

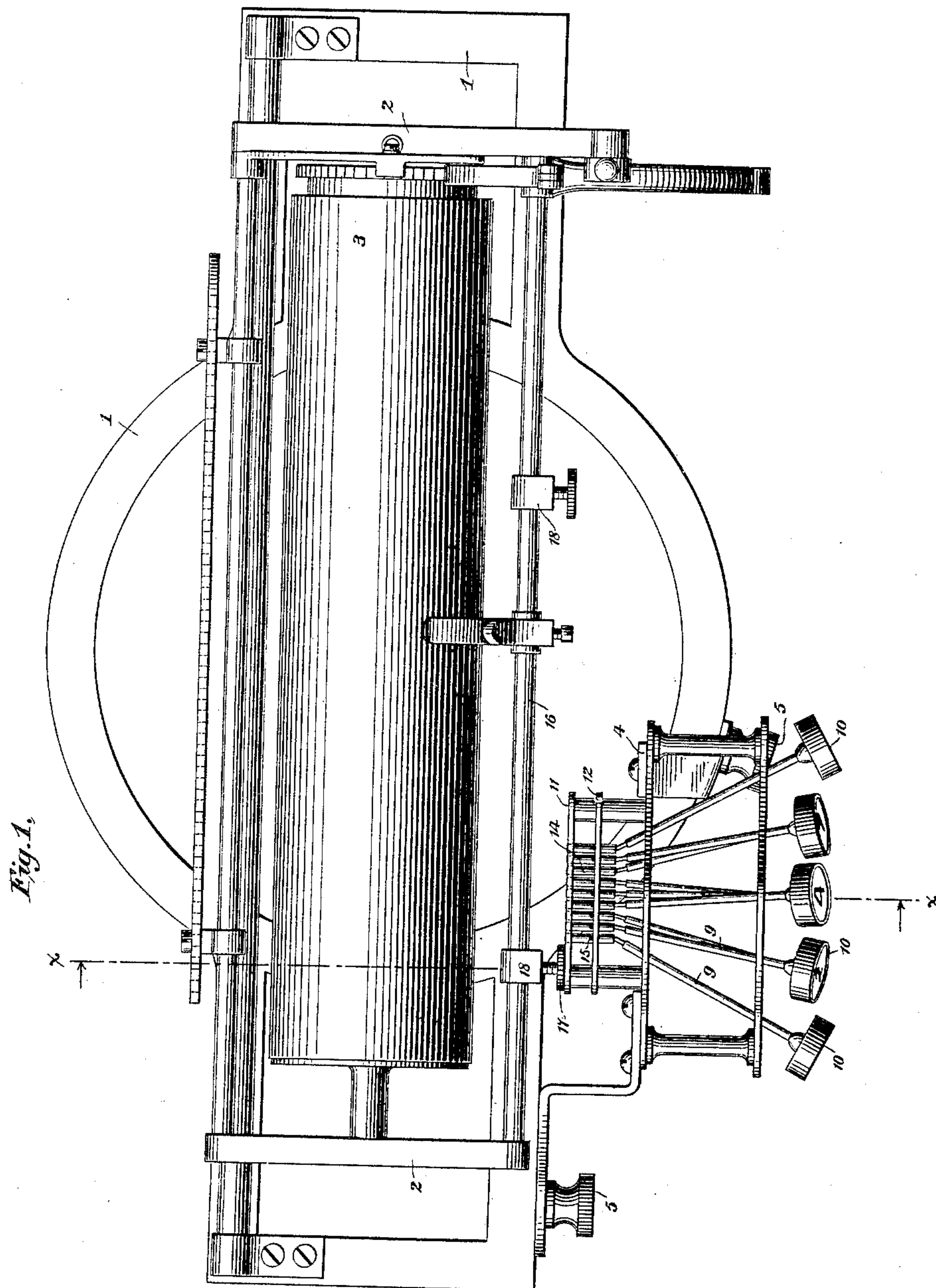
(No Model.)

2 Sheets—Sheet 1.

W. C. HARDIE.  
TYPE WRITING MACHINE.

No. 450,701.

