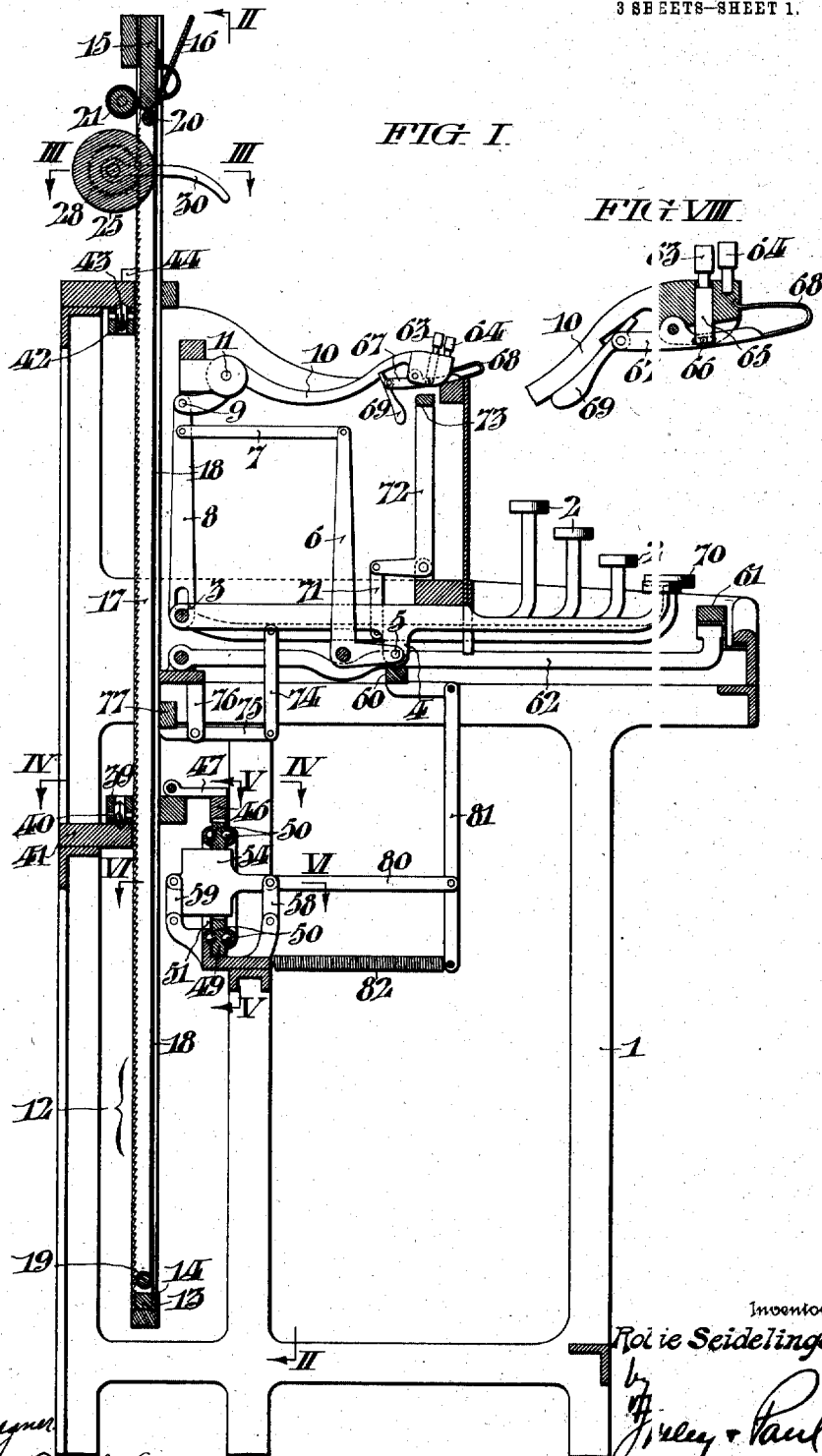


R. SEIDELINGER.
TYPE WRITER.
APPLICATION FILED MAY 26, 1910.

1,008,497.

