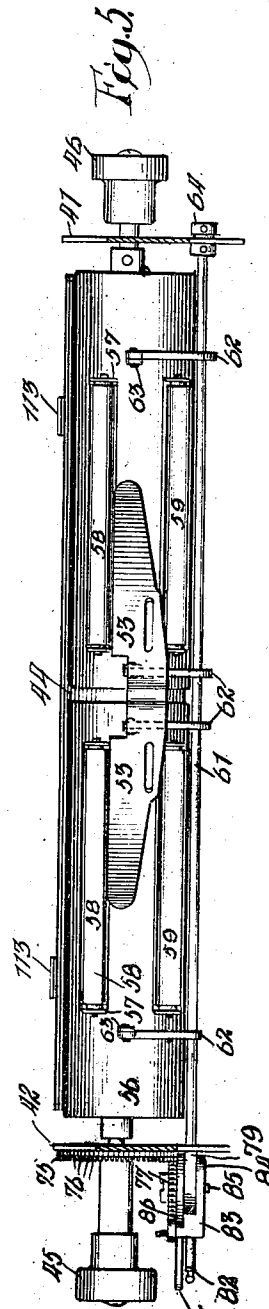
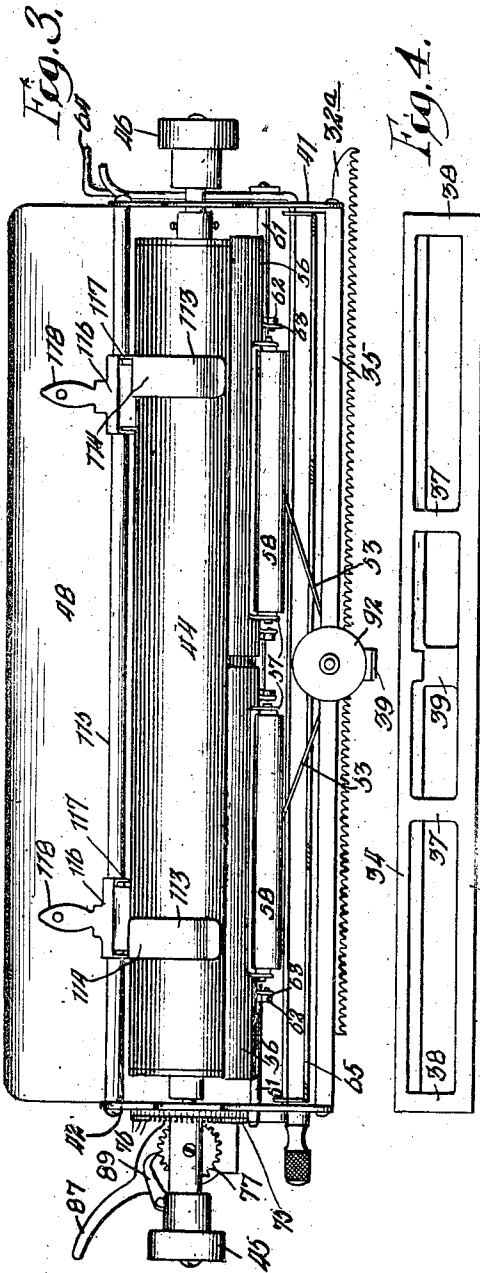


R. W. UHLIG.
TYPE WRITER CARRIAGE MECHANISM.
APPLICATION FILED JAN. 19, 1909.

950,196.

Patented Feb. 22, 1910.

