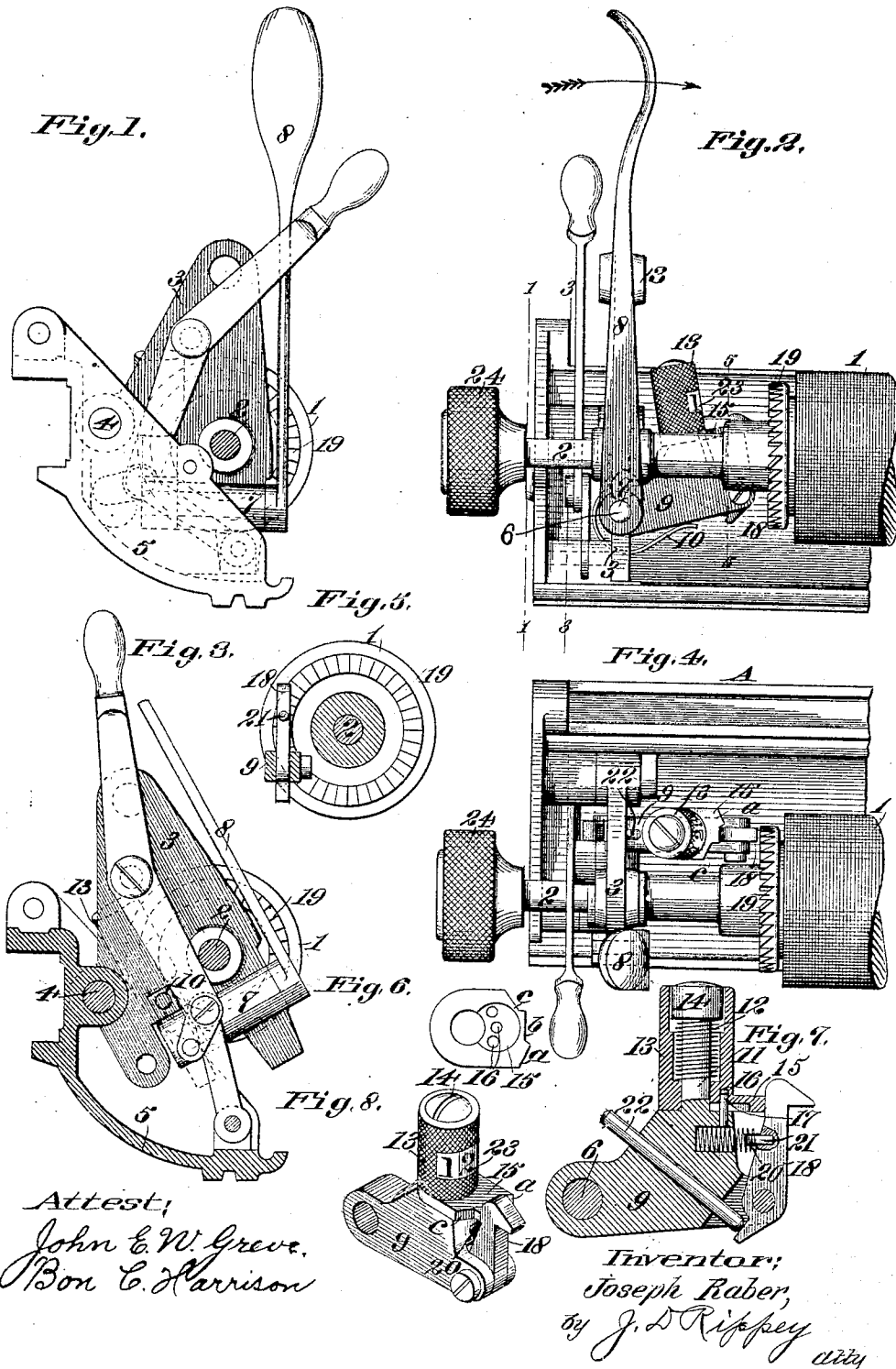


J. RABER.
TYPE WRITER LINE SPACING MECHANISM.
APPLICATION FILED NOV. 2, 1908.

1,056,213.

Patented Mar. 18, 1913.



UNITED STATES PATENT OFFICE.