Patented Nov. 14, 1911.

3 SHEETS-SHEET 1.



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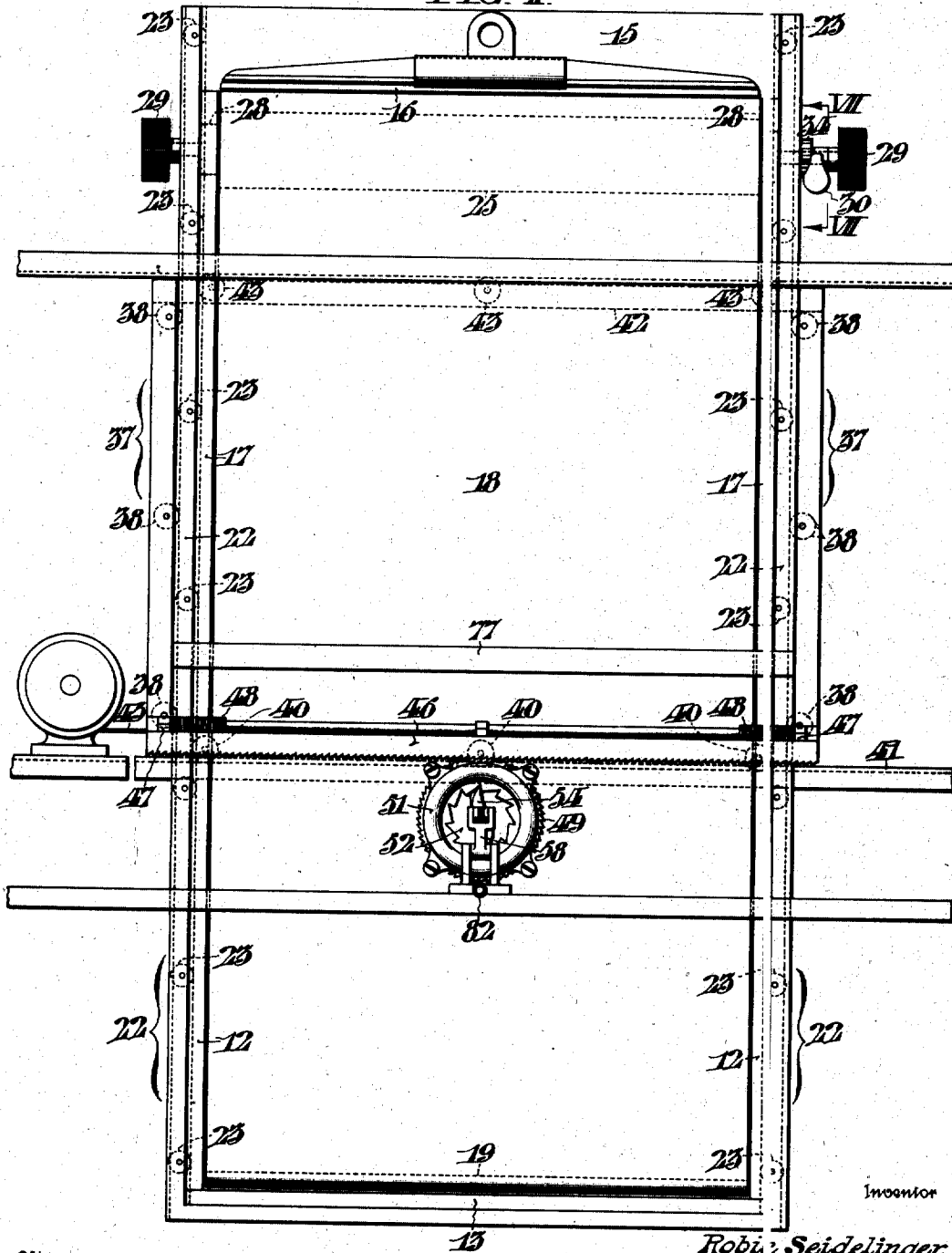
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3 SHEETS—SHEET 2.

