G. W. DAVIS.

LINE SPACING MECHANISM FOR TYPE WRITERS.

APPLICATION FILED JAN. 3, 1907.

993,584. Patented May 30, 1911.

Fig. 1.

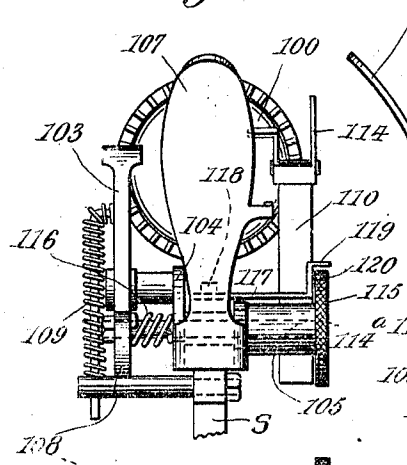

Fig. 2.

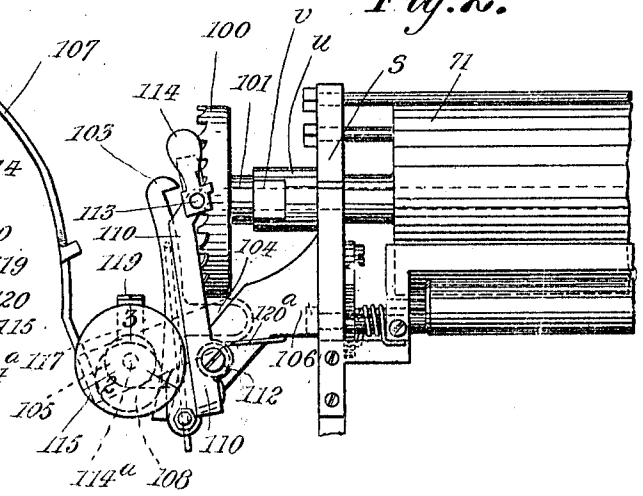

Fig. 3.

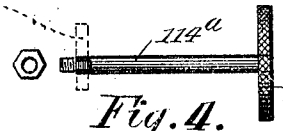

Fig. 4.

Fig. 5.

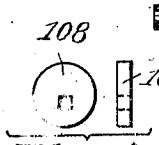

Fig. 6.

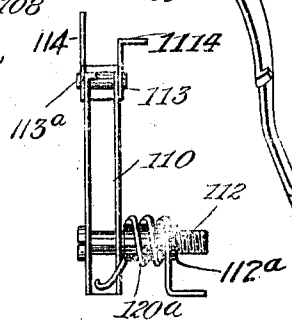

Fig. 7.

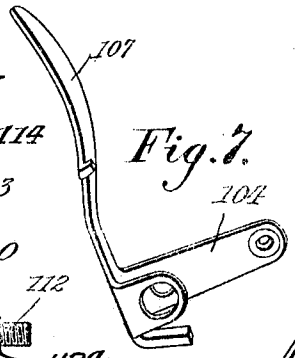

Fig. 8.

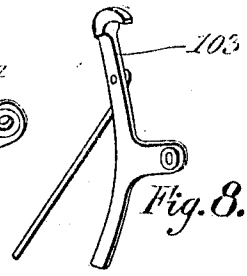

Fig. 9.

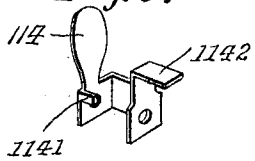

Fig. 10.

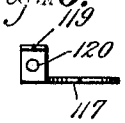

Fig. 11.

Witnesses

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UNITED STATES PATENT OFFICE.

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LINE-SPACING MECHANISM FOR TYPE-WRITERS.

993,584. Specification of Letters Patent. Patented May 30, 1911.

Application filed January 3, 1907. Serial No. 350,636.

To all whom it may concern:

Be it known that I, GEORGE WILLIAM DAVIS, of Westmount, Province of Quebec, Canada, have invented certain new and useful Improvements in Line-Spacing Mechanism for Type-Writers; and I hereby declare that the following is a full, clear, and exact description of the same.

My invention may be said, briefly, to consist of the several combinations and arrangements of parts hereinafter described and pointed out in the claims.

For full comprehension, however of the invention, reference must be had to the accompanying drawings forming a part of this specification in which like symbols indicate corresponding parts and wherein,

Figure 1 is an end elevation of the means, one whereby the platen is rotated; Fig. 2 is a rear view of one end of the vibratory carriage and illustrating in side view particularly the parts shown in Fig. 1, together with the paper presser roll; Fig. 3 is a detailed side elevation of the spindle and illustrating the eccentric in dotted lines; Fig. 4 is a side elevation of the stud upon which the bell-crank-lever is mounted; Fig. 5 is a front and side elevation of the eccentric; Fig. 6 is a side elevation of the lock for retaining the ratchet wheel in any angular position to which it may be moved; Fig. 7 is a perspective view of the bell-crank-lever; Fig. 8 is a perspective view of the spacing pawl; Fig. 9 is a perspective view of the throw-out device; Fig. 10 is a side elevation of the latching device:—Fig. 11 is a plan view thereof.

The line spacing mechanism consists of means whereby the platen is rotated by the operator, means whereby the extent of rotation (and, consequently, the space between the lines) is varied, and means for locking the platen against accidental rotation. Of these several mechanisms those to which this invention has reference are the means for varying the extent of rotation and the locking means, the remainder of this spacing mechanism being as heretofore constructed.