JOSEPH RABER, OF POPLAR BLUFF, MISSOURI, ASSIGNOR TO DALTON ADDING MACHINE COMPANY, OF ST. LOUIS, MISSOURI, A CORPORATION OF MISSOURI.

TYPE-WRITER LINE-SPACING MECHANISM.

1,056,213.

Specification of Letters Patent.

Patented Mar. 18, 1913.

Application filed November 2, 1908. Serial No. 460,619.

To all whom it may concern:

Be it known that I, JOSEPH RABER, a citizen of the United States, residing at Poplar Bluff, Missouri, have invented a new and useful Type-Writer Line-Spacing Mechanism, of which the following is a specification.

This invention relates to typewriting machines, and more particularly to platen feed or line spacing mechanism of typewriting machines, and has for its object to provide an efficient mechanism to rotate the platen to feed the paper in its line spacing movements, and having means which may be adjusted so that the platen will be operated to move the paper one, or more, spaces, as desired.

With this object in view I have illustrated one embodiment of the mechanism for feeding the paper, Figure 1 being an end view of a platen carriage having the line spacing mechanism mounted thereon. Fig. 2 is a front view of that portion of the platen carriage in which the line spacing devices are mounted. Fig. 3 is a sectional view approximately on the line 3—3 of Fig. 2. Fig. 4 is a plan view of the line spacing mechanism and that part of the platen carriage which supports it. Fig. 5 is a sectional view of the platen shaft and pawl support on the line 5—5 of Fig. 2. Fig. 6 is a detail view of the device whereby the engaging pawl is adjusted to regulate rotation of the platen. Fig. 7 is a sectional view of the pawl-support and adjusting device. Fig. 8 is a perspective view of the pawl-support and the adjusting device.

The platen 1 is of the usual construction being rigid on a shaft 2 which is revolubly journaled in bearings in the end plates 3 of the platen frame. The said plates 3 are pivoted at 4 to the platen carriage 5. These parts may be of any preferred arrangement, construction and operation, and the present invention is combinable with any of the various types.

A shaft 6 is journaled in a horizontal bearing 7 on the plate 3 at the left side of the machine underneath the platen shaft and at right angles thereto. On the front end of the shaft 6 a lever 8 is attached, and on the rear end is an arm 9 extending toward the end of the platen. A spring 10 has one end attached to the plate 3 and the other end extending under and constituting a

yielding support for the arm 9, thereby sustaining said arm in an oblique position and the shaft 6 in proper position. The arm 9 has a substantially vertical extension 11 (Fig. 7) which is encircled by a spring 12. A sleeve 13 incloses the extension 11 and spring 12, and both the spring and sleeve are retained on the extension by a nut 14 which constitutes an abutment for the outer end of the spring. The inner end of the spring has for an abutment an offset or shoulder in the sleeve, so that the sleeve is yieldingly held in its lower position on the arm 9 which carries it. At the lower end or base of the sleeve is a flange 15 provided on its outer edge with a number of notches or offsets—three in the present instance—designated by *a*, *b* and *c*, respectively. These offsets are at different distances from the axis of the sleeve, the one designated by *a* being the farthest, the one designated by *b* being next, and the one designated by *c* the next. Corresponding to these offsets a number of holes 16 are formed in the lower end of the sleeve, said holes being intended to receive a pin or projection 17 on the arm 9 and thereby securely hold the sleeve and flange in any of their adjustments. The surface of the sleeve is knurled or spotted whereby it may be firmly engaged manually, to be drawn upwardly in opposition to the spring therein and turned to its different adjustments as required to engage the pin 17 in one of the holes 16. A pawl 18 is pivoted on the arm 9 and is actuated toward the ratchet wheel 19 which is rigid on the platen shaft by a spring 20. The spring 20 is seated in a hole in the arm 9 having said arm for an abutment, with its outer end bearing against the pawl 18, being sustained and prevented from being displaced by a pin 21 on the pawl projecting into the spring. A sliding pin 22 extends obliquely downward and inward through a hole in the arm 9, having its lower end resting against an extension of the pawl 18 below the pivot of the pawl, and its upper end abutting against the inner side of the plate 3 thereby holding the pawl out of engagement with the ratchet wheel 19 when said parts are in their idle position, in which they are held and to which they are returned after each operation by the spring 10.

