

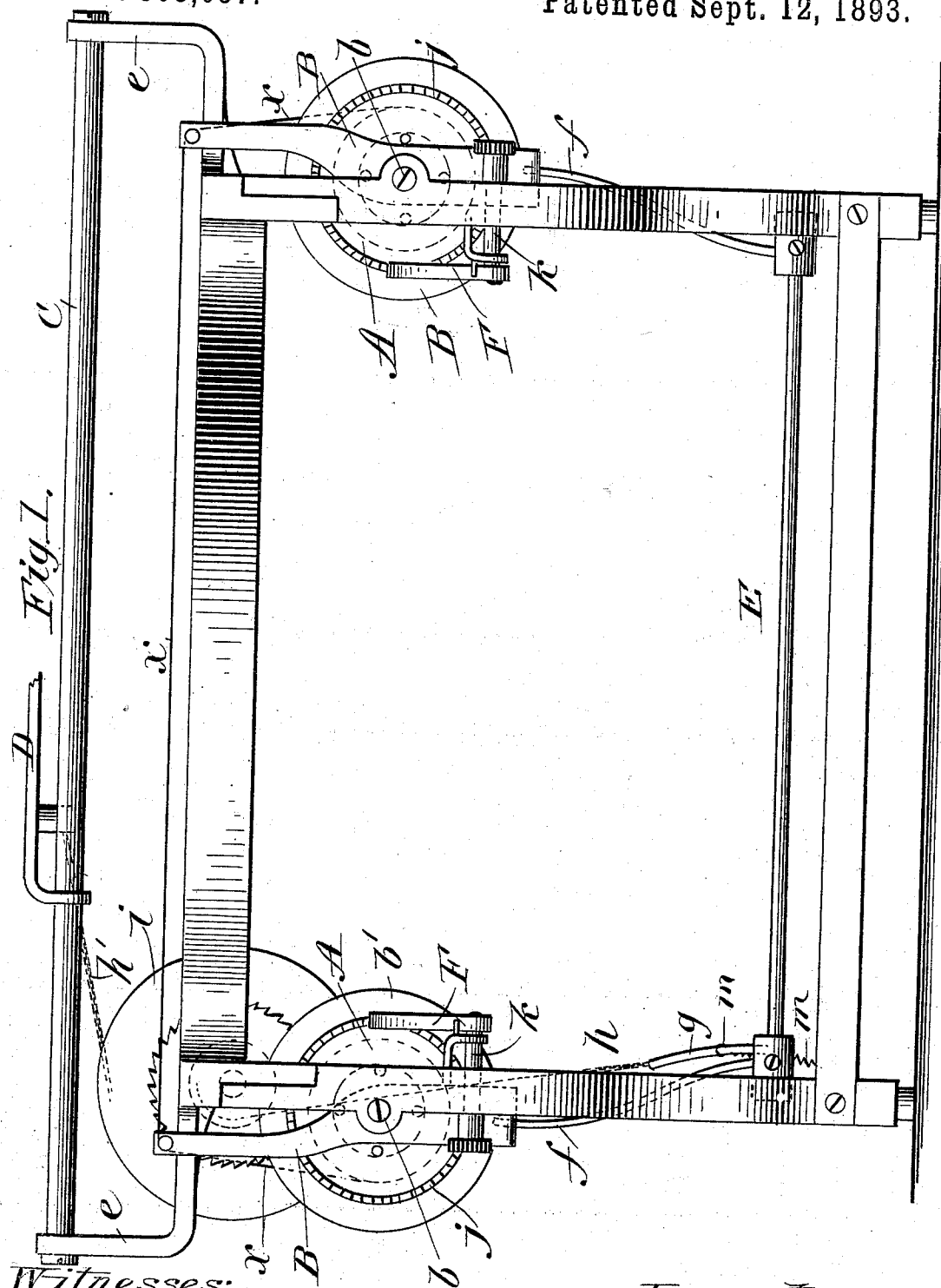
(No Model.)