Patented Apr. 21, 1891.



Witnesses  
Geo. W. Breck.  
Edward Thorpe.

Inventor  
By his Attorney *William C. Hardie*  
*Jacob Feltel*

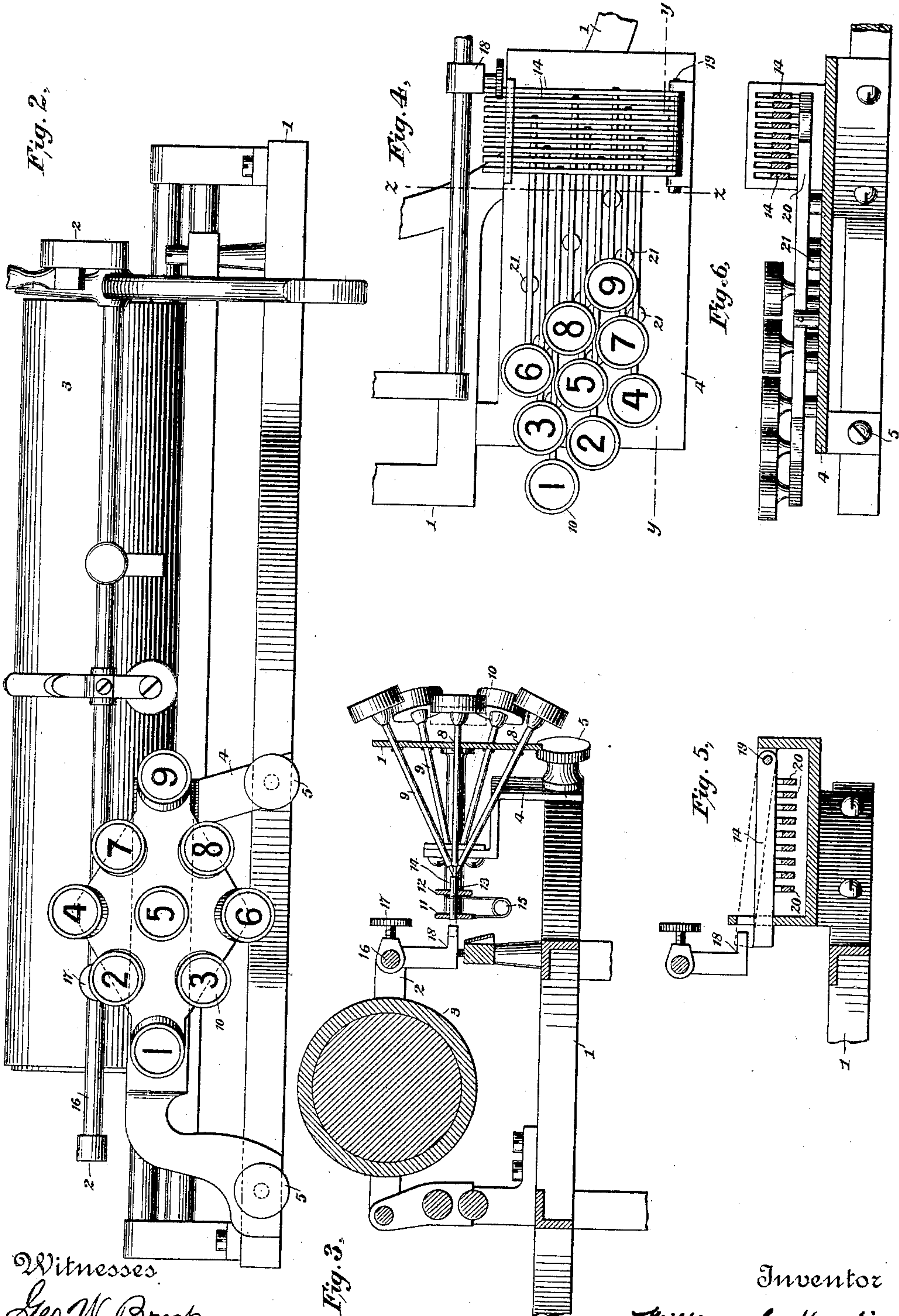
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# UNITED STATES PATENT OFFICE.

