

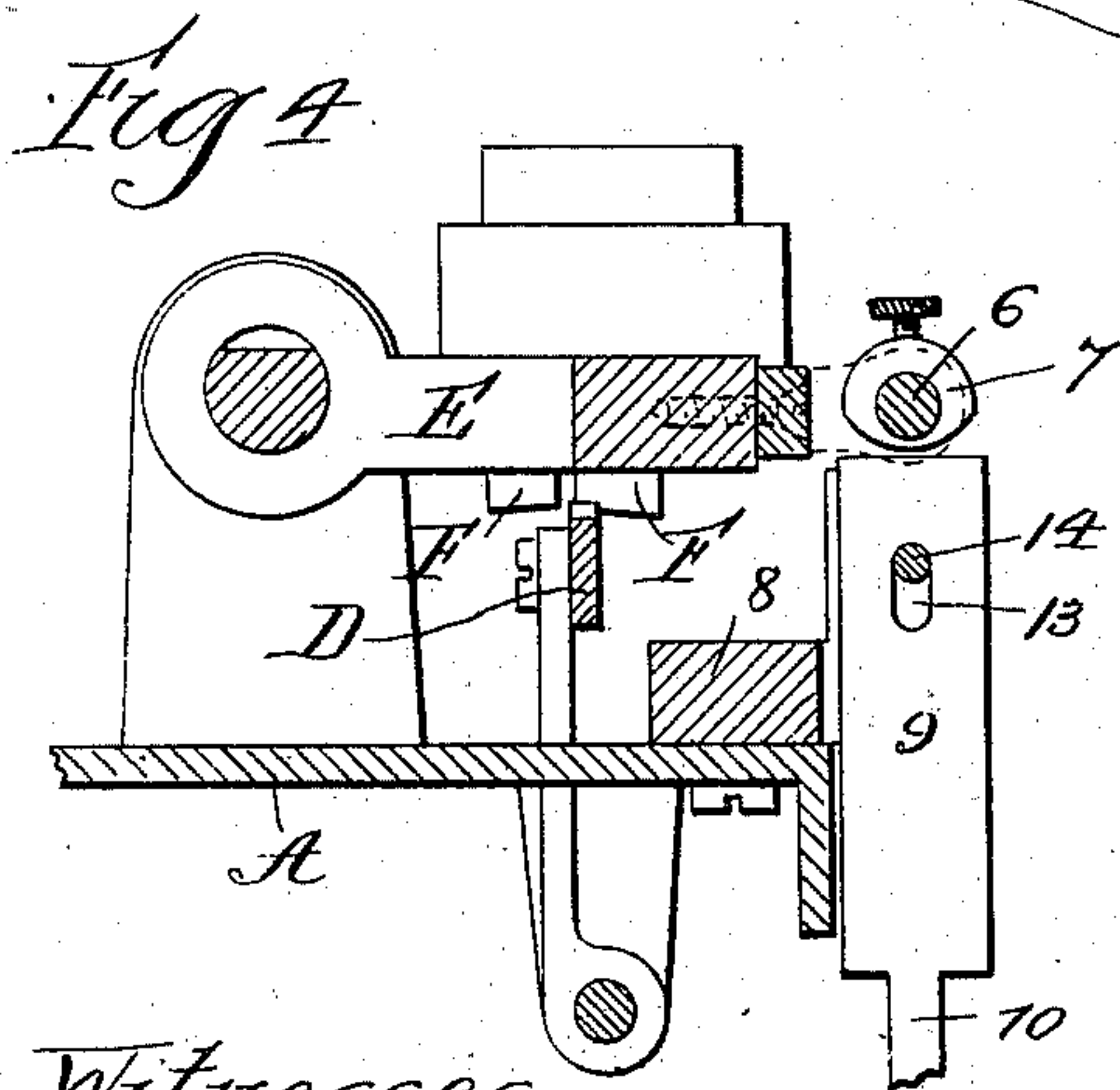
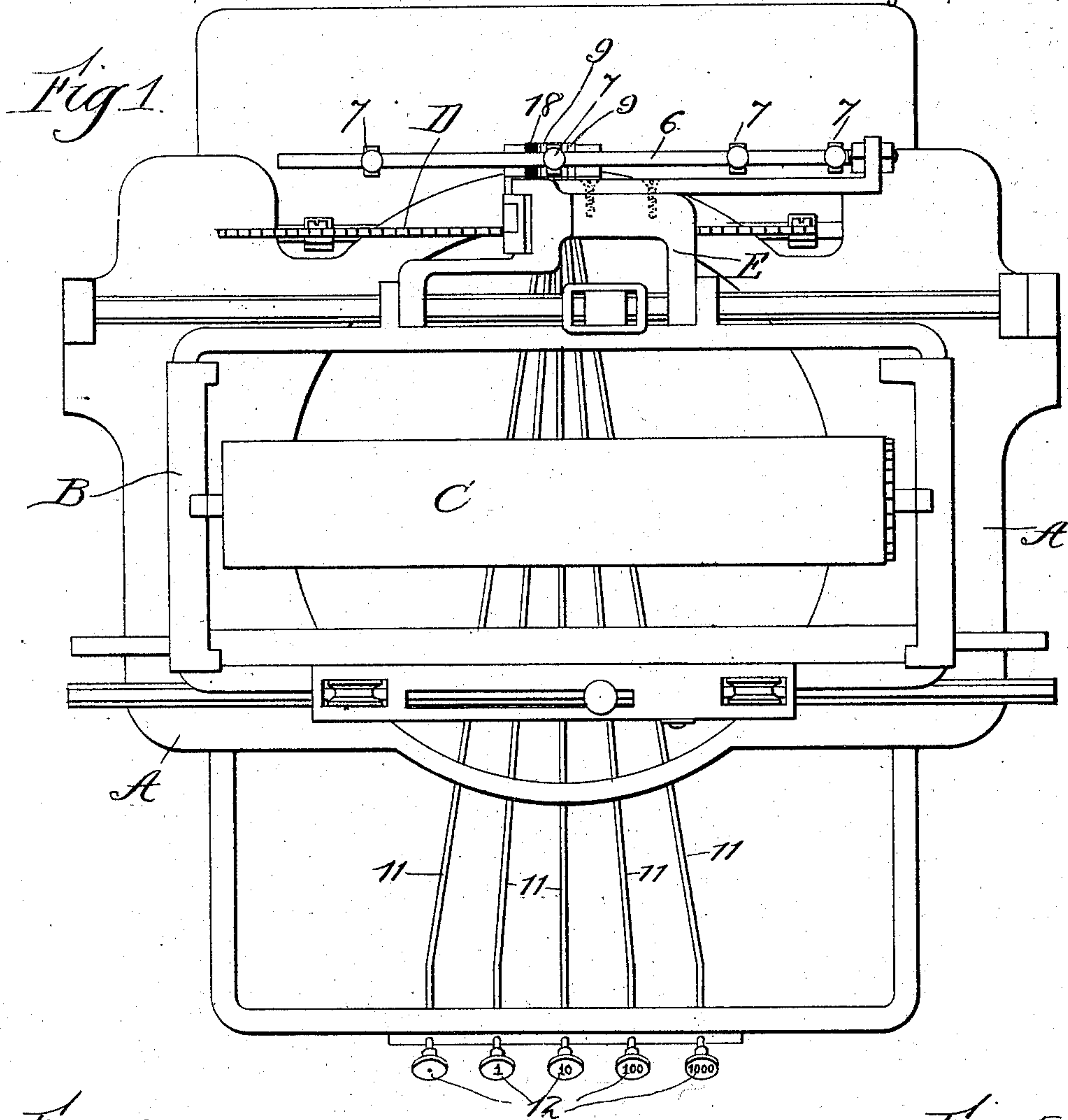
(No Model.)