2 Sheets—Sheet 1.

H. W. MERRITT.
TYPE WRITING MACHINE.

No. 505,057.

Patented Sept. 12, 1893.



Witnesses:

J. W. Sanfield.
G. M. Chamberlain

*Inventor,
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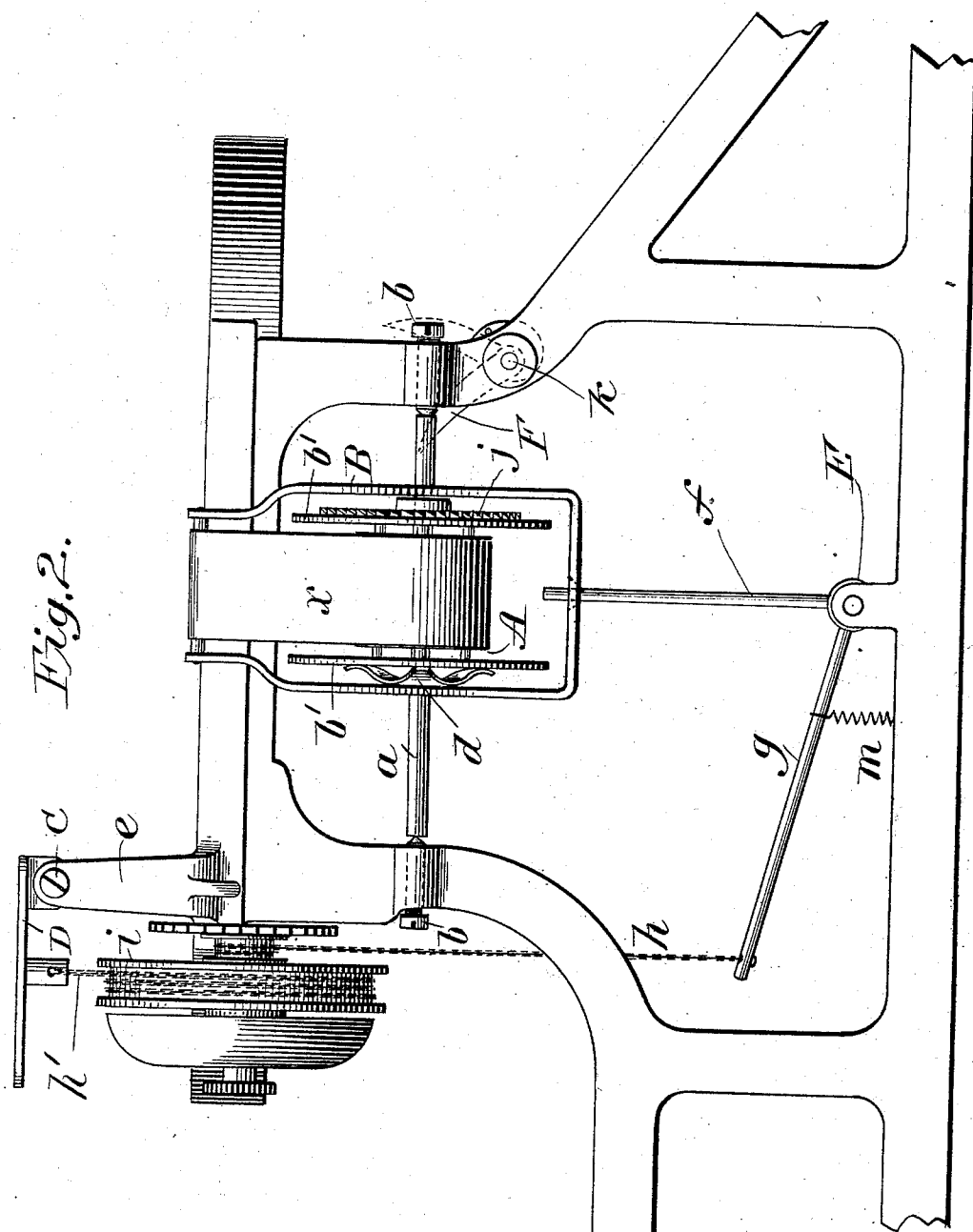
(No Model.)