FIG. II



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3 SHEETS-SHEET 3.

FIG. III.

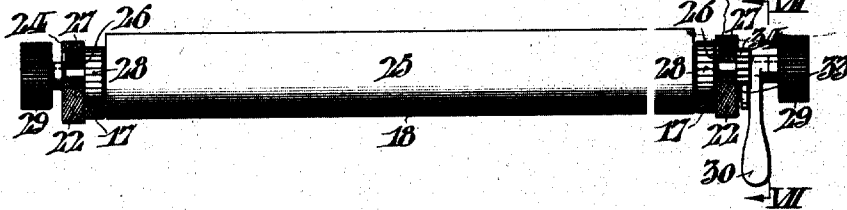


FIG. IV.

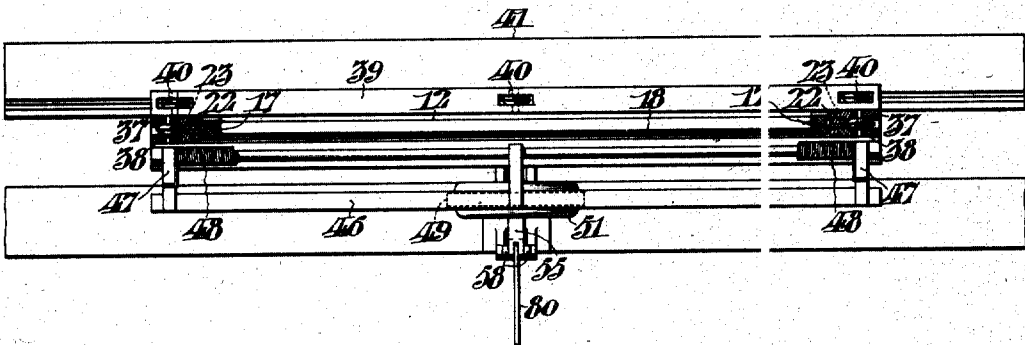


FIG. V.

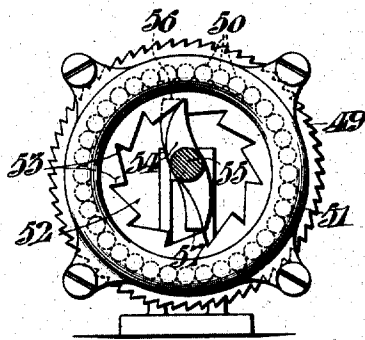


FIG. VI.

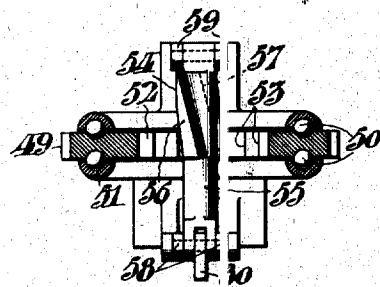
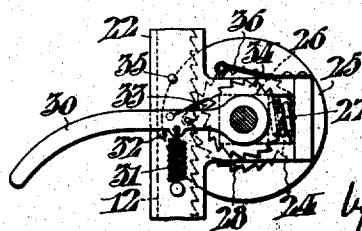


FIG. VII.



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UNITED STATES PATENT OFFICE.

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TYPE-WRITER.

1,008,497.

Specification of Letters Patent. Patented Nov. 14, 1911.

Application filed May 26, 1910. Serial No. 563,496.

To all whom it may concern:

Be it known that I, ROBIE SEIDELINGER, of Wilmington, in the county of Newcastle and State of Delaware, have invented certain new and useful Improvements in Type-Writers, whereof the following is a specification, reference being had to the accompanying drawings.

My invention relates to new and useful improvements in typewriters, and more especially to typewriters adapted to operate upon a flat sheet of paper held in a vertical position in the machine, and movable relative to the frame of the machine.