2 Sheets—Sheet 1.

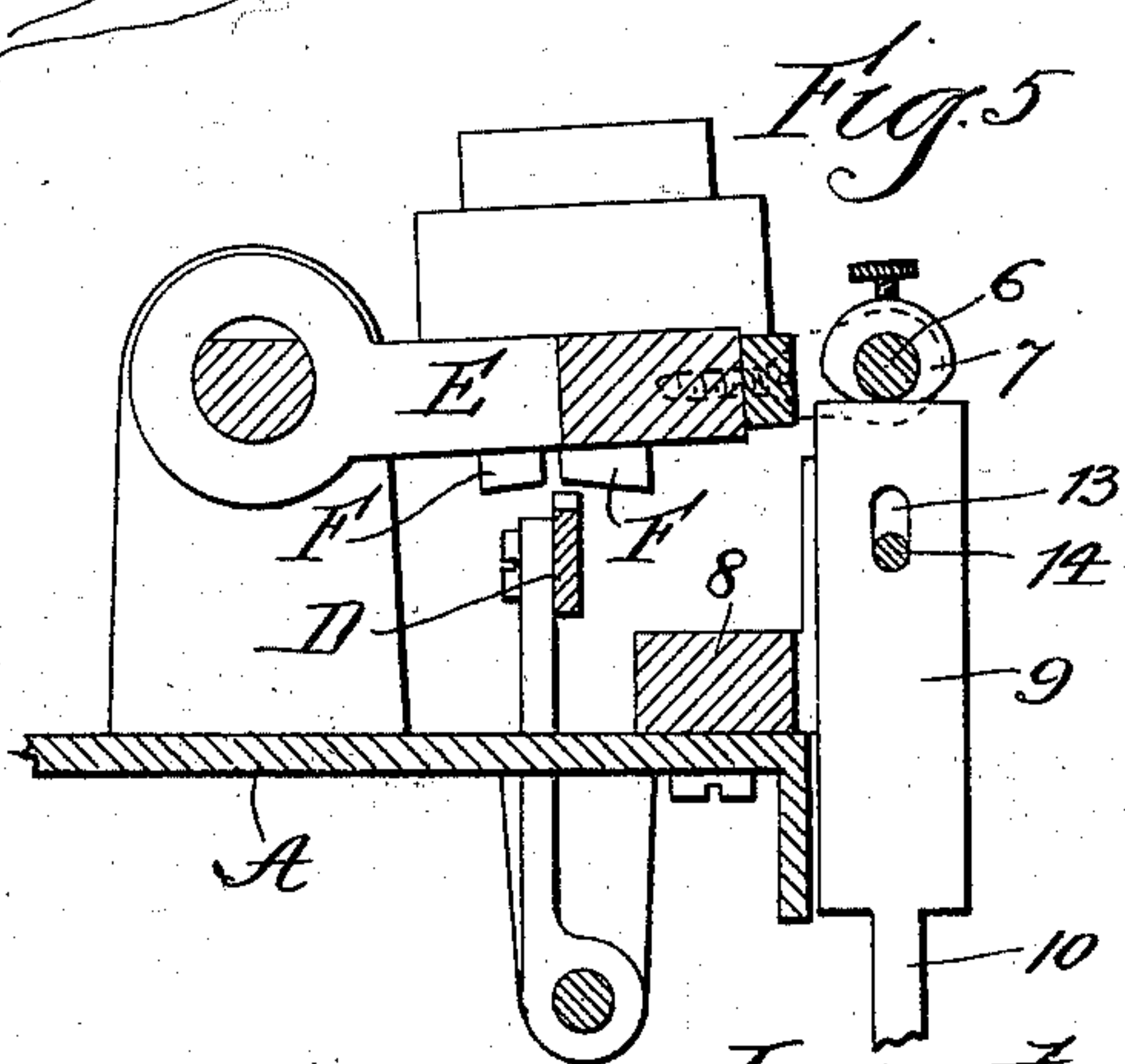
F. P. GORIN.
TYPE WRITING MACHINE.

No. 559,449.

Patented May 5, 1896.



