

C. H. VOGEL.
TYPE WRITING MACHINE.
APPLICATION FILED MAY 4, 1911.

Patented July 1, 1913.

1,066,442.

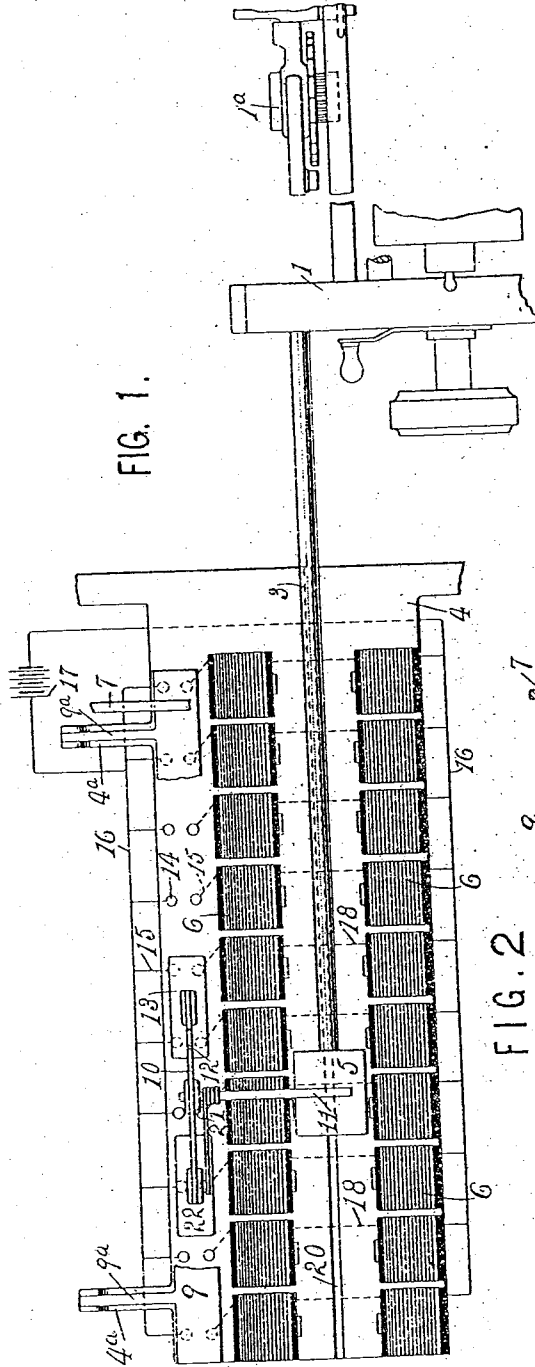


FIG. 1.

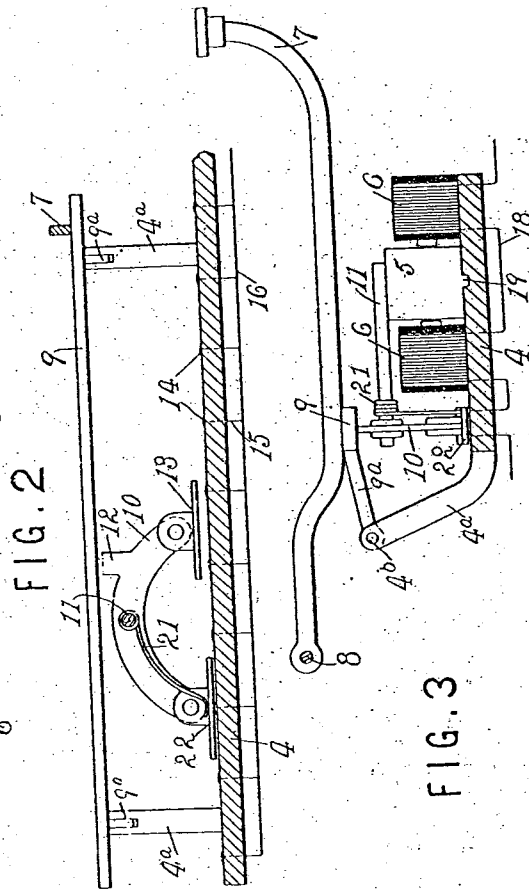


FIG. 2

FIG. 3

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TYPE-WRITING MACHINE.