WILLIAM C. HARDIE, OF ORANGE, NEW JERSEY.

## TYPE-WRITING MACHINE.

SPECIFICATION forming part of Letters Patent No. 450,701, dated April 21, 1891.

Application filed October 6, 1890. Serial No. 367,249. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM C. HARDIE, a citizen of the United States, and a resident of Orange, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Type-Writing Machines, of which the following is a specification.

My invention has for its main object to provide a means whereby tabulated or column work may be speedily, correctly, and conveniently performed with the type-writer and without the employment of the usual scales now almost universally used in doing this class of work.

To this end my invention consists, first, in employing, in connection with the paper-carriage, a series of independent stops arranged side by side for arresting the carriage at different points when moved toward the right of the operator, according to the value of the numbers which it may be desired to print, the said stops representing successively units, tens, hundreds, &c.

My invention consists, further, in certain features of construction and combinations of devices, all as will be hereinafter more fully described, and particularly pointed out in the appended claims.

In the accompanying drawings, Figure 1 is a plan view of the upper portion of a type-writing machine embodying my invention. Fig. 2 is a front elevation of the same. Fig. 3 is a vertical section taken at the line  $xx$  of Fig. 1. Fig. 4 is a detail plan view of a modification of my invention. Fig. 5 is a vertical section thereof, taken at the line  $zz$  of Fig. 4. Fig. 6 is a similar section taken at the line  $yy$  of Fig. 4.

In the several views the same part is designated by the same numeral of reference.

1 represents the frame-work of a type-writing machine, 2 the paper-carriage, and 3 the paper-platen journaled in said carriage.

Referring to Figs. 1, 2, and 3, a bracket or support 4 is shown, which may be attached by screws 5 or clamps or the like to the frame-work of the machine. On the bracket or support are two parallel plates 6 and 7, perforated at 8, to hold and guide a series of independent stem-keys or push-rods 9, hav-

ing each a head or button 10 at its outer end. On the bracket or support are two additional parallel plates 11 and 12, perforated at 13, to receive and guide a series of parallel independent pins or stops 14, adapted each to be moved in one direction (toward the platen) by one of the rods or stems 9. The rods or stems are arranged to converge at their inner ends, in order to bring each rod into operative relation with one of the parallel pins or stops. Each pin or stop is provided with a spring 15 for returning it to its first position. The first pin (counting from the left) is reached and operated by the rod whose head is marked "1," the second pin by the rod whose head is marked "2," and the third, fourth, fifth, sixth, seventh, eighth, and ninth pins are respectively reached and operated by the rods whose heads are marked 3, 4, 5, 6, 7, 8, and 9.

Adjustably secured upon the front rod 16 of the paper-carriage by a screw 17 is a depending lug or arm 18, arranged at its free end to travel in the horizontal plane in which lie the pins 14 and in such proximity to said pins as to hit any one of them which may be projected or slid rearwardly, and thus effect a stoppage of the carriage.

As before explained, the attachment is designed for use in tabulated work or where a column of figures is to be written, as in a bill or statement, and wherein the figures on each line are to be arranged in their regular order and with reference to the figures of the preceding lines.

In operation, suppose it be desired to print 5890 on the first line. The operator will then push in the key having "4" upon its head and cause it to project rearwardly the fourth pin or stop of the series. The paper-carriage is then drawn toward the right of the operator until the lug or arm 18 strikes against the said fourth pin and is arrested. The carriage is then released, likewise the key, and the spring 15 permitted to return the pin and the key to their normal positions. The operator will then strike the necessary keys on the regular key-board of the machine to cause the type 5890 to print, the carriage feeding to the left, as usual. Suppose it be desired, now, to write on the next line 873541 and in proper relation to the figures of the line above



so that the two lines may be readily added together. The operator will simply push back the key bearing the figure "6," (which denotes hundred thousandths,) pull the carriage to the right until the lug strikes the sixth pin which has been projected, release the carriage and the key, and then commence writing the figures 873541. When this operation has been finished, it will be discovered upon inspecting the work that the figures have been written in their proper positions—that is to say, units under units, tens under tens, hundreds under hundreds, &c. In this manner line under line may be written, and, no matter how many figures there may be in any line or what may be the value of the item, the figures will all be printed in their proper positions, according to their value and without the employment in anywise of the usual scales and without once lifting the carriage or inspecting the work.

