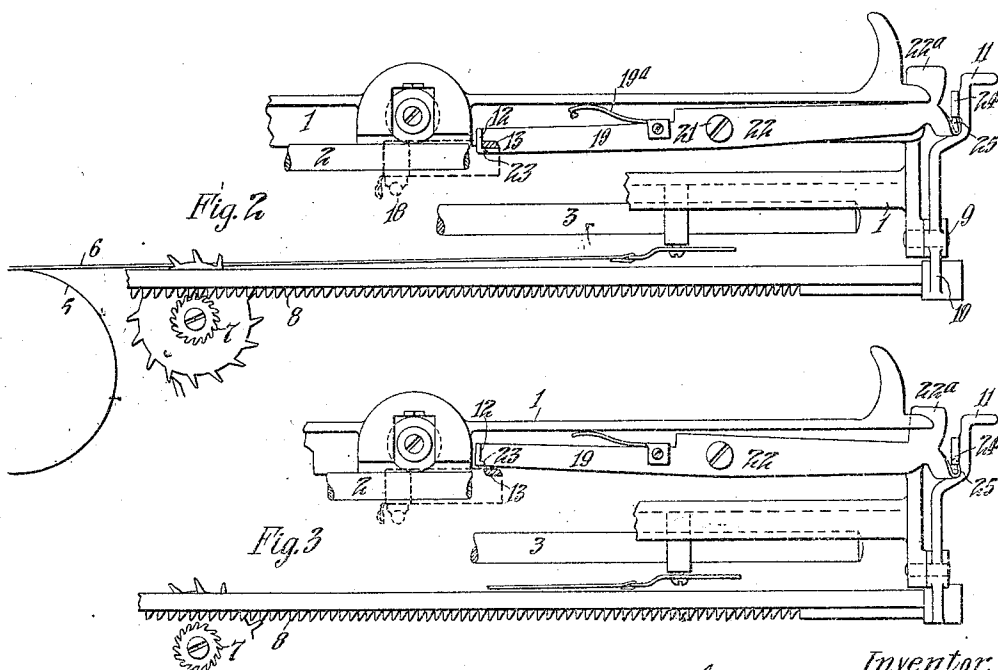
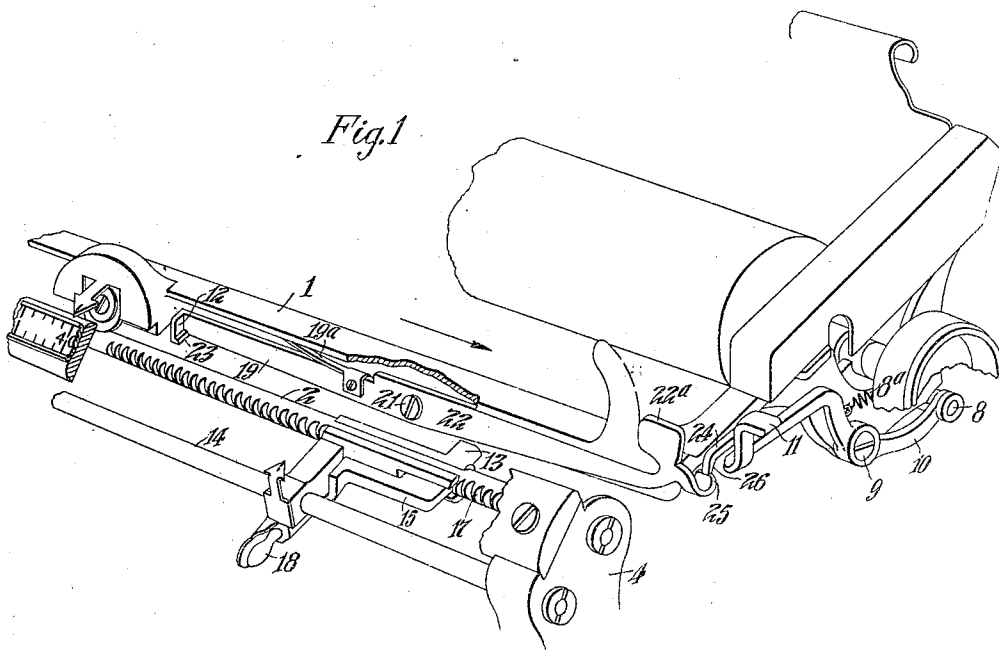
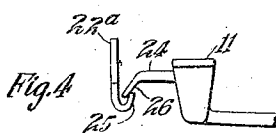


1,022,580.