1,066,442.

Specification of Letters Patent.

Patented July 1, 1913.

Original application filed August 22, 1910; Serial No. 578,457. Divided and this application filed May 4, 1911. Serial No. 624,918.

To all whom it may concern:

Be it known that I, CHARLES H. VOGEL, a subject of the King of England, residing in Vancouver, in the county of Vancouver, Province of British Columbia, Dominion of Canada, have invented certain new and useful Improvements in Type-Writing Machines, of which the following is a specification.

10 This invention relates to the paper carriages of typewriting machines, and this application is a division of my application No. 578,457, filed August 22, 1910.

The principal object of the invention is to provide simple and efficient means for exerting a tension upon the carriage to advance it in letter-feeding direction, and also to enable the carriage to be returned easily and readily from any point.

20 I attach a rod with an armature to the typewriter carriage. The rod extends in the direction of travel of the carriage, and the armature is guided along a table or shelf upon which are mounted electro-magnets preferably arranged in two rows, between which the armature moves. Connected with the armature, I provide a rocker having two contact shoes, arranged so that one or the other may be in contact with said table or shelf; and contacts are provided in the table which may be bridged by said contact shoes, so as to close circuits through the electro-magnets in the rear or in advance of the traveling armature. A spring normally holds in contact with the table, that contact shoe which is remote from the typewriter carriage, so that the action of the magnets is normally to advance the armature and the carriage in the letter-feeding direction, that is, from right to left, exerting a tension which advances the carriage through a letter-space whenever the carriage escapement is operated. By depressing a carriage-return key, the position of the rocker is reversed, so as to depress the contact shoe which is upon the side of the armature adjacent to the carriage. The magnets to the left of the armature then become inactive, and the magnets immediately to the right become energized and draw the armature toward the right; as the armature advances, the active contact shoe slides along the table and closes other contacts more in advance of the armature; in this way, the armature will

be drawn along, so as to complete the return of the carriage. 55

In the accompanying drawings, Figure 1 is a plan of the carriage-feeding and returning device, showing part of the carriage to which it is attached, parts of the returning device being broken away. Fig. 2 is a longitudinal section through the feeding and returning device, taken on the line 2-2 of Fig. 1. Fig. 3 is a part elevation and cross section through the table which supports the electro-magnets of the feeding and returning device. 60

A carriage 1 is controlled in its movement from right to left by an escapement 1^a. At a suitable point, such as the left-hand rear portion of the carriage, I attach a rod 3, which extends in the direction of travel of the carriage, and on the end of this rod is carried an armature 5, in the form of a block having a guide spline 19, which runs in a groove 20 in the upper face of a table or shelf 4. The armature 5 travels between two rows of electro-magnets 6, which are connected by means of conductors 15, to mains 16; said mains being in circuit with a battery 17 or other source of current. The armature 5 is provided with a laterally projecting stem 11, carrying a rocker 10 in the form of a bow, as shown in Fig. 2, the end of the bow lying adjacent to the table, and being provided with pivoted contact shoes 13 and 22. A spring 21 normally holds the shoe 22 on the face of the table, so that it may bridge one or more pairs of contacts 14, with which the conductors 15 connect. In this way, a circuit is normally closed through one or more pairs of magnets at the left of the armature 5, the opposite magnets of the two rows being connected by conductors 18 for this purpose. 80

On the upper side of the rocker 10, a lug 12 is provided, and as the armature travels to and fro, this lug travels along under a bar 9, which extends longitudinally of the table, and is supported on arms 9^a pivoted at 4^b on posts 4^a, which extend rearwardly from the table 4. At a convenient point, a return key 7 rests upon the bar 9, preferably at the right end thereof, which is adjacent to the carriage 1. This key is pivotally supported at 8, as shown in Fig. 3, and when it is depressed, it depresses the bar 9 which contacts with lug 12, and rotates the 85 90 95 100 105

rocker 10 slightly toward the right. This removes contact shoe 22 from the table, and opens the circuit or circuits which it formed through the electro-magnets at the left of the armature. At the same time, the contact shoe 13 descends upon the table, and closes a circuit or circuits through the electro-magnets at the right of the armature 5. The direction of the pull upon the armature is thereby reversed, and the armature moves toward the right to return the carriage.