H. W. MERRITT.
TYPE WRITING MACHINE.

2 Sheets—Sheet 2.

No. 505,057.

Patented Sept. 12, 1893.



Witnesses:
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UNITED STATES PATENT OFFICE.

HENRY W. MERRITT, OF SPRINGFIELD, MASSACHUSETTS, ASSIGNOR TO THE MERRITT MANUFACTURING COMPANY, OF SAME PLACE.

TYPE-WRITING MACHINE.

SPECIFICATION forming part of Letters Patent No. 505,057, dated September 12, 1893.

Application filed January 29, 1891. Serial No. 379,519. (No model.)

To all whom it may concern:

Be it known that I, HENRY W. MERRITT, a citizen of the United States, residing at Springfield, in the county of Hampden and State of Massachusetts, have invented new and useful Improvements in Type-Writing Machines, of which the following is a specification.

The purpose of the present invention in type writing machines is to provide a mechanism for or relative to the ribbon-rolls or "spools" whereby in operation, the spools will have, in addition to their capabilities for rotation for letting off and taking up the inking ribbon, movements in the direction of their axes so that substantially all portions of the ribbon may at some time during a continued use of the type-writer be presented at the type impact point in the machine. As well known, where the ribbon of a type writing machine is caused to be moved from one side of the machine to the other in a given and permanent course, the type strike the ribbon always at a certain distance within the edges of the ribbon, and, as the ribbon travels, only a line along the same is made available, and moreover the ribbon at such line becomes worn, and after awhile broken, and the ribbon therefore must necessarily be replaced.

The mechanism of the present invention consists in the construction and combination of parts all substantially as will hereinafter more fully appear and be set forth in the claims.

In the accompanying drawings forming part of this specification, Figure 1 is a front view of the frame of a type-writing machine showing the ribbon-spools and coacting devices constituting this invention supported thereon. Fig. 2 is a side elevation of the same parts or mechanism.

In the drawings, A, A, represent the ribbon-spools located at opposite sides, or ends, of the machine as usual, and each is supported on a horizontal supporting shaft *a*, therefor. Each of the said shafts *a*, is, as shown in Fig. 2, fixed against any endwise or rotational movement by being closely confined between the screws *b, b*, the tapered points of which enter the correspondingly formed ends of the shaft. Each ribbon-roll A, is mounted within

a yoke or frame B, which is maintained on and freely slides along on the supporting-shaft *a*, for the ribbon-roll. The ribbon-roll has heads or cheek-pieces *b'*, which are separated by a distance less than that between the vertical members *c*, of the yoke and a central hub on one of said heads bears against one vertical yoke-member, while between the other roll head and the other yoke-member is interposed a tension spring *d*, which serves to prevent the rotation of the roll except as the same is positively rotated by the means hereinafter set forth.

C represents a horizontal rail or guide-way which extends across and is supported at the back of the machine-frame on the brackets *e*, and on this rail the rear portion of the carriage is supported to slide as usual in type writing machines, a portion of the said carriage being indicated by D.

E represents a rock-shaft, here shown as extending from end to end of the machine and supported in suitable bearings. Said rock-shaft at each end is provided with an arm *f*, which has an engagement with the respectively adjacent ribbon-roll embracing yoke. Said rock-shaft is also provided at one end thereof with another radial arm *g*. A chain or cord *h*, is connected to said arm and by its other extremity is secured, for winding and unwinding upon the portion of the drum *i*, having the smaller diameter. Another section of chain *h'*, is by one extremity secured for being wound on and unwound from the portion of the drum *i*, having the greater diameter, which chain section *h'*, by its other end is connected to the carriage D. The carriage moving from one end of its course to the other, will through the intermediate connections described with the ribbon-roll yoke cause the latter to make a much shorter traverse at right angles to the run of the carriage, and in the construction of the machine embracing the present improvements the traverse of the ribbon-roll, during one movement of the carriage from one end of its rail to the other, will be of an extent slightly less than the width of the ribbon *z*, and therefore the impact successively of the type during the said one movement of the carriage will be at different points in a line across the ribbon

at right angles to its length. The head at one side of each ribbon-roll is, on the outer face thereof concentrically provided with a ratchet *j*.