Fig.1



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UNITED STATES PATENT OFFICE.

CORNELIUS B. CORCORAN, OF NEW YORK, N. Y., ASSIGNOR TO UNDERWOOD TYPE-WRITER COMPANY, OF NEW YORK, N. Y., A CORPORATION OF DELAWARE.

TYPE-WRITING MACHINE.

1,022,580.

Specification of Letters Patent.

Patented Apr. 9, 1912.

Application filed November 26, 1910. Serial No. 594,269.

To all whom it may concern:

Be it known that I, CORNELIUS B. CORCORAN, a citizen of the United States, residing in the borough of Bronx, city of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Type-Writing Machines, of which the following is a specification.

This invention relates to means for preventing false advance movement of the paper-carriage at the beginning of the line of writing. After a line has been written, the paper carriage is returned to its initial position, and arrested by a margin gage. The impact of the carriage against the gage, if very severe, is sometimes followed by a jumping or rebound of the carriage to the extent of one or more letter spaces in advance of the proper writing point, due to the releasable rack on the carriage jarring loose from the escapement pinion on the framework and thereby accidentally freeing the carriage, so that it is advanced by the action of the usual feed spring. If this action is not noticed by the operator, the work will have an uneven left hand margin; and even if the action is observed, the operator must return the carriage to the proper point, before writing the line.

The principal object of this invention is to insure the evenness of the left hand margin, which is accomplished by locking the escapement members together at the moment of impact of the carriage with its gage to prevent the carriage from skipping or jumping forwardly. To this end, a latch is mounted on one arm of a lever (preferably that usually carrying the carriage stop) to hook beneath a catch on the frame of the machine (preferably the margin gage) to hold the lever against vibration. The opposite arm of the lever operates to lock the releasable member of the letter-spacing mechanism (which in the present instance comprises a swinging rack on the carriage) in engagement with its co-acting member, (an escapement pinion) on the frame.

Other objects and advantages will hereinafter appear.

In the accompanying drawings, Figure 1 is a perspective showing the invention applied to the carriage of an Underwood writing machine. Fig. 2 is a side view

showing the shiftable letter-feeding rack locked in engagement with the escapement pinion. Fig. 3 is a similar view showing the carriage stop lifted to idle position to enable the carriage to be returned past the margin gage, the rack being released from its pinion. Fig. 4 is a detail showing the positions of the locking stop or beak and its abutment when the finger-piece controlling the rack is depressed to enable the carriage to return past the margin-gage.

A carriage 1 travels back and forth on front and rear rails 2 and 3 of the frame 4 of a typewriting machine. A spring 5 connected by a strap 6 with the carriage drives the latter in letter-spacing direction. An escapement mechanism including a pinion 7 with which a rack 8 (pivoted at 9 by arms 10 to the carriage) meshes, feeds the carriage step-by-step. A spring 8^a tends to hold the rack down in mesh with its pinion. Depression of a finger piece 11 connected with one of said arms 10 releases the rack from the pinion to free the carriage to the action of the spring 5. After a line has been written, the carriage is returned to initial position, it being arrested at the left hand margin by the engagement of a stop 12 thereon with a margin gage 13 slidable along the rail 2 and along a guide rod 14 and having a dog 15, to engage teeth 17 on the rail 2 and hold the gage where adjusted. Pressure against a finger piece 18 on the dog releases the gage to enable it to be adjusted along the rail to normally control the width of the left hand margin.