While I have shown nine pins or stops, there may of course be more than this number; but I would prefer not to have less, though one or more may be dispensed with.

There may, if desired, be several of the lugs or arms 18, so that several parallel columns may be written on the same sheet.

When it may be desired to do ordinary work, the contrivance may be detached from the machine.

Referring to Figs. 4, 5, and 6, the stops 14 are made in the form of levers having a common fulcrum 19, which when in their normal positions lie in a plane below the lug or arm 18 on the paper-carriage. These lever-stops 14 are guided in slots and are adapted each to be raised to co-operate with said lug or arm for the purpose of arresting the carriage. The elevation of the lever-stops 14 may be conveniently effected by the series of levers 20, arranged at right angles thereto and in a manner such that each one will operate upon one of said lever-stops. The levers 20 are fulcrumed on posts 21 and extend laterally under the stops, each a different distance, according to the stop it is to operate. The outer ends of the levers 20 are provided with buttons marked 1 2 3 4 5 6 7 8 9, according to the stop it engages with. In use this construction is adapted to do all that the construction shown in Figs. 1, 2, and 3 is adapted to do. The operation thereof is substantially similar and will be readily understood from what has been said above and from an inspection of the drawings. The stops, be they sliding or tilting, should be arranged side by side and a letter-space distance apart from center to center, so as to correspond with the feed of the paper-carriage. They may be arranged closer together or farther apart than shown, according to the size of type or width of spacing.

Of course it is apparent that numerous changes in detail may be made to adapt the contrivance to type-writing machines of different makes, and hence I do not wish to be

considered as limited to precisely what I have shown and described.

What I claim as new, and desire to secure by Letters Patent, is—

1. In a type-writing machine, the combination, with a paper-carriage, of a series of independent movable stops arranged side by side and adapted when moved to co-operate with a suitable lug or abutment to arrest the paper-carriage when pulled to the right for the purpose of determining the starting-point of the line of print, substantially as and for the purpose set forth.

2. In a type-writing machine, the combination, with a paper-carriage, of a lug or abutment thereon and a series of independent movable parallel stops arranged side by side and mounted on the frame-work to co-operate as required with the lug or abutment and arrest the paper-carriage at different points along its line of travel when pulled to the right for the purpose of determining the starting-point of the line of print, as and for the purpose set forth.

3. In a type-writing machine, the combination, with a paper-carriage, of a lug or abutment, a series of independent parallel stops arranged side by side to arrest said paper-carriage when pulled to the right and to determine the starting-point of the line of print, and a series of keys for moving said stops, as and for the purpose set forth.

4. In a type-writing machine, the combination, with a paper-carriage, of a series of independent parallel stops arranged side by side and at a letter-space distance apart to arrest said paper-carriage when pulled to the right and to determine the starting-point of the line of print, as and for the purpose set forth.

5. In a type-writing machine, the combination, with a paper-carriage, of a series of independent parallel stops arranged side by side, means for guiding said stops, and means for moving the same, the whole being arranged to arrest the carriage when pulled to the right and thus determine the starting-point of the line of print, substantially as and for the purpose set forth.

6. The described attachment for type-writing machines, consisting, essentially, of a series of stops arranged side by side and at a letter-space distance apart for the purpose of determining the starting-point of the carriage and enabling such point to be varied at each successive line, so that in writing a column of figures the figures may be readily printed in their proper places according to their respective values and without resorting to the machine-scales, substantially as set forth.

Signed at New York city, in the county of New York and State of New York, this 4th day of October, A. D. 1890.

WILLIAM C. HARDIE.

Witnesses:

JACOB FELBEL,  
MARTIN LAYDEN.