An object of the invention is to provide a carriage wherein a flat sheet of paper may be held flat throughout the width and length of the carriage, which carriage is removable laterally across the machine for the purpose of spacing the letters, and wherein the paper is also movable vertically for line spacing.

Other objects of the invention will in part be obvious and will in part be hereinafter more fully described.

In the drawings which show by way of illustration one embodiment of the invention, Figure I, is a vertical section from front to rear through a machine having my improvements, certain parts being omitted for the sake of clearness. Fig. II, is a front view on the line II, II, of Fig. I, showing the carriage and the means for supporting and moving the same. Fig. III, is a horizontal section on the line III, III, of Fig. I. Fig. IV, is a horizontal section on the line IV, IV, of Fig. I, the platen being shown in plan. Fig. V, is a top view of the escapement from the line V, in Fig. I. Fig. VI, is a sectional view through the escapement on the line VI, VI, in Fig. I. Fig. VII, is a vertical section on the line VII, VII, of Fig. III, showing a section of the carriage and the platen carried thereby, and the space lever for operating the platen. Fig. VIII, is an enlarged detail in section, showing the end of one of the type levers.

The typewriter consists of a frame 1, which may be of any desired construction, and on said frame are mounted the key levers 2. For the sake of clearness, I have shown herein a single key lever connection with the type lever, although the relative position of the other key levers is indicated in full lines in Fig. I. The key lever 2, is

Said key lever carries a downwardly projecting lug 4, which is pivoted at 5, to a bell crank lever 6, which in turn is connected by a link 7, to an auxiliary lever 8.

The auxiliary lever 8, is pivoted at 9, to the key lever 10, which in turn is pivoted at 11, to the frame of the machine. When the key lever 2, is depressed, the bell crank 6, will be swung about its pivot and in turn will swing the auxiliary lever, which, through its connection with the type lever 10, will throw the type lever about its pivot or fulcrum to bring the type into contact with the paper.

The paper on which the printing occurs, is carried by a frame 12. Said frame at its lower end carries a cross piece 13, and an upwardly projecting clip 14 (see Fig. I), which is spaced from the cross bar 13, so as to form a groove or recess to receive the lower edge of the paper.

The frame is provided with a cross bar 15, at its upper end, which carries a clamping jaw 16, adapted to engage and hold the upper edge of the sheet of paper carried by the frame. Said frame is also provided with side bars 17, 17, as clearly shown in Fig. II. In order to form a backing for the paper, I have provided a flexible support 18, which is connected at its lower end to a rod 19, and at its upper end passes over a rod 20, to the back of the frame where it is secured to a spring roller 21. The spring roller 21, will put the fabric under tension, and hold it slightly against the back of the paper carried by the frame.

The frame 12, is mounted in a carriage 22. Said carriage is provided with a plurality of anti-friction rolls 23, shown in dotted lines in Fig. I, which engage the sides of the frame for the paper, and allow said frame to move vertically in the carriage. Said anti-friction rolls preferably engage recesses in the side members of the frame, as clearly shown in Fig. IV, and thus hold the frame in the carriage.

The carriage 22, as clearly shown in Fig. II, is made in two parts, one of which is similar in shape to the paper supporting frame 12, although slightly longer than the same. This auxiliary frame forming a part of the carriage is so constructed as to allow the frame 12, carrying the paper to be moved vertically relative to said auxiliary frame. The auxiliary frame adjacent its