5 Pawls *F*, are mounted toward the front of machine on the studs *k*, therefor, each pawl being in a line with a suitable point in the course of the circular ratchet.

Each stud carrying a pawl *F*, as described, 10 is provided with a knurled thumb knob whereby at will the stud may be turned so as to swing the pawl back into a position substantially as indicated in Fig. 2. At all times in the operation of the machine one of the 15 pawls is swung back on or with its stud out of a position for engagement with the ratchet on the respectively adjacent ribbon-roll head. As the ribbon-rolls are slid forward in parallelism as the carriage is slid to its position for 20 starting a new line, the ratchet on one of the ribbon-roll heads will come into engagement with the point of the one pawl respectively provided therefor, and while the said pawl will swing somewhat under the impact there- 25 upon of the ratcheted roll head, its pivot being immovable the ribbon-roll will be forced around to the extent of one tooth, or more than one if the teeth are comparatively fine, and therefore this positive partial rotation of 30 one of the rolls insures the winding up of the ribbon on the so turned roll, and a presentation of a new portion in the length of the ribbon at the type impact line of the machine at the time of commencing each new line of type 35 writing. Of course as the ribbon is very slowly wound up on one ribbon-roll under the rotation positively imparted thereto, as described, it will in a corresponding extent be drawn off from the other roll. After the ribbon has been 40 run off from one roll and substantially the whole area thereof utilized as described by swinging the pawl for the one roll (to which had been given the intermittent rotary movement) out of its operating position, and by 45 swinging the pawl for the opposite roll into its ratchet-engaging position, the other roll will then similarly be actuated to rewind the ribbon thereon. It will be noticed that the pawls for the two ratcheted rolls being at opposite

sides of the axes thereof will in their actuating 50 engagement insure rotation of the rolls in directions, the one the reverse of the other. The spring *m*, applied to the arm *g*, secures the downward swinging of said arm and the back- 55 ward sliding of the ribbon-rolls and a drawing-taut of the chain *h*, as the carriage is returned to its starting position after a line or portion thereof has been type written. In lieu of the spring the arm *g*, might be suitably weighted. 60

What I claim as my invention is—

1. In a type-writing machine, the combination with the movable carriage, a ribbon-roll and a shaft on which said roll may rotate and also move axially, of a rock-shaft provided 65 with an arm *f*, engaging said roll, and the arm *g*, the drum having the portions of larger and smaller diameter, the flexible connection secured to the carriage and engaged with said drum to be wound on and unwound from the 70 larger portion as the carriage travels, and the flexible connection connected to said arm and engaged with said drum to be wound on and unwound from the reduced drum portion as the drum is turned, substantially as and for 75 the purposes set forth.

2. In a type-writing machine, the combination with the carriage and a pair of ribbon-rolls each having on its one end or head a ratchet, shafts *a, a*, on which said rolls may 80 rotate and also move axially, a pair of pawls respectively located to engage said ratcheted ribbon-rolls as the same reach their limit of axial movement, each of said pawls being 85 mounted so as to be thrown out of its ratchet-engaging position and said pawls being located relative to said ribbon-roll ratchets to rotate said rolls the one in a direction the reverse of the other, the rock-shaft *E*, arms *f, f*, arm *g*, drum having portions of two diame- 90 ters, and the flexible connections *h, h'*, and all arranged for securing on the travel of the carriage a simultaneous endwise movement of said ribbon-rolls, for the purpose set forth.

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Witnesses:

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