Witnesses
Wm J. Fleming
S. M. Rheem

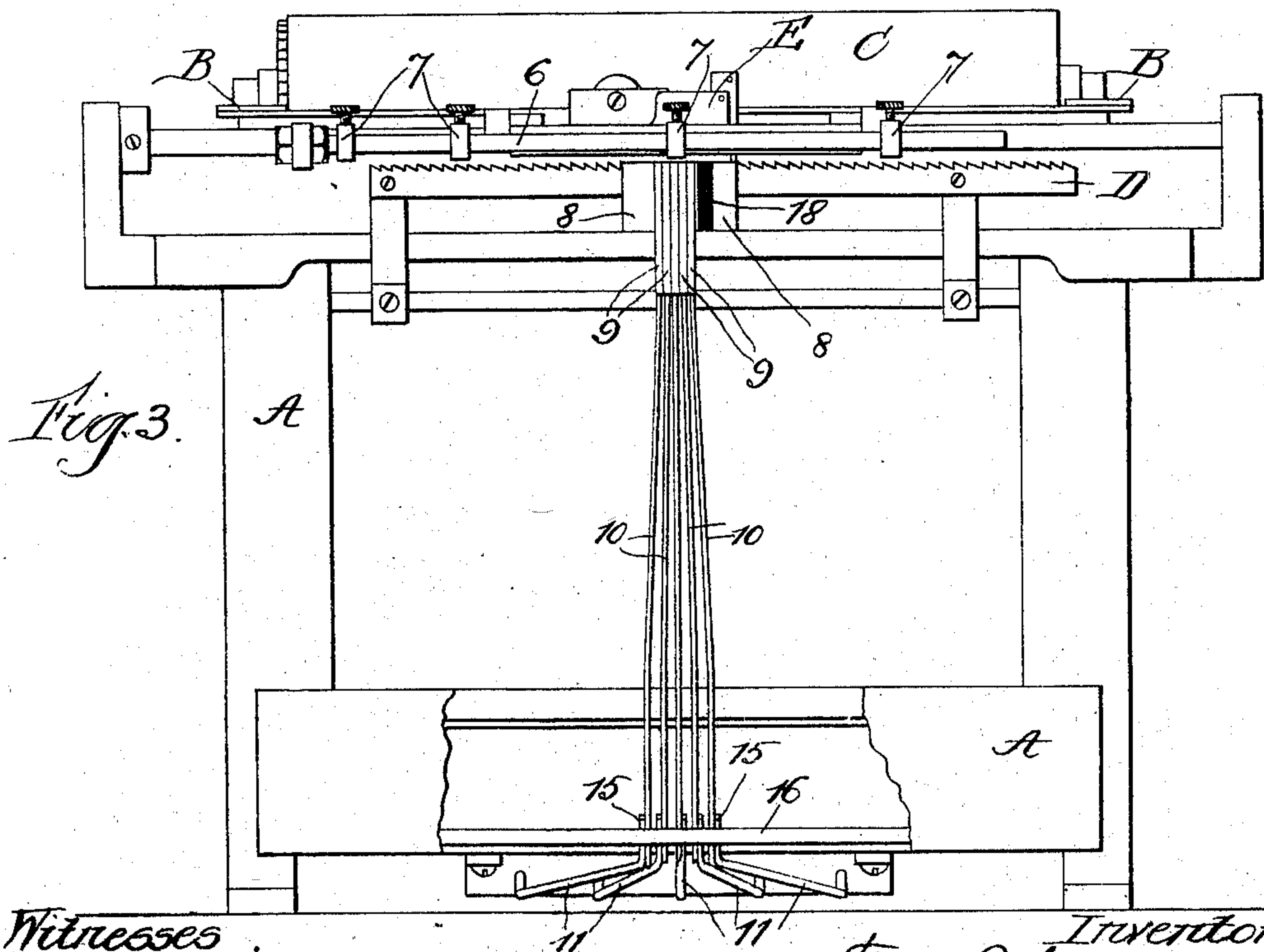