upper end is provided with a laterally projecting bracket 24, in which is journaled a platen 25. The platen is of the usual construction, and extends across the auxiliary frame of the carriage and is arranged in line with the type when striking the paper, so as to form the usual backing to receive the blow of the type. Said platen as clearly shown in Fig. III, is mounted in a movable box or bearing 26, at each end thereof, which box is guided in the bracket 24, and held spring-pressed forward by a coil spring 27. The springs 27, will allow the platen to yield rearwardly away from the frame for the paper, and consequently the blow of the type is against a yieldingly supported platen. Rigidly mounted on the shaft of the platen, at each end thereof, is a gear wheel 28. The frame 12, carrying the paper is formed with a rack on the rear face of each of its side members, and these racks engage respectively, gear wheels on the shaft of the platen. It will readily be seen that upon the rotation of the platen, the gear wheel 28, operating upon the racks carried by the frame for the paper will move the frame vertically in the auxiliary frame of the carriage. The racks formed on the side members of the frame, and the gear wheels carried by the shaft of the platen are formed with teeth which are so shaped that the engaging faces are substantially horizontal when supporting the frame, and therefore, all tendency of the tooth connection between these parts to slide one over the other, caused by the usual cam-shaped tooth, is avoided. The platen is provided at each end with the usual thumb pieces 29. I have also provided at one end of the platen, a spacing lever 30. Said spacing lever is freely journaled on the platen shaft, and is held by a spring 31, against a stop pin 32. A pivot dog 33, carried by the spacing lever engages a ratchet wheel 34, which is rigidly mounted on the shaft of the platen. A stop pin 35, will serve as a limiting means for the movement of the spacing lever. In order to hold the platen in its various adjusted positions, I have provided a spring dog 36, which carries a roller at its free end, which engages between the teeth of the gear wheel 28. Said spring dog will operate to hold the frame for the paper in its various adjusted vertical positions. It will readily be seen therefore, that as the platen is turned, the paper will not only be carried vertically by the movement of the platen, but the frame which supports the paper will also be moved vertically and the sheet of paper will be carried in a flat condition vertically in the frame of the machine, and various parts of the paper positioned for impressions from the type. The carriage 22, consists also of a main frame 27, in which the

auxiliary frame of the carriage is mounted for vertical movement. Said main frame carries a number of anti-friction rollers 38, which engage a groove in the sides of the auxiliary frame of the carriage, and allows the same to move freely vertically relative to the main frame of the carriage. Said main frame of the carriage has a lower cross bar 39, carrying rollers 40, which engage a track bar 41, on the frame of the machine. Said main frame of the carriage also has an upper cross bar 42, which is provided with rollers 43, that engage a second track bar on the main frame. These rollers allow the carriage to travel transversely across the machine, and the transverse movement of the carriage conveys a similar transverse movement of the frame carrying the paper, and said frame for the paper is movable only in a vertical direction relative to the carriage. It will readily be seen that the frame carrying the paper may be raised vertically relative to the carriage and removed from the machine, the bearings for the platen yielding to allow the frame to pass. This allows the ready insertion of new sheets of paper and carbon sheets if desired for manifolding. It will be obvious however, that the paper may be inserted while the frame is in the machine if desired. The auxiliary frame of the main carriage is supported in the carriage by lugs 44, which engage the frame work of the machine. As a means for moving the carriage across the machine, I have provided the usual coil spring 45, which is secured to one end of the carriage and coiled in a bracket of the well known character in this type of machine.

A toothed bar 46, is rigidly carried by arms 47, which are pivotally attached to the lower member of the carriage. Coil springs 48, engage said arms 47, and normally press the toothed bar downward into engagement with a toothed wheel 49. The teeth of the bar on the side facing the coil spring, are substantially vertical and when in engagement with the teeth of the toothed wheel 49, said bar and the carriage attached thereto are prevented from movement in a direction to the left, as viewed in Fig. II, except as the toothed wheel is allowed to turn by the escapement. The yielding support for the toothed wheel, will however, allow the carriage to be moved to the right whenever it is desired. The toothed wheel 49, as clearly shown in Fig. I, is supported by the anti-friction balls 50, which engage recesses formed in each face of the toothed wheel, and corresponding recesses or tracks formed in a bracket 51. This manner of supporting the toothed wheel will allow the same to rotate freely when released by the escapement. Said toothed wheel is provided with a central opening 52, and is formed with a

plurality of teeth 53, which cooperate with an escapement pawl. Said escapement pawl 54, is carried by a bar 55, and has oppositely disposed cam teeth 56, and 57. The bar for supporting the pawl 54, is mounted on parallel links 58, and 59, which in turn are pivoted to arms carried by the frame of the machine.