3 SHEETS—SHEET 2.



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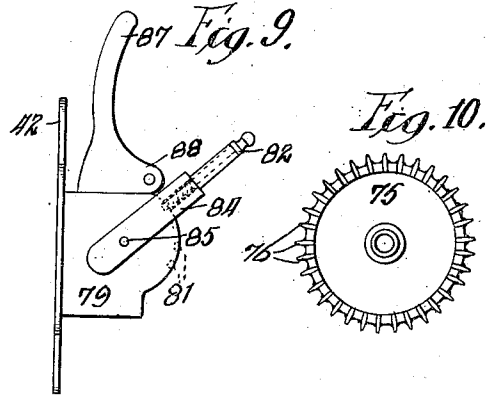
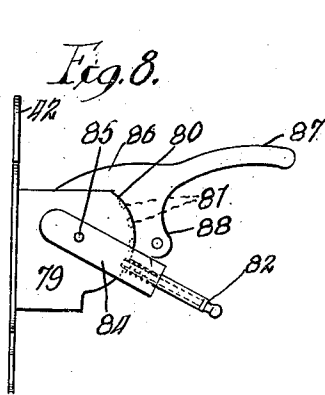
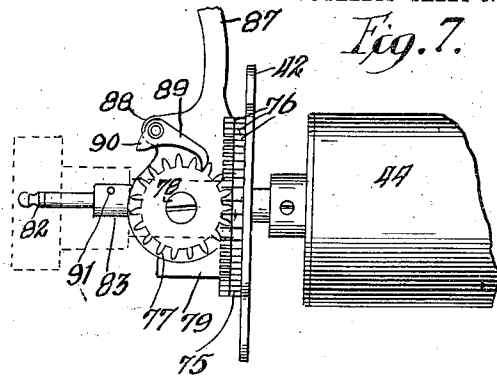
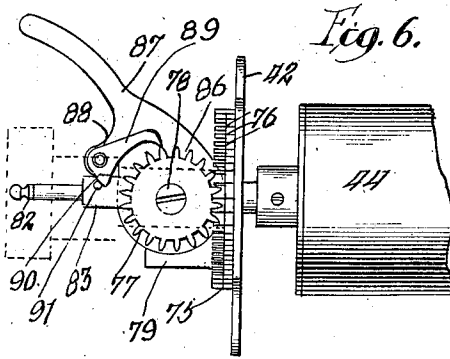


Fig. 10.

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UNITED STATES PATENT OFFICE.

RICHARD W. UHLIG, OF RUTHERFORD, NEW JERSEY, ASSIGNOR TO EMERSON TYPE-WRITER COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF MAINE.

TYPE-WRITER CARRIAGE MECHANISM.

950,196.

Specification of Letters Patent. Patented Feb. 22, 1910.

Application filed January 19, 1909. Serial No. 473,176.

To all whom it may concern:

Be it known that I, RICHARD W. UHLIG, a citizen of the United States, residing at Rutherford, in the county of Bergen and State of New Jersey, have invented certain new and useful Improvements in Type-Writer Carriage Mechanism, of which the following is a specification.

This invention relates to the construction of the line spacing mechanism for the platen; to the spring compressed paper guide plate for holding the paper closely adjacent to the platen and the compression rollers carried thereby in such manner as to admit easy insertion of the paper and at the same time hold the paper in firm contact with the platen during printing operation, and to the construction and arrangement of the carriage mechanism for mounting and supporting the devices above referred to.

Further objects will appear from a detailed description of the invention, which consists in the features of construction and combination of parts hereinafter described and claimed.

In the drawings Figure 1 is a sectional elevation from front to rear through the center of a typewriter, showing the platen moved to a position to bring the right end thereof in elevation; Fig. 2 an enlarged cross sectional view of the platen, carriage and associated parts; Fig. 3 a front elevation of the platen and carriage; Fig. 4 an inverted plan view of the carriage frame; Fig. 5 an inverted plan view, showing the carriage frame removed; Figs. 6 and 7 enlarged details showing the line spacing lever and gear mechanism for moving the platen; Figs. 8 and 9, rear elevations of the line spacing lever in different positions of adjustment; and Fig. 10 a face view of the platen gear.

Referring to Fig. 1, the mechanism is mounted upon a rectangular frame comprising side walls 15, a front cross wall 16, and a rear cross wall 17. The frame further comprises a flat top wall 18, and the side walls are carried forward in the form of extensions 19 connected by a front cross rail 20 which provides a space for the reception of key levers 21, one only of which is shown. The key levers are all hung on a key lever rod 22, and each of the key levers is provided with an upwardly extending prong

23 which engages a universal bar 24, which is hung from and hinged to a cross rod 25, the ends of which are mounted in the side walls of the frame. The universal bar has depending therefrom an arm 26 which engages the forward end of a feed lever 27 provided at its rear end with a catch finger 28, and provided, forward of said catch finger, with a slot 29 which engages the lower end of a pivoted dog finger 30, the upper end of which projects above the top wall or floor of the frame in the form of an escapement dog 31, which coacts with a stop dog 32 in normally feeding the carriage. This dog mechanism is of an old and well known type and need not be described in detail. The escapement dog engages with a toothed carriage rack bar 32^a which is in the form of a thin plate of metal inserted edgewise within a channeled socket bar 33 which extends from end to end of and is integrally formed with the rear rail 34 of a carriage frame, as best shown in Fig. 2.