Corresponding to the offsets *a*, *b* and *c* a gage scale 23 is formed on the surface of

the sleeve 13, whereby the operator may readily discern, in advance, to what extent the paper will be fed when the line spacing mechanism is operated.

5 To rotate the platen as required to feed the paper the lever 8 is oscillated in the direction indicated by the arrow in Fig. 2 until and after engagement of the pawl 18 with the ratchet wheel 19. As the pawl
10 recedes from the plate 3 the sliding pin 22 allows the spring 20 to actuate the pawl into engagement with the ratchet wheel and continued movement thereof rotates the platen. Rotation of the platen may continue until
15 the flange 15 abuts against the pawl after which, obviously, the lever and pawl are locked against further movement. The arrangement is such that the platen may be rotated in this way either one, two or three
20 spaces, the distance of rotation being dependent on the adjustment of the flange 15. That is, if the flange be adjusted so that the offset *a* will engage against the pawl the platen will be rotated, and the paper fed,
25 one line space; the offset *b* permits movement of two line spaces; and the offset *c* allows the platen to rotate as required to feed the paper three line spaces. Obviously, by following this principle of regulating operation of the pawl and lever the platen may
30 be rotated to feed the paper any distance required in commercial usage. Knobs 24 are on the platen shaft whereby the platen may be manually rotated in the usual way.
35 It will be observed that there may be variations in the construction and arrangement of the parts comprising this invention without in the least departing from the spirit and scope of the invention. I do not restrict myself to identical features or arrangement, but

What I claim and desire to secure by Letters Patent is:

1. The combination with a platen, and a
45 ratchet wheel, of a pivotally-supported arm, a spring actuating said arm in one direction, a pawl carried by said arm, a sliding pin disconnected from said spring effective to hold said pawl out of contact with said
50 ratchet wheel when in idle position, means for causing said pawl to engage with said ratchet wheel and rotate the platen, and means whereby the pawl and platen will be stopped when the platen has rotated the desired number of line spaces, substantially as
55 specified.

2. A revoluble platen, and a ratchet wheel in rigid connection with said platen, in combination with a pawl, a rockable support for
60 said pawl, a spring actuating said pawl toward the ratchet wheel, a sliding pin mounted separately from said spring and effective to hold said pawl out of engagement with the ratchet wheel, manually operable means for rocking said support and

causing said pawl to rotate the platen, and means carried by said rockable support for stopping the platen at one or more spaces of movement, as desired, substantially as specified.

3. The combination with a platen, and
70 a ratchet wheel, of a pivotally-mounted arm, a spring sustaining one end of said arm, a pawl pivoted to said arm, a sliding pin supported by said arm and holding said pawl out of engagement with the ratchet wheel, means for causing said pawl to engage with
75 the ratchet wheel and thereby rotate the platen, and a movable gage device carried by said arm whereby the pawl and ratchet wheel are locked together and prevented from moving beyond a predetermined distance, substantially as specified.

4. The combination with a revoluble platen, and a ratchet wheel, of a pivoted
85 arm, a pawl pivoted to said arm, a sliding pin carried by said arm and holding said pawl away from said ratchet wheel, means for causing said pawl to engage with said ratchet wheel and rotate the platen, a gage device carried by said arm whereby said
90 pawl will be prevented from moving past a predetermined point, and a series of stops on said gage device whereby said pawl may be stopped in one of several positions, substantially as specified.

5. The combination with a platen, of a pawl, a spring and sliding pin separate from said spring cooperating effectively to hold
100 said pawl in idle position out of engagement with said platen, means for causing said pawl to rotate the platen, and locking means whereby rotation of the platen may be stopped after turning a predetermined distance, substantially as specified.

6. The combination with a platen, and a
110 ratchet wheel, of a shaft journaled below the platen shaft, an arm connected to said shaft, a pawl pivoted to said arm, a gage to abut against said pawl, a spring and sliding pin cooperating effectively to hold said pawl away from the ratchet wheel, and means for moving said pawl into engagement with the ratchet wheel, substantially as
115 specified.

7. The combination with a platen, and a
120 ratchet wheel, of a pivotally-mounted arm, a spring actuating said arm in one direction, a pawl pivoted to said arm, a pin carried by said arm, means for causing said pin to hold said pawl out of engagement with said ratchet wheel, a spring carried by said arm and actuating said pawl into engagement with said ratchet wheel when said pin is released, and a locking device to prevent excess movement of said pawl, substantially as
125 specified.