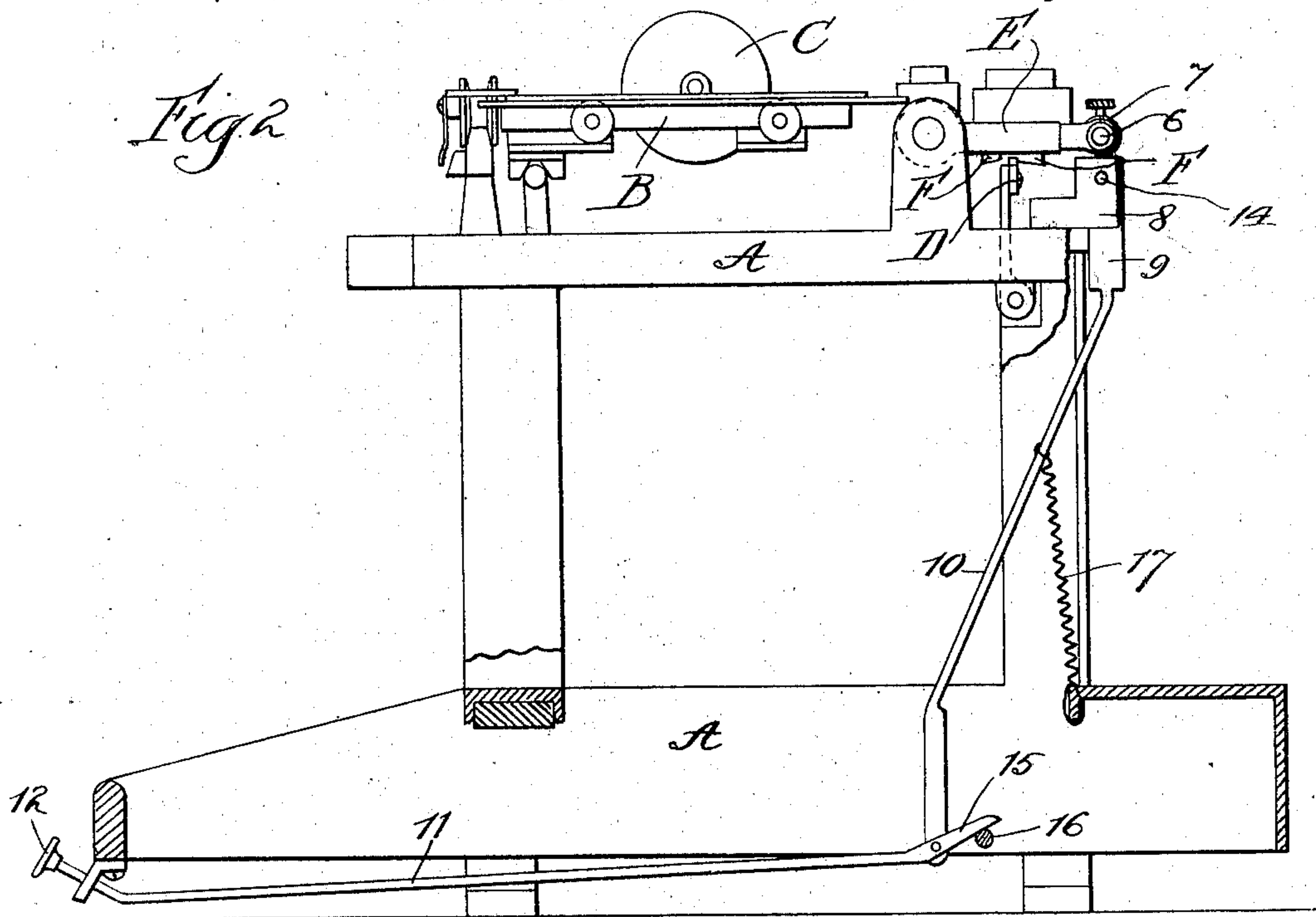