The carriage frame comprises the rear rail 34 and a front rail 35 which is parallel thereto and is connected therewith by means of end cross bars 36, and intermediate cross bars 37, as best shown in Fig. 5^a. The carriage frame is further provided in its center with a cross lug 38 which extends across from and is flush with the channeled socket bar 33, as best shown in Fig. 2. This lug provides a mounting for a forwardly extending guide plate 39 which engages with an undercut guide rail 40 which is secured to and extends transversely across the floor of the machine frame at a point adjacent to the carriage mechanism. The carriage frame has secured to its end rails, upwardly extending end plates 41 and 42, which serve as journal mountings for a platen shaft 43, which carries a platen 44 of the usual character. The ends of the shaft are extended to receive milled adjusting wheels 45 and 46 respectively. The end plates are connected by means of a top rail 47 of angle bar formation, which top rail carries a diagonally disposed paper rest plate 48, the lower edge of which extends down into close proximity to the surface of the platen. The rail 47 has depending therefrom a pair of lugs 49 provided with socket recesses 50, which embrace a guide rod 51 mounted upon posts 52 which upwardly project from

the top of the machine frame near the rear edge thereof and serve to hold the guide rod rigidly in position to afford a mounting for the travel of the carriage. The carriage frame has secured to the top of its center lug 38, and between the side rails of the frame, the center of a bowed spring 53 the ends of which upwardly project therefrom. The free ends of the bowed spring 53 bear against the under face of movable paper guide plates 56 of curved formation, which underlie the platen and are held in close proximity thereto by the action of the spring. The rear edges of the guide plates lie closely adjacent to the forward edge of the paper rest plate, so that the paper will be fed from one to the other without difficulty. The guide plates are provided with tongues 57 which are struck down from the metal composing the plates and serve as journal mountings for a pair of forward rubber guide rollers 58 and rear rubber guide rollers 59, which are mounted in position to project their acting surfaces through suitable elongated slots 60 in the guide plates. The guide plates are arranged end to end, so that in effect they form but a single guide plate. To the rear of the guide plates is located a rock shaft 61, to which are secured two pairs of forwardly extending rock fingers 62, which are pivoted to ears 63 struck down from the metal of the guide plates near the longitudinal center thereof. The ends of the rock shaft are journaled within the end plates, and the right hand end is provided with an upwardly extending lever 64, which permits the shaft to be rocked, which oscillates and carries down the guide plates from a position, in which the rollers are in engagement with the platen to a position in which a space is afforded for the insertion of a sheet of paper.

The platen shaft, near its left hand end, and outside of the left end plate, has mounted thereon a gear wheel 75 having outwardly projecting teeth 76 formed on its outer face around its periphery, which teeth mesh with the teeth of an operating spur gear wheel 77, which is journaled upon a screw stud 78 forwardly projecting from a plate 79 which projects at right angles from the outer face of the left end plate 42 immediately behind the projecting end of the platen shaft. The plate 79 is rounded on its outer edge 80, which edge is provided with a plurality of holes 81, any one of which is adapted to be engaged by the inner end of a spring actuated pin 82 slidably mounted within and normally projecting through the overhanging end 83 of a swinging arm 84, the inner end of which is pivoted to a stud 85, rearwardly projecting from the end of the screw stud 78. Intermediate the actuating gear wheel 77 and the plate 79 is a disk 86 which has formed thereon a lever 87 provided with

a projection 88 which has pivoted thereto a dog 89 which engages the teeth of the actuating gear wheel. The dog is provided with a detent 90 adapted to engage a stop pin 91 which outwardly projects from the end 83 of the swinging arm 84. The construction is one which permits the arm to be adjusted to a selected position, thereby regulating the movement of the dog. This enables the platen to be moved a selected number of line spaces with each swing of the lever 87.