8. The combination with a platen, and a
130 ratchet wheel, of an arm, a spring actuating said arm in one direction, a pawl pivoted to

said arm, a spring seated in said arm and actuating said pawl toward said ratchet wheel, means for holding said spring in proper position against said pawl, a sliding abutment pin carried by said arm for said pawl, and means for operating said arm effectively to engage said pawl with said ratchet wheel, substantially as specified.

9. The combination with a platen shaft, a platen on said shaft, and a ratchet wheel supported by said shaft, of a shaft below the platen shaft, an arm on said last-named shaft, a pawl pivoted to said arm, a spring seated in said arm and actuating said pawl toward said ratchet wheel, a sliding pin in said arm constituting an abutment for said pawl, a handle whereby said pawl may be engaged with said ratchet wheel, and an adjustable stop device carried by said arm and being effective to limit movement of said pawl when said handle is operated, substantially as specified.

10. The combination with a platen, and a toothed wheel, of a movable support, a pawl carried by said support, an adjustable abutment carried by said support for said pawl, means for holding said abutment in different adjustments, means for moving said support effectively to engage said pawl with said toothed wheel, and a spring between said pawl and said support moving said pawl toward said wheel faster than the movement of said support whenever said support and said pawl are operated as aforesaid, substantially as specified.

11. The combination with a platen, and a toothed wheel, of a pawl, a movable support for said pawl, a movable element carried by said support for engaging an extension on said pawl, a spring cooperating with said element effectively to hold said pawl in idle position out of engagement with said wheel, means for causing said pawl to move said movable element and to rotate said platen, and means whereby rotation of the platen may be stopped after turning a predetermined distance, substantially as specified.

12. The combination with a platen, and a toothed wheel, of a movable support, a pawl carried by said support, a movable element and a spring cooperating to hold said pawl out of engagement with said wheel, means for moving said support effectively to move said pawl toward said wheel, means carried by said support for causing said pawl to move said movable element and also to move said pawl toward said wheel faster than the movement of said support when said support is moved as aforesaid, substantially as specified.

13. The combination with a platen and a ratchet wheel connected with said platen, of a pivoted support, a pawl pivoted on said support, a spring, a movable element carried by said pivoted support separate from and

controlled by said spring effectively to hold said pawl in idle position out of engagement with said wheel, means for moving said movable element to permit said pawl to operate faster than said support, and means for causing said pawl to engage said wheel and rotate said platen, substantially as specified.

14. The combination with a platen and a toothed wheel rigid with said platen, of a shaft, a support on said shaft, a pawl pivoted on said support, a movable element carried by said support, a spring controlling said support and movable element effectively to hold said pawl out of engagement with said wheel, actuating means whereby said movable element will be moved when said support is moved, and a lever operable to cause said pawl to engage with said wheel and rotate said platen, substantially as specified.

15. The combination with a platen, and a toothed wheel rigid with said platen, of a support, a pawl carried by said support, a spring, a separate movable element carried by said support and controlled by said spring effectively to hold said pawl out of engagement with said wheel, a lever operable to rock said support to engage said pawl with said wheel and rotate said platen, means for causing said pawl to move said movable element, an adjustable stop carried by said support and being effective to limit movement of said pawl when said lever is operated, a latch for holding said stop in different adjustments and a spring actuating said stop to engage said latch, substantially as specified.

16. The combination with a platen shaft, a platen on said shaft, and a toothed wheel rigid with said platen, of a shaft supported at right angles to said platen shaft, a support attached to said second-named shaft at one side of said platen shaft, a handle attached to said second-named shaft at the opposite side of said platen shaft, a pawl carried by said support and arranged to engage with said wheel when said handle is operated, an element effective to move said pawl toward said wheel faster than the movement of said support, and an adjustable stop carried by and moving with said support to limit movement of said pawl, substantially as specified.

17. The combination with a platen, and a toothed wheel rigid with said platen, of a rockable support, a pawl pivoted on said support, an extension on said pawl, a spring tending to move said pawl toward said wheel, a sliding pin carried by said rockable support and arranged to engage with said extension on said pawl to hold said pawl normally out of engagement with said wheel, a spring effective to actuate said support and said pawl away from said wheel and to cause said movable element normally to engage

said extension as aforesaid, and a lever operable to cause said pawl to engage with said wheel and rotate said platen, substantially as specified.