Inventor
Fred P. Gorin
by Brown & Darby Attys.

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UNITED STATES PATENT OFFICE.

FRED P. GORIN, OF CHICAGO, ILLINOIS, ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, TO GORIN & CO., OF SAME PLACE.

TYPE-WRITING MACHINE.

SPECIFICATION forming part of Letters Patent No. 559,449, dated May 5, 1896.

Application filed June 3, 1895. Serial No. 551,466. (No model.)

To all whom it may concern:

Be it known that I, FRED P. GORIN, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Type-Writer, of which the following is a specification.

This invention relates to improvements in type-writing machines.

The object of the invention is to provide a spacing attachment for type-writing machines of simple and improved construction, easily understood and operated, and efficient in operation.

The invention consists, substantially, in the construction, relative arrangement, location, and combination of parts, all as will be more fully hereinafter set forth, shown in the accompanying drawings, and finally pointed out in the appended claims.

Reference is had to the accompanying drawings and to the various views and reference-signs appearing thereon, and wherein—

Figure 1 is a plan view of the essential features of the frame of a type-writing machine, showing the spacing attachment forming the present invention applied thereto. Fig. 2 is a side elevation of the same, parts of the type-writer frame being in vertical transverse section. Fig. 3 is a rear elevation of the construction shown in Figs. 1 and 2, parts being broken away. Fig. 4 is a detail sectional view showing the relative arrangement of the spacing-plungers and stops and the pivoted bar carrying the ratchet-feed teeth. Fig. 5 is a view similar to Fig. 4, showing the pivoted bar elevated by the operation of the spacing attachment out of engagement with the feed-rack bar.

The same part is designated by the same reference-sign wherever it occurs throughout the several views.

Reference-sign A designates the frame of the type-writing machine; B, the paper-feed carriage; C, the feed-roll; D, the carriage-feed rack-bar, and E the pivoted bar carrying the carriage-feed ratchet-teeth F. These several parts may be of the usual or any suitable, convenient, or well-known form of construction and arrangement and form no part of the present invention.

