

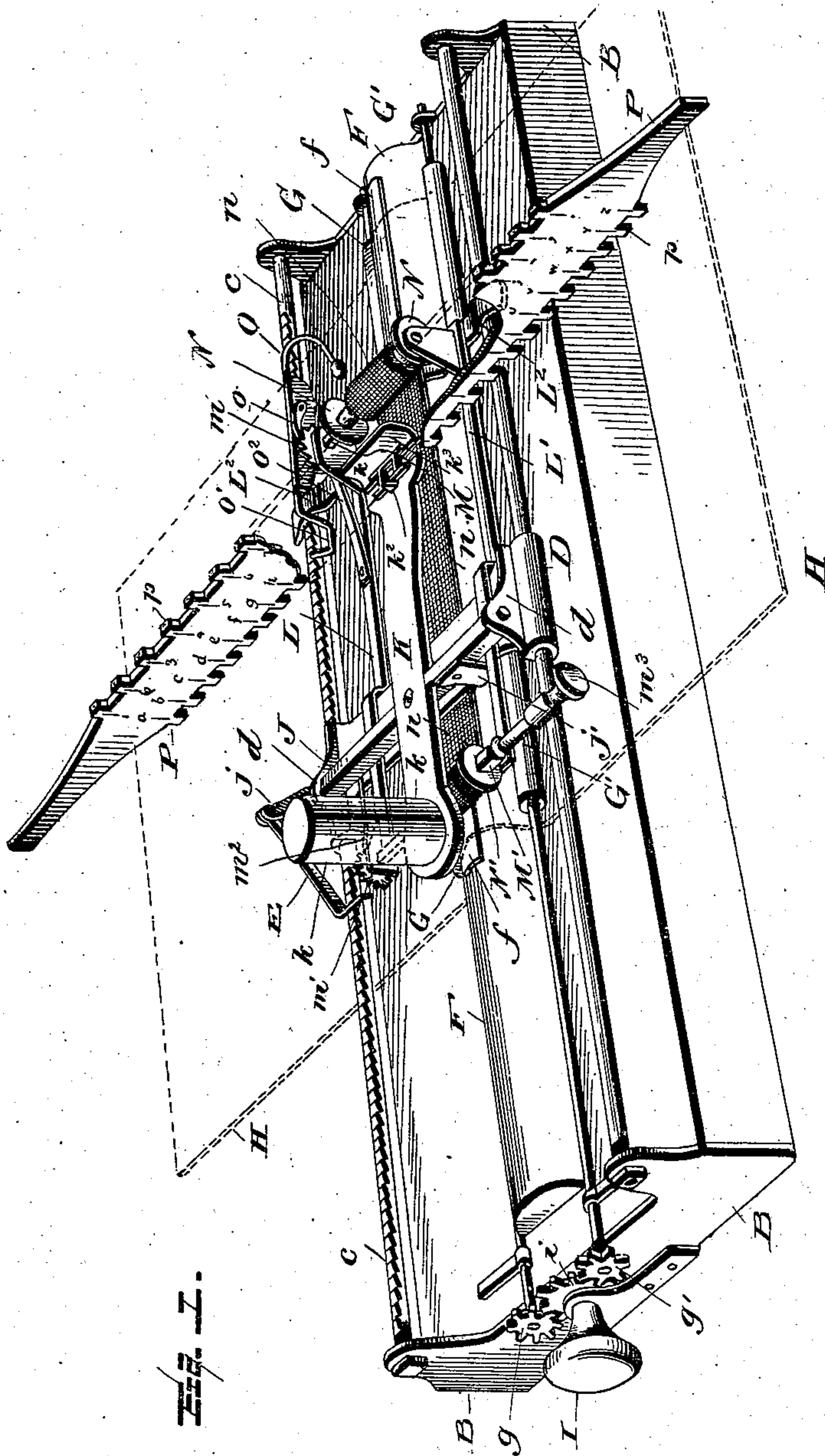
(No Model.)

2 Sheets—Sheet 1.

M. K. MORRIS.
TYPE WRITING MACHINE.

No. 506,712.

Patented Oct. 17, 1893.



