced between the frame and rocking lever *f* at one end, acting to raise the said lever and the printing-lever *e* when the hand is removed.

The rocking lever *f*, which operates the printing-lever *e*, is provided at one end with a yielding projection or finger-piece 40, having a downwardly-projecting pin or stud 41, which co-operates with a stop. (Shown in this instance as the milled head of the thumb-nut *a*<sup>2</sup>.) When the lever *f* is depressed by the action of the finger on the said finger-piece 40, the lever *e* is depressed only far enough to compel the feed-dog *g* to move the carriage, thus forming the spacing; but when the said lever *f* is depressed by the action of the finger directly upon it the movement imparted to the lever *e* is sufficient to not only move the index-plate, but also to cause the stud *e*<sup>2</sup> to depress the rubber segment far enough to

print; but to prevent too great descent of the said stud *e*<sup>2</sup> and lever *e* I have provided the said lever *e* with a projection 33, which during its descent strikes one of the guide-arms *b*.

In practice it has been found that a spacing-stop located at the left-hand end of the regulating-lever is much more readily accessible than when connected with the printing-lever, as it is with the left hand that the machine is desired to be operated.

A bell *D* is herein provided for audibly indicating to the operator when a line is nearly completed, such bell *D* being herein located upon the pivoted type-carrying segment, the bell-hammer *D*<sup>1</sup> being attached by a yielding arm to the rocking lever *f* at or near its right-hand end, so that as the bell moves from the left to the right with the index-plate in printing a line it will be struck by the hammer *D*<sup>1</sup> just at or before the line is completed. It is obvious that the bell may be otherwise arranged than that herein described without departing from this invention—such, for instance, as reversing the arrangement herein shown.

I claim—

1. In a type-writer, the index-plate and type-carrying segment pivoted thereon, the guide-arms *b*, and ratchet-toothed feed-bar *a*<sup>1</sup>, combined with the sleeve 27, mounted upon said feed-bar between the guide-arms and independent inking-pads carried by said sleeve, and a pivoted printing-lever, all substantially as and for the purposes set forth.

2. In a type-writer, the pivoted printing-lever and rocking lever *f* for moving the printing-lever, and the stop 33 for limiting the downward movement of the printing-lever, combined with the spring-arm 40, attached to the said rocking lever, said arm having a projection 41 or equivalent for limiting by striking the thumb-nut *a*<sup>2</sup> the downward movement of the rocking lever when the latter is depressed by the operator acting upon only the arm 40, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOHN BECKER.

Witnesses:

BERNICE J. NOYES,  
FRED L. EMERY.