Bolted or otherwise suitably secured to bar

E to move therewith is an arm 6, adapted to receive thereon the adjustable stops 7. The arm 6 is arranged to extend over a block or casing 8, suitably bolted or otherwise secured to the framework A, and in which are mounted sliding plungers or plates 9, carried by or forming part of rods 10, pivotally or otherwise suitably connected to the key-bars 11, conveniently arranged to extend to the front of the machine and carrying the keys 12. Each plunger or plate is provided with an elongated slot 13, through which a guiding-pin 14 is arranged to pass to guide the plungers in their movement and to limit the amount of movement or projection thereof.

The arrangement of the plungers 9 relatively to arm 6 is such that when any one of the plungers is projected from its normal or retracted position it will engage said arm and elevate it, thereby rocking the bar E, and hence disengaging the ratchet-teeth F from the carriage-feed rack-bar D and permitting the carriage to move under the action of its controlling-spring.

I will now describe the manner of projecting the plungers 9 in the guiding-casing 8.

The inner ends of key-bars 11 are provided with an upwardly-inclined portion 15, arranged to bear against a suitable guide 16. When said key-bars are actuated, as by manipulating the keys 12, the inclined portion 15 rides over the guide 16 and elevates the inner end of the key-bar, and through the connection between said key-bars and the plunger-bars 10 the plunger-bars are projected endwise, and with them the plungers 9 are projected or elevated in position to engage and elevate arm 6, thereby disengaging the carriage-feed. Suitably-arranged springs may be employed to maintain and return the plunger-rods and plungers in normally-retracted position.

While I have shown and described a specific form of mechanism for effecting a movement of the plungers 9 from the key-bars 11, I desire it to be distinctly understood that I do not limit myself, as any ordinary or well-known form of construction may be employed, and many variations and modifications in details of construction and arrangement thereof would readily suggest them-

selves to persons skilled in the art and still fall within the spirit and scope of my invention.

It will be seen from the foregoing description, taken in connection with the accompanying drawings, that the keys 12, key-bars 11, plunger-rods 10, plungers 9, and arm 6 constitute an auxiliary attachment to the type-writer, and said parts are supplementary to the usual parts of the ordinary type-writer. A convenient arrangement of the auxiliary or supplemental keys 12 is shown, where said keys are arranged in front of the machine outside the frame and below the space for the ordinary keyboard.

The mechanical operation of the attachment will be fully and clearly understood from the foregoing description.

The spacing attachment constituting the present invention is particularly adapted to and effective in securing speed and accuracy in tabulated work, where it is desirable to write columns of words or figures. In the case of columns of figures, for instance, it is important that all units in a column shall fall under each other in a vertical line, and similarly with tens, hundreds, thousands, tenths, hundredths, thousandths, or other denominations, it being understood that as many auxiliary or supplementary keys and plungers are employed as may be necessary to adapt the range of action of the machine to recording numbers of any desired denomination. To illustrate the action and set forth the manner of use of the present invention, suppose it is desired to write a column of figures of various denominations with all the units falling under the usual spacing-mark "30" of the machine. Heretofore it has been the practice of the operator to run the paper-carriage down either by hand or automatically till the index-finger registers with the spacing-mark "30" to record the unit. Now suppose on the next line it is desirable to record a number of the denomination of tens. The operator then runs the paper-carriage down, usually with the ordinary spacing-key, until the index-finger registers with the spacing-mark "29," or else by an automatic spacing mechanism the carriage is moved to the point "30" of the scale and then by hand to the point "29." In case a number of denominations of hundreds is to be recorded in the next line of the column the carriage is moved down to number "28" of the spacing-scale by the ordinary spacing mechanism or else automatically to the point "30" and then by hand to "28," and so on. This consumes time and requires care and skill on the part of the operator.

In the use of the spacing attachment above described for performing the operations above referred to the operator first determines at what point the units of the column should be arranged. He then operates the units-key 12 to project its plunger into contact with arm 6. The paper-carriage is then moved until