The stop 12 may be mounted on one arm 19 of a margin-regulating lever pivoted at 21 to the carriage. Depression of the finger piece 22^a on the opposite arm 22 of said lever lifts the stop 12 out of line with the gage 13 against the tension of a returning spring 19^a to enable the carriage to be returned past the gage when it is desired to write in the left hand margin. The arm 19 is arrested in idle position by engagement with a part of the carriage 1.

Upon the return of the carriage to initial position (Fig. 2) and just prior to the contact of the stop 12 with the gage 13 a latch 23 preferably on the arm 19 of the margin-regulating lever is introduced beneath the gage 13 to lock the outer arm 22 of the lever against depression, said outer arm lying beneath the rack releasing finger piece 11, so

that the jar caused by the impact of the carriage against the gage cannot free the carriage to the action of its spring 5 by accidentally effecting the disengagement of the letter-spacing rack from its pinion.

By depressing the finger piece 11 prior to the contact of the stop 12 with margin gage 13 (Fig. 3), the lever 19, 22 is vibrated to lift the stop to idle position and the rack 8 is by the same pressure disengaged from its pinion 7 to enable the carriage to be returned past the gage and quickly adjusted to the desired printing point in the margin.

The rack 8 has a longer throw, to release itself from the pinion than has the lever arm 19 to move stop 12 to idle position, and to enable the finger-piece 11 when depressed to complete its stroke, after the lever 19, 22 has been arrested, as well as to hold the lever and the stop 12 idle, during its stroke, the finger-piece 11 has a forwardly projecting beak or stop 24 about touching an abutment 25 on the arm 22 of the margin regulating lever.

The abutment, by arresting the stop 24, prevents the accidental release of the rack 8 from its pinion 7 at the contact of the stop 12 with the gage 13. When the finger-piece 11 is depressed (Fig. 3) the end of the beak or stop 24 depresses the arm 22 of the margin regulating lever until the stop 12 has been lifted to idle position, whereupon the end of said beak rides off the abutment owing to its arc of movement relatively to the latter, the inclined under face 26 of the beak then engaging the abutment to hold the lever depressed, as the finger piece completes its stroke, (Fig. 4).

Having thus described my invention, I claim:

1. In a typewriting machine, the combination with a carriage driven in letter-spacing direction and returnable to initial position, and means to arrest the carriage, of carriage-feed mechanism including escapement members mounted on the carriage and the frame respectively, the escapement member on the carriage being releasable from its co-acting member, and means to lock the shiftable escapement member to the co-acting member at the arrest of the carriage, and means for rendering said lock inoperative at will.

2. In a typewriting machine, the combination with a carriage driven in letter-spacing direction and returnable to initial position, and an adjustable margin gage to arrest the carriage at the beginning of a line, of carriage feed mechanism including a shiftable escapement member on the carriage engaging a co-acting member on the frame, and means latching with the margin gage at the contact of said carriage with said gage, to lock the escapement members together.

3. In a typewriting machine, the combination with a carriage driven in letter-spacing direction and returnable to initial position, and carriage feed mechanism including an escapement on the frame, and a movable rack on the carriage meshing with said escapement, of means to lock the rack and escapement together at the moment when the carriage reaches initial position, and means for rendering said lock inoperative at will.

4. In a typewriting machine, the combination with a carriage driven in letter-spacing direction and returnable to initial position, and carriage feed mechanism including an escapement on the frame, and a movable rack on the carriage meshing with said escapement, of a lever carrying a lock for said rack effective at the moment when the carriage reaches initial position, and means for moving said lever to render the lock ineffective.

5. In a typewriting machine, the combination with a carriage driven in letter-spacing direction and returnable to initial position, a margin gage to arrest the carriage at the beginning of a line, carriage feed mechanism including a swinging rack on the carriage, and an escapement pinion with which the rack meshes, of a lock in contact with the margin gage at the arrest of the carriage, to hold the rack in mesh with said pinion.

6. In a typewriting machine, the combination with a carriage driven in letter-spacing direction and returnable to initial position, an escapement pinion, a swinging rack meshing therewith, a rack-releasing finger-piece, a stop on the carriage, and a margin gage in the path of the stop to arrest the carriage at initial position, of a locking lever held against vibration at the arrest of the carriage, and engaged by the finger-piece to prevent the disengagement of the rack and its pinion.