The travel of the carriage is facilitated by the provision of a wheel 92 which rides upon the upper surface of the undercut bar 40, the under face of which is engaged by the forward edge of the plate 39.

The edges of the paper are adapted to be held in position by adjustable guides 113 which are in the form of bars overlying the platen. Each of the bars is provided, on its outer side, with a tongue 114, which is pivoted to a guide supporting rod 115 located immediately above the platen, the ends of which are supported by the end plates. The tongue 114 has inwardly projecting therefrom a bracket 116, provided at its inner end, with an ear 117, which is bored to receive the rod 115. The bracket serves to provide an elongated mounting for the guide to permit it to be shifted to any desired position upon the rod. The bracket 116 is provided with a handle 118 to the rear face of which is riveted a flat spring 119, the free end of which is adapted to engage a slot or channel 120 formed in the rear side of the rod. The arrangement is such that when the guide plates are thrown down to bring their free ends into contact with the platen, the free ends of the springs will engage the slot, as shown in Fig. 2, and hold the guides in contacting position. The shape of the guide bars is such that their upper ends diverge away from the surface of the plates, thereby permitting the free escape of the paper from the upper ends of the bars.

In use, the paper is fed into the machine over the paper rest and between the guide plates and the platen, and the forward edge of the paper is thereafter carried up under the guides which, during the adjustment of the paper, can be thrown back, to provide ample space for the positioning of the paper. The guide plates can be retracted from the platen by the movement of the lever 63, so that no difficulty will be experienced in initially positioning the paper prior to the printing operation.

The construction of the carriage frame is one which forms a strong and rigid support for the various operating mechanisms, and the channeled bar 33 furnishes a very satisfactory mounting for the rack bar, permitting the latter to be made from hardened

steel and rigidly held within the carriage frame, which may be of cast metal. The line spacing gear mechanism permits the platen to be turned to any desired extent to feed the paper forward to the proper degree to secure the desired line spacing, and this without the necessity for the exercise of care on the part of the operator. Four adjustments of the arm 84 can be made, which permit the platen to be fed forward, with each movement of the lever, from one to four spaces, which arrangement permits the line spacing to be easily and quickly regulated by the operator. The method of forming the guide plates and mounting the compression rollers thereon, is one which affords a firm and uniform compression for the paper against the platen, and serves to hold its surface smoothly in position to receive the impression of the type. The mechanism, as a whole, is extremely simple in construction and operation, and at the same time is strong, durable and reliable.

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

1. In combination with a platen and carriage, a gear wheel connected with the platen, a pinion in mesh with said gear wheel, a dog engaging said pinion, a pivoted lever upon which the dog is mounted, a pivotally mounted stop member adjacent to the lever and provided with an overhanging portion, a spring supported pin entered through the overhanging portion, and a fixed member over which the overhanging portion is adapted to ride, said fixed member being provided with a plurality of holes, any one of which is adapted to receive the inner end

of the pin for adjusting the throw of the dog, substantially as described. 40

2. In mechanism of the class described, the combination of a carriage frame provided with end plates, a platen journaled between the end plates, a rod above the platen having its ends rigidly entered into the end plates and provided with a longitudinal groove, two paper guides slidably and pivotally mounted on the rod, each of the guides comprising a plate provided, on its upper edge, with a tongue embracing the rod, said tongue having connected therewith an ear likewise embracing the rod, a handle connected with each guide, and a flat spring having its outer end secured to the handle and having its inner end in position to engage with the slots in the rod when the free end of the paper guide is depressed to engage the platen, substantially as described. 45 50 55

3. In typewriters the combination of a frame, a platen carried by the frame, a bow spring of substantially V formation, having its center secured to the frame below the platen, a pair of curved guide plates engaged by the free ends of the bow spring, a pair of compression rollers journaled to each guide plate and bearing against the surface of the platen, a rock shaft, and arms on the rock shaft pivotally connected with the guide plates near their longitudinal centers, adapted, when the rock shaft is turned, to retract the guide plates away from the platen, substantially as described. 60 65 70

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