Witnesses:

L. C. Hills
C. S. Trull.

Matthias K. Morris, Inventor
by Franklin H. Hough
Attorney

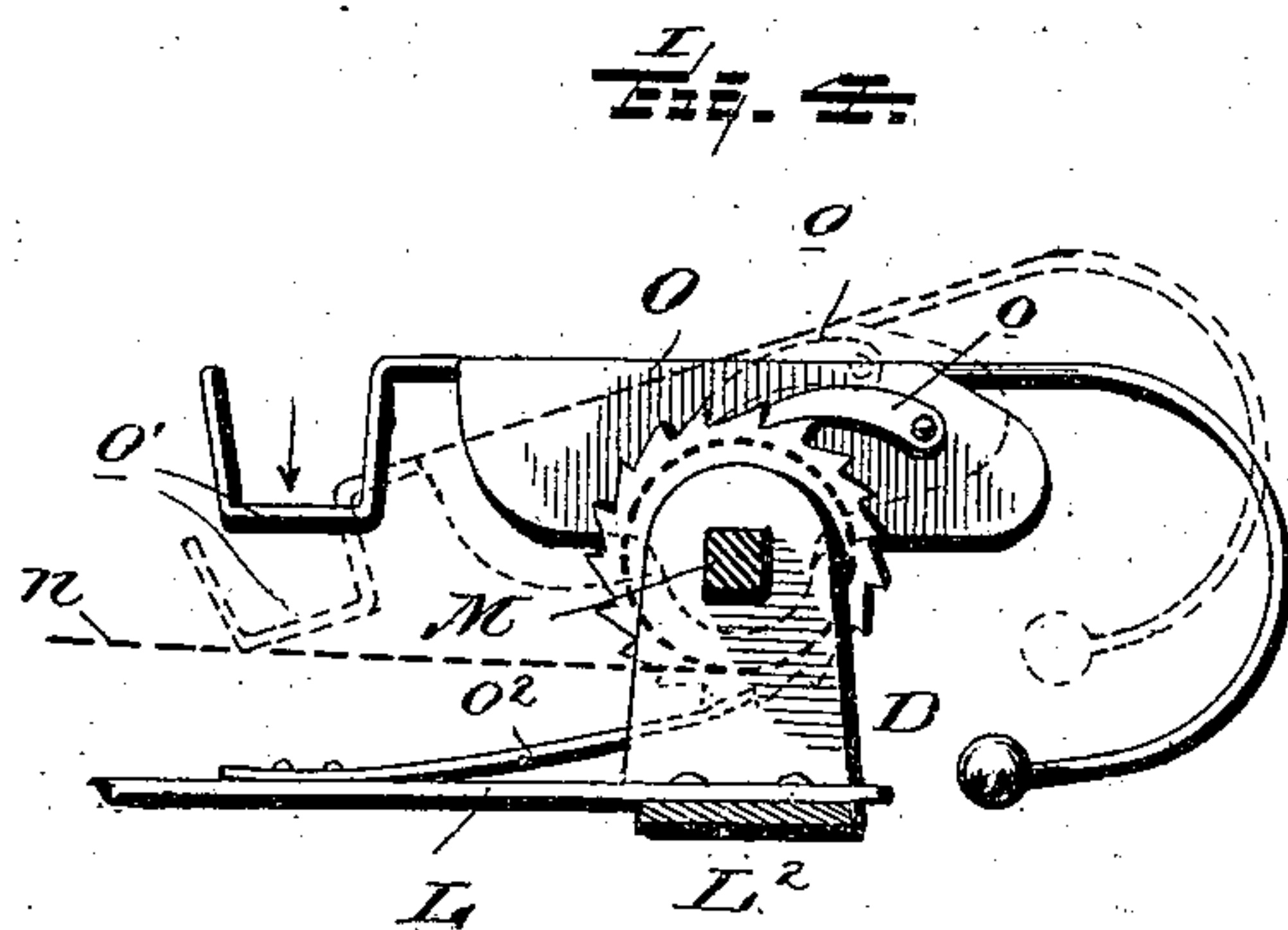
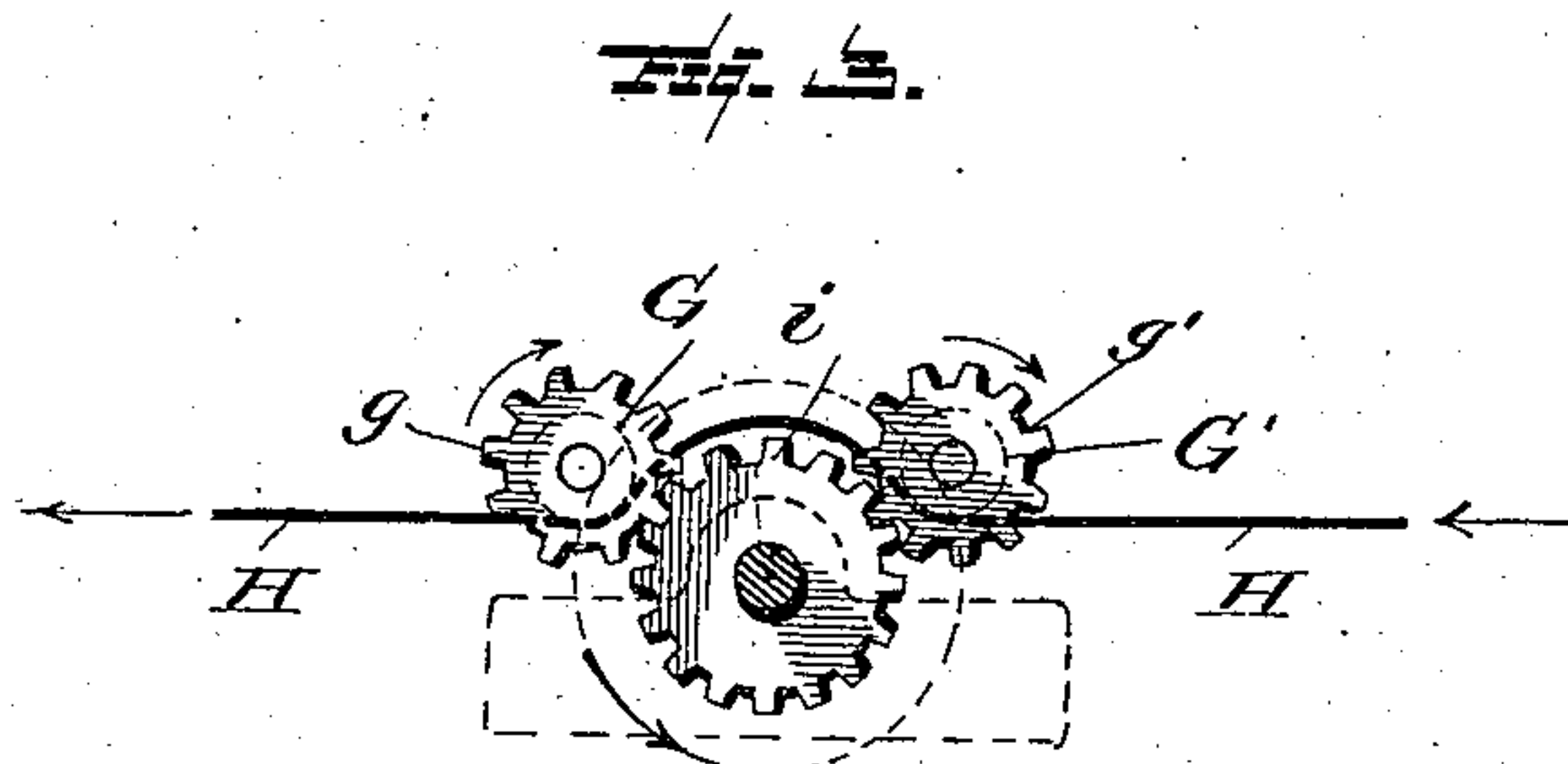
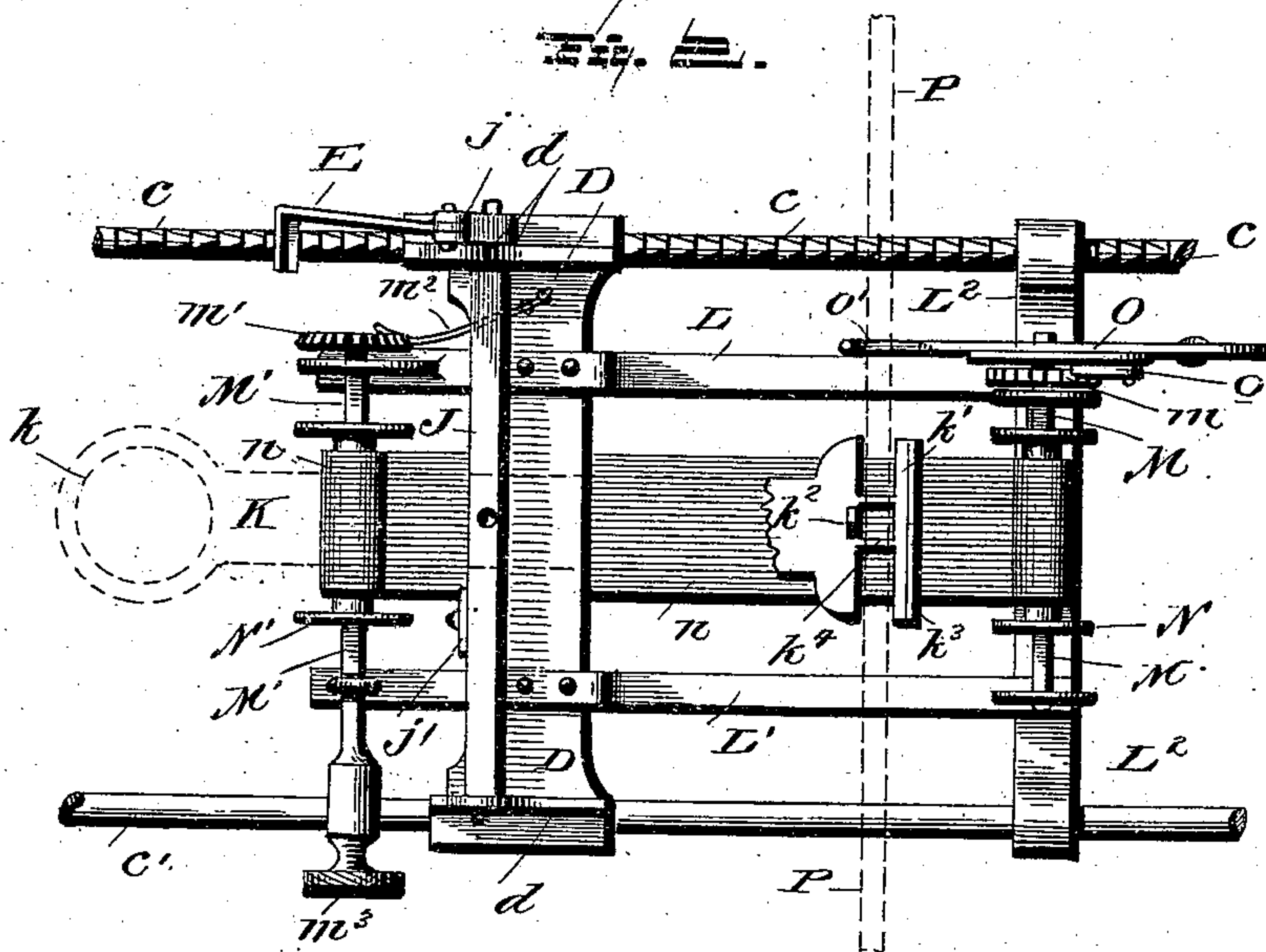
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UNITED STATES PATENT OFFICE.