its spacing-index registers with the predetermined point. A stop 7 is then adjusted upon arm 6 to abut against the projected end of the plunger, and is there secured in position. Now when the operator desires to write a number of unit denominations with the units falling under the "30" mark of the spacing-scale, after the carriage is returned to its initial or starting position, he actuates the auxiliary or supplementary units-key, thereby projecting the plunger into contact with arm 6, thereby elevating said arm and with it the pivoted bar E, and hence disengaging the carriage from its feed-rack. The carriage thereupon moves under the influence of its actuating-spring until the stop upon rod 6 abuts against the projected end of the plunger. The plunger-key is then released thereby, again engaging the carriage-feed ratchet-teeth with the feed-rack bar. In order that the impact of the stop against the plunger may be cushioned, I provide a rubber block 18, interposed between the wall of the casing 8 and the last plunger in the direction of feed of the carriage, as shown. If on the next line it is desired to write a number in the same column of the denomination of tens, the operator manipulates the tens-key, thereby projecting the corresponding plunger and releasing the carriage-feed, the plunger acting as a stop for the carriage by receiving the impact of the stop on the arm 6. Similarly numbers of other denominations are recorded in the same column in succeeding lines, the units under the units, the tens under the tens, the tenths under tenths, and so on. It will be understood that each plunger is of a thickness corresponding to one letter-space of the ordinary feed, and hence when the stop 7 is once adjusted, say, to the vertical line of units, by actuating the tens-key of the spacing attachment the paper-feed carriage is released from its ordinary feed mechanism and is arrested one space in advance of the units-space, or at "29" of the spacing-scale in the example above given, by the stop coming in contact with the plunger actuated by the tens-key. In a similar manner when the hundreds-key is manipulated the carriage is arrested two spaces in advance of the units place, and when the tenths-key of the spacing attachment is manipulated the carriage is arrested one space beyond the units place, and so on, the carriage always being arrested when once properly adjusted without further attention, care, or manipulation on the part of the operator by the actuation of the proper one of the auxiliary or supplemental keys and at the proper place to record the word or figure at the proper predetermined position in the vertical column.

By providing additional stops upon arm 6, each one properly adjusted to the desired position relative to the length of travel of the paper-feed carriage, as many vertical columns of figures or words may be written on a single sheet as may be desired, the number

of columns being limited only by the range of travel of the paper-feed carriage and the width of the paper employed, and any desired relative arrangement of the columns may be provided as may be previously determined upon by suitably adjusting the relative positions of the stops. For instance, one vertical column may be arranged with units all falling under the "10" mark of the spacing-scale, another on the same sheet of paper with the units all falling under the "20" mark of the scale, and so on.

While I have shown and described a specific form of mechanism for securing the accurate and expeditious automatic spacing as above explained, I do not desire to be limited or restricted to the specific details shown and described, for obviously the principle involved may be embodied in a wide variety of specific forms of apparatus and still fall within the spirit and scope of the generic invention; but,

Having explained the object and nature of my invention and a form of apparatus embodying the same, and having explained the principle and mode of operation thereof, what I claim as new and of my own invention, and desire to secure by Letters Patent of the United States, is—

1. A spacing attachment for type-writers, comprising a series of auxiliary keys, each key arranged to disengage the carriage from its feeding mechanism and to arrest the same at a different distance from a predetermined point, whereby the carriage is automatically arrested in position to record in uniform columns numbers of varying denominations; as and for the purpose set forth.

2. A spacing attachment for type-writers, comprising a series of auxiliary keys, means actuated by each of said keys for disengaging the carriage from its feeding mechanism, said means adapted to arrest the carriage at varying distances from a predetermined point, whereby the carriage is moved automatically and by a single operation into position to uniformly columnate numbers of varying denomination; as and for the purpose set forth.

3. A spacing attachment for type-writers, comprising a stop upon the carriage, a series of auxiliary keys, arranged when manipulated to disengage the carriage from its feeding mechanism and to engage said stop, whereby said carriage is automatically released and arrested by a single operation at different distances from the predetermined position of said stop, to uniformly columnate numbers of varying denominations; as and for the purpose set forth.

4. In combination with a paper-feed carriage of a type-writing machine and its step-by-step feeding mechanism, a spacing attachment comprising a series of auxiliary keys, a series of plungers arranged a letter-space distance apart actuated thereby, each of said plungers when actuated adapted to engage

and release said feeding mechanism, and a stop carried by said carriage and adapted to be adjusted to a predetermined position, said stop adapted to impinge against said plunger to arrest at the predetermined point the movement of said carriage, when it is released from its feeding mechanism by said plunger; as and for the purpose set forth.