When the bar 55, is at the rear end of its stroke, as shown in Fig. I, the tooth 56, engages one of the inner teeth of the toothed wheel, and prevents said toothed wheel from being turned by the spring operating upon the carriage. When the bar 55, is moved forward, the cam face 56, will allow the toothed wheel to move a distance equal to half the distance between the teeth formed on the inner face of the wheel. At the same time, the links 58, and 59, carry the pawl downward so that the cam face 57, on the opposite side of the pawl will engage one of the teeth on the opposite side of the toothed wheel 54. When this engagement is brought about, the cam face 56, will be released from the tooth which it engaged, and the toothed wheel will have moved half the distance between its teeth. On the return movement of the bar 55, the cam face 57, will allow the toothed wheel to move again half the distance between its teeth and the cam face 56 of the pawl 54, will engage the next inner tooth on the toothed wheel. It will thus be seen that by one movement of the bar 55, a half escapement occurs, and on the other movement of the bar, the remaining half occurs, thus requiring a forward and backward movement of the bar to allow the escapement of a single tooth.

The bar 55, is connected by means of a link 80, to a bell crank lever 81. Said lever at its lower end is connected to a spring 82, which, in turn is pivoted to the frame of the machine, and which spring operates to hold the bar 55, at the rear end of its stroke. The bell crank lever 81, is rigidly attached to the universal bar 60. The spacing bar 61, is carried by a lever 62, which is pivoted on the frame of the machine, and engages the upper face of the universal bar 60. By depressing the spacing bar, the universal bar is moved downward, which operates the escapement and allows the carriage to move the distance of one tooth transversely of the machine. The downwardly projecting lug 4, carried by each key lever is also located directly above the universal bar 60, and when a key lever is depressed, the universal bar is also depressed, thus causing the operation of the escapement.

In order that types carrying small letters and capital letters may be brought into action when desired, I have provided each type lever with two types, 63, and 64. The type 64, is rigidly mounted in a socket in the type lever in the usual manner. The

type 63, is mounted in a movable bar 65, which slides in a suitable bearing in the outer end of the type lever. Said bar at its lower end carries a pin 66, which engages a slot in a lever 67, pivoted to the end of the type lever. The spring 68 normally depresses the outer end of the lever 67, and holds the outer face of the type 63, positioned below the outer face of the type 64, so that when the parts are in the position shown in Fig. VIII, the type 64, will strike the paper resting against the platen, and the type 63, will be ineffective. When the type lever is moved to its normal operative position, shown in Fig. I, the outer end of the lever 67, strikes the rest bar, and moves the lever 67, against the action of the spring 68, so as to throw the surface of the type 63, above the surface of the type 64. A gravity latch 69, will engage a shoulder on the type lever and lock the lever 67, in this position, holding the type 63, rigidly above the type 64, so that when the type lever is swung to bring the type into engagement with the paper, the type 63, will be effective and the type 64, will be ineffective or inoperative. The type 63, preferably carries the small letters. When it is desired to bring the type carrying the large letters into operation, the shift key 70, is depressed. The key lever carrying the shift key is connected by means of a link 71, to a bell crank lever 72, carrying a bar 73, extending across the machine. The depression of the shift key 70, throws the bar 73, into engagement with the latch on each type lever, thus releasing the lever 67, allowing the spring 68, to depress the lever 67, throwing the type 64, into action as soon as the type lever is moved from the rest bar. The lever carrying the shift key is also provided with a link 74, which is connected to the outer end of a lever 75, fulcrumed on the depending arm 76. Said lever 75, engages the under face of a bar 77, which is rigidly connected to the outer side pieces of the auxiliary frame forming a part of the carriage.