MATTHIAS K. MORRIS, OF HOLLIDAY'S COVE, WEST VIRGINIA.

TYPE-WRITING MACHINE.

SPECIFICATION forming part of Letters Patent No. 506,712, dated October 17, 1893.

Application filed June 17, 1893. Serial No. 477,974. (No model.)

To all whom it may concern:

Be it known that I, MATTHIAS K. MORRIS, a citizen of the United States, residing at Holliday's Cove, in the county of Hancock and State of West Virginia, 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 of reference marked thereon, which form a part of this specification.

The present invention is an improvement on type-writers of that class which is portable, and designed to be sold at a moderate cost and within the reach of everyone.

The particular style of machine to which the invention is applicable, is that in which the type-bar is separate and independent, and designed to be held in the hands of the operator, when using the machine, the proper letter or character to be printed being brought in position on a counterbalanced tilting arm by means of an indicator or pointer provided on the latter.

The invention is designed most especially as an improvement on the machine for which on May 3, 1892, Letters Patent of the United States, were granted me, No. 473,945.

The improvements consist in the provision of ribbon and ribbon feeding mechanism which are operated by the type-bar; in mechanism for feeding the paper over the paper support in a positive manner in either direction, and in the general construction of the machine, as will hereinafter more fully appear, reference being had to the reference letters on the figures of the annexed drawings, and to similar letters of reference in the following description.

In the drawings:—Figure 1 is a perspective view of a type-writing machine embodying the invention. Fig. 2 is a top plan view of the carriage, showing the ribbon mechanism on a larger scale, the counterbalanced tilting arm being removed. Fig. 3 is a detail view showing the manner of turning the paper-feeding rollers in either direction as desired. Fig. 4 is a detail view of the mechanism for

feeding the ribbon or winding the same from one spool to the other, the operation being shown by dotted lines.

The base A is rectangular and preferably of wood, and is provided at its ends with metal pieces B from which rise vertical standards which receive and support longitudinal bars *c* and *c'* that are arranged in parallel relations. These bars *c* and *c'* support and form guides for the carriage D. The bar *c* is notched on its top side to provide a series of teeth which are engaged by a pawl E and move the carriage over the paper a distance to properly space the letters and characters being printed.

The paper support F is disposed midway between the bars *c* and *c'* parallel therewith, and is preferably of wood having a strip of rubber or other flexible material *f* on its top side to receive the impact of the type when writing. Longitudinal rollers G and G' are arranged parallel with and one on each side of the paper support, to engage with the paper H and feed the same over the paper support. Pinions *g* and *g'* on one end of the journals of the rollers G and G' respectively, are adapted to mesh with a corresponding pinion *i* on the end of a thumb knob I by means of which the said rollers are positively operated to move the paper over the paper support in the required direction, and the proper distance. The rollers G and G' are adapted to move longitudinally in their bearings to bring one or the other of the pinions *g* and *g'* in mesh with the said pinion *i* so that when rotating the thumb knob I the paper can be moved positively in the desired direction.

The carriage D is composed of a bar extending from one to the other of the bars *c* and *c'* and having sleeves at its ends to receive and slide upon the said bars. A rock-shaft J is journaled at its ends in lugs *d* projecting vertically from the ends of the carriage D. One end of this rockshaft is projected beyond a lug *d* and has a crank arm *j* mounted thereon, to which the pawl E is pivotally attached. The lower bent end of this pawl engages with the teeth on the guide bar C and produces a movement of the carriage after each operation of the counterbalanced arm K. The stop *j'* projecting from the rock-

shaft J limits the movement of the latter when regaining itself after being operated by engaging with the carriage or a portion thereof. The counterbalanced tilting arm K is attached midway of its ends to the rock-shaft J and is weighted at one end, as shown at k , and is provided at the opposite end with a guide k' and a pointer k^2 . The guide k' is composed of a vertical piece k^3 against which the type-bar rests, to give it the proper position, and short bars k^4 which are designed to come between the type and extend on each side of the type to be printed, thereby preventing longitudinal movement of the type-bar when depressing the latter.