5 18. The combination with a platen and a toothed wheel rigid with said platen, of a support, a pawl carried by said support, a spring carried by said support and tending to move said pawl into engagement with
10 said wheel, a movable element carried by said support, a lever operable to cause said pawl to engage with said wheel and rotate said platen, a spring actuating said support and causing said movable element to hold
15 said pawl out of engagement with said wheel, an adjustable stop carried by said support with which said pawl engages in idle position and after said wheel and platen have been rotated the required distance, and
20 means for holding said stop in different adjustments, substantially as specified.

19 The combination with a platen, and a toothed wheel rigid with said platen, of a rockable support, a pawl carried by said
25 support, a spring actuating said pawl toward said wheel, a movable element carried by said support, a spring for causing said movable element to hold said pawl out of engagement with said wheel, means for moving
30 said support to engage said pawl with said wheel, an adjustable stop carried by said lockable support and being effective to limit movement of said pawl, a latch device on said support to hold said stop in any of
35 its adjustments, a sleeve on said stop and a spring incased within said sleeve for holding said stop in engagement with said latch device, substantially as specified.

20. The combination with a platen, of a support, a pawl carried by said support, means for holding said pawl out of engagement with said wheel, means for moving
40 said support to engage said pawl with said wheel, an extension on said support, a sleeve encircling said extension, a series of stops for said pawl on said sleeve, a latch pin engaging with said sleeve to hold any desired
45 stop in position to be engaged by said pawl, and a spring incased by said sleeve and holding said sleeve in engagement with said latch pin, substantially as specified.

21. The combination with a platen, and a ratchet wheel rigid with said platen, of a plate in which said platen is journaled, bearings carried by said plate, a shaft mounted
55 in said bearings, a pawl support attached to said shaft, a pawl pivoted on said support, a sliding pin carried by said support and arranged to engage an extension on said pawl.
60 a spring actuating said support to cause said pin to engage said plate and said extension

on said pawl, and a lever for rocking said shaft in opposition to said spring to engage said pawl with said wheel, substantially as specified.

22. The combination with a platen, and a ratchet wheel rigid with said platen, of a plate in which said platen is journaled, bearings carried by said plate, a shaft mounted
65 in said bearings, a pawl support attached to said shaft, a pawl pivoted on said support, a sliding pin carried by said support, a spring actuating said support and causing said sliding pin to engage said plate and an extension on said pawl, a lever for engaging
70 said pawl with said ratchet wheel, a spring for actuating said pawl toward said ratchet wheel when said lever is operated, and a stop device limiting movement of said pawl, substantially as specified.

23. The combination with a platen, and a ratchet wheel rigid with said platen, of a plate in which said platen is journaled, bearings carried by said plate, a shaft journaled
85 in said bearings, a pawl support attached to said shaft, a pawl pivoted on said support, a sliding pin carried by said pawl support, a spring causing said pin to engage with said plate and with said pawl, a lever for moving said pawl into engagement with said ratchet
90 wheel, a spring actuating said pawl toward said ratchet wheel, and an adjustable stop device carried by and moving with said pawl support for limiting movement of said pawl, substantially as specified.

24. The combination with a platen, and a ratchet wheel rigid with said platen, of a plate in which said platen is journaled, bearings carried by said plate, a shaft journaled
100 in said bearings, a pawl support attached to said shaft, a pawl pivoted on said support, a sliding pin carried by said support, a spring between said pawl and said support for actuating said pawl toward said ratchet
105 wheel, a stronger spring causing said sliding pin to engage with said pawl and hold said pawl out of engagement with said ratchet wheel, a lever for engaging said pawl with said ratchet wheel, a stop device carried by and moving with said pawl support, and a
110 latch device for holding said stop device in different adjustments, substantially as specified.

In testimony whereof, I hereunto affix my signature to this specification this 18th day
115 of Sept., 1908, in the presence of two witnesses.

JOSEPH RABER. [L. s.]

Witnesses:

RUDOLPH J. HOELLER,
JOHN E. W. GREVE.