When the shift key is depressed, the lever 75, will be operated, which in turn will raise the auxiliary frame of the carriage, thus lifting the platen, and the frame carrying the paper, so as to position the same properly for the action of the other type carried by the type lever.

It will be obvious that minor changes in the details of construction may be made without departing from the spirit of my invention. In the place of providing a rest for the lower end of a sheet of paper, and using separate sheets of paper, I may mount a roll or rolls of paper at the lower end of the paper supporting frame, and provide the usual combined clamp and cutter at the upper end so that the paper may be drawn across the paper supporting frame, and cut

off by the cutter at the upper end in the usual well known manner.

Having thus described my invention, I claim:—

5 1. In a typewriting machine, the combination of a carriage; a rotatable platen mounted on said carriage; an independent sheet supporting frame movable with said carriage; and means for simultaneously operating said platen and moving said sheet supporting frame vertically.

2. In a typewriting machine, the combination of a carriage; a rotatable platen mounted on said carriage; a paper supporting frame mounted in said carriage for vertical movement relative to said platen; means for supporting a flat sheet of paper on said frame; a flexible backing carried by said frame; and means for moving said frame vertically in said carriage and for operating said platen.

3. In a typewriting machine, the combination of a carriage comprising a main and an auxiliary frame; a frame for supporting a sheet of paper mounted in said auxiliary frame of the carriage; a rotatable platen supported by said auxiliary frame; and means for moving said sheet supporting frame vertically in said auxiliary frame and for rotating said platen.

4. In a typewriting machine, the combination of a carriage consisting of a main and an auxiliary frame; a sheet supporting frame mounted in said auxiliary frame of the carriage; a platen journaled in said auxiliary frame; gear wheels carried by the shaft of said platen; and racks mounted on the frame for supporting the paper cooperating with said gear wheels, whereby the rotation of said platen will move said paper supporting frame vertically.

5. A typewriting machine including in combination a carriage consisting of a main and an auxiliary frame; a paper supporting frame mounted in said auxiliary frame; a platen journaled in said auxiliary frame; gear wheels carried by the shaft of the platen; racks carried by said paper supporting frame, and cooperating with said gear wheels; a spacing lever for rotating the platen; and means for holding the platen in its various adjusted positions.

6. In a typewriting machine, the combination with a carriage; a platen; means for supporting said platen on said carriage, whereby the same is yieldingly pressed toward the front of the machine; a paper supporting frame mounted in said carriage, and adapted to be moved vertically in front of said platen; and means for moving said paper supporting frame vertically.

7. In a typewriting machine, the combination of a carriage, a rotatable platen mounted on said carriage; a paper supporting frame carried by said carriage; a flexible backing carried by said paper supporting frame; means for supporting the lower edge of a sheet of paper on said frame; means for clamping the upper edge of said paper on said frame; and means for moving the frame vertically in said carriage and for rotating said platen.

8. In a typewriting machine, the combination of a carriage consisting of a main and an auxiliary frame; rollers for supporting said main frame; means whereby said auxiliary frame may be moved vertically relative to the main frame; anti-friction rolls located between the main frame and the auxiliary frame; a platen carried by said auxiliary frame; and a sheet supporting frame mounted in said carriage and adapted to be moved vertically in the carriage.

9. In a typewriting machine, the combination of a carriage consisting of a main and an auxiliary frame; rollers for supporting said main frame; means whereby said auxiliary frame may be moved vertically relative to the main frame; anti-friction rolls located between the main frame and the auxiliary frame; a platen carried by said auxiliary frame; a sheet supporting frame mounted in said carriage, and adapted to be moved vertically in the carriage; and means for simultaneously rotating said platen, and moving said paper supporting frame vertically.

In testimony whereof, I have hereunto signed my name, at Philadelphia, Pennsylvania, this twenty-fourth day of May, 1910.

ROBIE SEIDELINGER.

Witnesses:

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