On account of the spring 21, the shoe 22 is normally held on the table, so that two or more electro-magnets at the left of the armature are normally active, and normally exert a tension on the carriage, cooperating with the escapement 1^a to give the carriage its feeding movement.

Having thus described my invention, I claim:

1. In a typewriting machine, a carriage having an armature in connection therewith, and a plurality of electro-magnets successively energized for advancing said armature.

2. A typewriting machine having a carriage, in combination with an armature for advancing said carriage, a plurality of electro-magnets arranged along the path of travel of said armature, and means advancing with said armature for closing circuits through said magnets.

3. In a typewriting machine, a carriage in combination with an armature, a plurality of electro-magnets arranged in a longitudinal row in the direction of travel of said carriage, and means for closing circuits through said magnets in front or behind said armature, so as to advance said carriage in either direction.

4. In a typewriting machine, a carriage, in combination with an armature connected thereto, a plurality of electro-magnets arranged in a row longitudinal with the direction of travel of the carriage, and contact shoes disposed respectively on opposite sides of said armature and adapted to close circuits on either side of said armature, and means for actuating said shoes, said shoes being arranged so that when one shoe closes a circuit, the circuit remains broken at the other shoe.

5. In a typewriting machine, a carriage, in combination with an armature connected thereto, a plurality of electro-magnets arranged in a row along the direction of travel of said armature, a plurality of contacts for closing the circuits through said electromagnets, a movable member, a shoe carried thereby on one side for touching said contacts to energize the electro-magnets on one side of said armature, a second shoe carried by said member for touching said contacts to energize the magnets on the other side of said armature, a member for nor-

mally holding one of said shoes in engagement with said contacts, and means for rocking said member to throw the other shoe into contact.

6. In a typewriting machine, the combination with a power-driven traveling carriage, of means controlling the direction of said power-drive traveling with the carriage, a key for reversing said drive, and a bar extending along the travel of said controlling member for governing said controlling means from said key.

7. In a typewriting machine, the combination with a power-driven traveling carriage, of means controlling the direction of said power-drive traveling with the carriage, a spring holding said controlling means so that it causes said carriage normally to be drawn in letter-feeding direction, a bar extending along the travel of said controlling member for reversing said drawing, and a key governing said controlling means.

8. In a typewriting machine, the combination with a traveling carriage, of an electro-magnet drawing it in one direction, a spring-controlled switch for the circuit energizing said magnet so that it tends to draw said carriage in letter-feeding direction, a bar extending along the travel of said switch, a second magnet arranged to draw said carriage in the reverse direction, and a key arranged to move said bar to reverse said switch to cause said second magnet to draw said carriage back.

9. In a typewriting machine, the combination with a traveling carriage, of an armature arranged to draw said carriage, two series of electro-magnets, one on each side of said armature, and means for successively energizing said electro-magnets so that opposite ones simultaneously draw said armature to feed said carriage.

10. In a typewriting machine, the combination with a traveling carriage, of an armature arranged to draw said carriage, two series of electro-magnets, one on each side of said armature, and a switch traveling with said armature for successively energizing said electro-magnets so that opposite ones simultaneously draw said armature to feed said carriage.

11. The combination with a traveling carriage, of power means for driving it, means traveling with said carriage for determining in which direction said power shall drive it, a bar on said carriage controlling said determining means, and a key-controlled member for moving said bar to reverse said drive.

12. The combination with a traveling carriage and fixed contacts, of electrical means for driving said carriage, a switch cooperating with said contacts, a bar controlling said switch, and a key-controlled member overlying said bar to move said switch.

13. The combination with a traveling carriage, of electrical means for driving it, fixed contacts, a switch normally engaging said contacts so as to cause said electrical means to drive said carriage in one direction, a bar extending along the line of travel of the carriage, and a key-controlled member adapted to move said bar to control said switch.

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Witnesses:

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."