The ribbon supporting mechanism is composed of side-bars L and L' which are supported between their ends on the carriage D, and a cross bar L² which rests upon the bars c and c' at its ends. Angular shafts M, M' are journaled at their ends in the ends of the side bars L, L', and have the ribbon spools N, N' mounted thereon. These spools N, N' are free to move on the shafts to use the ribbon n up between its edges. By providing ribbons of different colors the writing may be effected in colors by moving the spools so as to bring the desired color ribbon in operative position. The shaft M' is provided at one end with a wheel m' on which acts a spring m^2 to serve as a brake to prevent the ribbon paying off too rapidly, and at the other end with a knob m^3 by means of which the shaft is rotated to wind the ribbon from the spool N onto the spool N'. The shaft M is provided at one end with a ratchet wheel m . A weighted lever O is loosely mounted between its ends on the same end of the shaft M with the ratchet wheel m and has a pawl o to engage with the teeth of the said ratchet wheel and move the ribbon after each impression. The inner end o' of the lever O is hook shaped and is in the same line with the guide k' on the arm K, so that the type-bar will actuate the arm K and the lever O at the same time. As the inner end of the lever O is depressed the pawl o will engage with the ratchet wheel m and turn the shaft and spool N sufficiently far to move the ribbon the distance of a letter or character, so as to bring a new portion of the ribbon in position for the printing of the next letter or character. A detent o² engages with the ratchet wheel m and prevents the latter from turning back. The type-bar P is straight and has the type p projected from each edge, the letter or character on each type being indicated by a corresponding character on the side of the type-bar directly opposite the type p . The paper H to be written upon is passed over the paper support and under the rollers G, G', the type-bar is grasped firmly in the hand and held at right angles to the paper support, and the desired letter or character to be printed is brought opposite the pointer k^2 . Now, by depressing the type-bar the character is printed. The type-bar engaging with the weighted lever O

at the same time effects a movement of the ribbon. On elevating the type-bar to bring another letter in position for printing, the weight k will return the arm K to a normal position, and through the pawl E move the carriage over the paper in the manner hereinbefore set forth. After one line has been printed, the paper is moved to a new position by the rollers G and G', and the thumb knob I in the manner previously explained.

What I claim to be new in my invention, and desire to secure by Letters Patent, is—

1. In a type-writer the combination with the base having a stationary paper support, and a separate and independent type-bar, of a carriage, a counterbalanced arm mounted on the carriage, a ribbon supporting and carrying mechanism attached to the said carriage, and a lever arranged to, effect a proper feed of the ribbon, and adapted to be actuated by the said type-bar, substantially as and for the purposes described.

2. In a type-writer, the combination with the base having a paper support, a carriage adapted to move over the base, a counterbalanced arm mounted on the carriage, and a separate type-bar, a frame attached to the carriage, ribbon rollers mounted on the said frame, a ratchet wheel attached to one of the ribbon roller supports, and a weighted lever mounted on the same support with the ratchet wheel, and carrying a pawl to engage with the said ratchet wheel, the outer end of the said lever being adapted to be struck by the type-bar, substantially as and for the purposes described.

3. In a type-writer, the combination with a base provided with a ribbon support, a carriage adapted to move on the base and provided with a counterbalanced arm, and a type-bar, of a frame composed of side bars L, L', and a cross bar L², ribbon rollers mounted on the said side bars, and adapted to move laterally, a spring adapted to act on one of the rollers to prevent the ribbon paying off too rapidly, and a feed mechanism applied to the other roller, consisting of a ratchet wheel, a detent, and a weighted lever carrying a pawl to engage with the said ratchet wheel and constructed to be actuated by the said type-bar, substantially as and for the purposes described.

4. In a type-writer, the combination with the carriage, a type-bar, and a frame attached to the carriage, of shafts M, M' journaled on the said frame, the shaft M' having a knob m^3 , a brake applied to the said shaft M', a feed mechanism applied to the shaft M, and comprising a weighted lever which is adapted to be actuated by the said type-bar, and ribbon spools mounted on the said shafts to turn therewith, and adapted to move freely thereon, substantially as and for the purposes described.

5. In a type-writer, the combination with the carriage, and a counterbalanced arm mounted thereon, and provided at one end with

a guide and a pointer, the guide consisting of a vertical piece and short bars, and a type-bar adapted to rest when in use against the said vertical piece, and have the said short bars
5 come between the type and embrace the type in position to print, substantially as and for the purposes described.

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

MATTHIAS K. MORRIS.

Witnesses:

GILBERT CRARY,
WM. BROWN.