The ratchet wheel 100 mounted upon the shaft 101 of the platen 71 is acted upon by the line spacing pawl 103 pivoted to one arm 104 of a bell-crank lever pivoted in turn upon a stud 105 carried rigidly by a bracket extension 106 formed integrally with the adjacent end of the vibratory carriage. The other arm, 107, of this bell-crank-lever is in the form of a finger piece, and the line space pawl 103 is held yielding out of engagement with the ratchet wheel and in contact with an eccentric 108, by a spring 109. This pawl is adjusted relatively to the ratchet wheel by the eccentric, and the movement of the finger piece toward the ratchet wheel rotates the latter to an extent dependent upon the extent of movement allowed to the pawl by the said adjustment.

The lock for retaining the ratchet wheel in any angular position to which it may be moved, consists of an arm 110 pivoted upon a stud 112 screwed into the bracket extension 106 and having a roll 113 for engaging and retarding the ratchet wheel and a "throw out" device mounted at its upper end, the roll being mounted upon a stud 113^a, which also constitutes the means for pivotally connecting the "throw out" device to the arm.

The "throw-out" device consists of sheet metal cut to present a handle 114, a small lug 1141 and a lug 1142 adapted to bear upon the outer face of the ratchet wheel 100 when the handle 114 is moved to throw out the roll 113. The said arm 110 is held yieldingly in position with the "throw out" device in bearing relation with the ratchet wheel by a spring 1120^a to be presently further alluded to, and such arm constitutes a combined brake for the ratchet wheel and roll throw-out or displacer.

The stud 105 (Fig. 4) is tubular, and a spindle 114^a (Fig. 3) with a knurled head 115, is mounted loosely therein and has the eccentric 108 (Fig. 5) mounted rigidly upon the end thereof. A spring 116 (Fig. 2) yieldingly retains the head 115 adjacent to the end of the stud and in bearing relation with a latching device consisting of an offset plate 117 secured at one end by screws 118 to the top of the bracket extension 106 and having its opposite end bent as at 119 upwardly and outwardly over the knurled head 115, the upwardly extending portion having a teat 120 adapted to engage notches in the rear side of the head. These notches are preferably disposed at regular intervals and constitute graduations, while corresponding graduations are marked upon the outside face of the head and the outwardly projecting end of this device is pointed and acts as an index finger in conjunction with the graduations which are numbered preferably on the exposed face of the head 115.

By rotating this head the eccentric is adjusted to the different angular positions indicated by these graduations and, consequently, the pawl is set in different definite positions relatively to the ratchet wheel and the line space is correspondingly adjusted.

A further novel feature in connection with this improved typewriting machine consists of the formation of the arm 110 (Fig. 6) from a straight piece of sheet metal and it is pivotally mounted on the stud 112 and yieldingly retained in its operative position, relatively to the ratchet wheel, by the coiled expansile spring 120ª (before mentioned) encircling a sleeve 112ª upon the stud and having one end connected to the lower end of the arm and its other end to the bracket extension 106. This last mentioned arrangement affords the required room for the graduated knurled head 115 and the device is more durable and of less weight than other devices for a like purpose.

I do not claim the paper feeding mechanism herein disclosed as it forms the subject matter of a separate application filed by me on September 21, 1910, under Serial No. 583,092.

What I claim is as follows:—

1. In a typewriting machine the combination with a carriage having a platen roll mounted in its upper portion and a bracket extension, of a bell crank lever fulcrumed to the bracket extension, a line space pawl pivotally carried by one arm of the bell crank lever, a rotary graduated member, means operatively connecting such member to the line space pawl, a latching device adapted to have the graduations of the graduated member register therewith, and means effecting a frictional engagement between the graduated member and latching device.

2. In a typewriting machine line spacing means comprising in combination, a carriage having a bracket extension, a platen roll, a ratchet wheel carried by the platen roll, a tubular stud carried by the bracket extension, a bell-crank lever fulcrumed upon the stud, a line space pawl pivotally carried by one arm of the bell-crank lever, a spindle mounted loosely in the said stud and having a knurled head with graduated notches, an eccentric mounted rigidly upon such spindle, a pointed latching plate carried by the said bracket extension and projecting over the knurled head, a spring retaining the knurled head in bearing relation with the latching plate, a frictional engagement between the knurled head and latching plate and a spring retaining the pawl out of engagement with the ratchet wheel and in bearing relation with the eccentric.

3. In a typewriting machine line spacing means comprising in combination, a carriage having a bracket extension, a platen roll, a ratchet wheel carried by the platen roll, a tubular stud carried by the bracket extension, a bell-crank lever fulcrumed upon the stud, a line space pawl pivotally carried by one arm of the bell-crank lever, a spindle mounted loosely in the said stud and having a knurled head with graduated notches, an eccentric mounted rigidly upon such spindle, a pointed latching plate carried by the said bracket extension and projecting over the knurled head, a teat upon such latching plate engaging the said notches in the head, a spring retaining the knurled head in bearing relation with the latching plate, a spring retaining the pawl out of engagement with the ratchet wheel and in bearing relation with the eccentric.

4. In a typewriting machine line spacing means comprising in combination, a carriage having a bracket extension, a platen roll, a ratchet wheel carried by the platen roll, a tubular stud carried by the bracket extension, a bell-crank lever fulcrumed upon the stud, a line space pawl pivotally carried by one arm of the bell-crank lever, a spindle mounted loosely in the said stud and having a knurled head with graduated notches, an eccentric mounted rigidly upon such spindle, a pointed latching plate carried by the said bracket extension and projecting over the knurled head, a teat upon such latching plate engaging the said notches in the head, a spring retaining the knurled head in bearing relation with the latching plate and a spring retaining the pawl out of engagement with the ratchet wheel and in bearing relation with the eccentric.

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

GEORGE WILLIAM DAVIS.

Witnesses:
WILLIAM P. MCFEAT,
FRED J. SEARS.