5. In a type-writer a paper-feed carriage, a step-by-step feeding mechanism therefor, a spacing attachment comprising a series of auxiliary keys, a series of plungers actuated thereby, said plungers arranged a letter-space distance apart, and each adapted, when actuated, to engage and release said feeding mechanism, a series of adjustable stops carried by said carriage, adapted to impinge against the plungers to arrest at predetermined points the movement of said carriage when released by said plungers; as and for the purpose set forth.

6. In a type-writer a paper-feed carriage, a step-by-step feed mechanism therefor, an arm carried thereby, a series of auxiliary keys, a corresponding series of plungers actuated thereby, and each arranged when actuated to engage said arm and to release said step-by-step feed; as and for the purpose set forth.

7. In a type-writer, a paper-feed carriage, a step-by-step feed therefor, an arm carried thereby, a series of auxiliary keys, a corresponding series of plungers actuated thereby each adapted to engage said arm and release said step-by-step feed, an adjustable stop carried by said arm, adapted to engage said plunger and arrest the movement of said carriage at a predetermined point when it is released from said feed; as and for the purpose set forth.

8. In a type-writer a paper-feed carriage, a step-by-step feed therefor, a series of auxiliary keys, a corresponding series of plungers actuated by said keys, each adapted to release said feed mechanism, a stop mounted upon said carriage, adapted to impinge against said plunger to arrest the movement of the carriage when released from its feed, and a cushion adapted to relieve the force of the impact; as and for the purpose set forth.

9. In a type-writer, a framework, a casing mounted thereon, a series of plungers mounted to slide in said casing, a series of keys, each connected to and adapted to actuate one of said plungers, a paper-carriage and a feed mechanism therefor, said feed mechanism adapted to be engaged and released by said plungers when actuated, and a stop for arresting the carriage at a predetermined point when released; as and for the purpose set forth.

10. In a type-writer a framework, a casing mounted thereon, a series of slotted plungers mounted to slide in said casing, a guiding-pin arranged to pass through said slots, a series of keys connected to and adapted to actuate said plungers, a paper-carriage, a feed mech-

anism therefor, adapted to be engaged and released by said plungers when actuated; as and for the purpose set forth.

11. In a type-writer, a paper-feed carriage, a feed mechanism therefor, a series of auxiliary keys, a corresponding series of plungers, each adapted to be projected into position to release said feed mechanism, means for normally retaining said plungers in retractive or inoperative position, and a stop adapted to arrest the movement of said carriage at variable points when released; as and for the purpose set forth.

12. In a type-writer, a key-bar, provided with an inclined portion, a guide adapted to receive said inclined portion and adapted to move said key-bar laterally when it is projected longitudinally, a plunger connected to move with said key-bar during its lateral movement, a paper-feed carriage, a ratchet-feed therefor, said ratchet-feed adapted to be released when said plunger is projected, and a stop for arresting said carriage at a predetermined point; as and for the purpose set forth.

13. In a spacing attachment for a type-writer a series of plungers of a thickness corresponding to one letter-space, said plungers arranged side by side, a series of keys connected to and arranged to actuate said plungers, a paper-feed carriage, a feeding mechanism therefor, said feed mechanism adapted to be engaged and released by each of said plungers, stops mounted on said carriage, adapted to be adjusted to a predetermined position, and adapted to impinge against a plunger when said plunger is actuated by said

auxiliary key to arrest the movement of said carriage when it is released from its feed mechanism; as and for the purpose set forth.

14. In a spacing attachment for type-writers, a series of plungers, arranged side by side and each of a thickness corresponding to a letter-space, a casing adapted to receive said plungers, a cushion interposed between the wall of said casing and the last plunger of the series, a series of keys adapted to actuate said plungers, a paper-feed carriage, a feed mechanism therefor, adapted to be released by the engagement therewith of any one of said plungers, and adjustable stops mounted on said carriage, and adapted to impinge against said plungers to arrest the movement of said carriage when it is released from its feeding mechanism; as and for the purpose set forth.

15. In a type-writer, a spacing attachment comprising a series of auxiliary keys, a series of plungers arranged a letter-space distance apart and each connected to and adapted to be operated by an auxiliary key, in combination with a paper-feed carriage and its feed mechanism, each of said plungers, when actuated, adapted to release said carriage from its feed mechanism, and stops adapted to impinge against said plungers to arrest the movement of said carriage at a predetermined point; as and for the purpose set forth.

In witness whereof I have hereunto set my hand this 23th day of May, 1895.

FRED P. GORIN.

Attest:

M. I. CAVANAGH,
S. E. DARBY.