7. In a typewriting machine, the combination with a carriage driven in letter-spacing direction and returnable to initial position, an escapement pinion, and a swinging rack in mesh with the pinion, of a stop connected with the rack, a lever, one arm of which lies in position to be struck by the stop, and means to arrest the carriage at the beginning of a line and to lock the lever against vibration to prevent the disengagement of the rack and pinion.

8. In a typewriting machine, the combination with a carriage driven in letter-spacing direction and returnable to initial position, an escapement pinion and a swinging rack in mesh with the pinion, a lever on the carriage having a stop, and a margin gage struck by the stop to arrest the carriage at the beginning of a line, of a latch on said lever to catch under the gage when the car-

riage is brought to the beginning of a line to lock the lever against vibration, and a stop connected with the rack and lying in position to contact with the lever, to lock the rack against displacement relatively to its pinion when the carriage is arrested on its return.

9. In a typewriting machine, the combination with a carriage driven in letter-spacing direction, and returnable to the beginning of a line, an escapement pinion, a swinging rack on the carriage normally in mesh with the pinion, of a lever on the carriage having a latch to engage a fixed part to hold the lever against vibration, at the arrest of the carriage, and an abutment on the lever to lock the rack against release from its pinion.

10. In a typewriting machine, the combination with a carriage driven in letter-spacing direction, and returnable to the beginning of a line, an escapement pinion, a swinging rack on the carriage normally in mesh with the pinion, a finger-piece to release the rack, of a lever on the carriage, means to lock the lever against vibration upon the arrest of the carriage, and an abutment on the lever engaged by a stop on the finger-piece to prevent accidental disengagement of the rack and pinion.

11. In a typewriting machine, the combination with a carriage driven in letter-spacing direction, and returnable to the beginning of a line, an escapement pinion, a swinging rack on the carriage normally in mesh with the pinion, a lever on the carriage, a stop on one arm of the lever and a margin gage struck by the stop to arrest the carriage on its return, of a finger-piece on the rack, overhanging the opposite arm of the lever to release the rack from its pinion and move the stop to idle position, and a latch to lock the lever and finger-piece against vibration upon the arrest of the carriage.

12. In a typewriting machine, the combination with a carriage driven in letter-spacing direction, and returnable to the beginning of a line, an escapement mechanism including a pinion and a rack pivoted to the

carriage to mesh with the pinion and feed the carriage step-by-step, a stop on the carriage to strike a gage on the frame to arrest the carriage on its return, a margin-regulating lever, one arm of which supports the stop, an abutment on the opposite outer arm of the lever, a rack-releasing finger-piece having a beak with an inclined under face projecting over the abutment, and having a greater throw than the lever, to shift the stop to idle position and hold it idle while the rack is being released.

13. In a typewriting machine, the combination with a carriage driven in letter-spacing direction and returnable to the beginning of a line, a swinging escapement member on the carriage to cooperate with an escapement member on the frame to feed the carriage step-by-step, a finger-piece to release the swinging escapement member from its co-acting member, a gage on the frame struck by a stop on the carriage to arrest the latter at the beginning of a line, a margin regulating lever supporting said stop on one arm, a stop on the finger-piece to engage the opposite arm of the lever to shift the margin stop to idle position when the releasable escapement member is disengaged, and a latch on said lever to catch under the gage to lock the escapement members against disengagement at the arrest of the carriage.

14. In a typewriting machine, the combination with a carriage which is driven by a spring in letter-spacing direction and is returned to the beginning of a line by hand, a margin gage struck by a stop on the carriage to arrest the latter on its return, said carriage being prevented from jumping in letter-spacing direction upon its arrest by a latch on one arm of a lever which catches beneath a fixed part, as the margin gage, the opposite arm of said lever lying in the path of a finger-piece connected to a rack in mesh with an escapement pinion to lock the rack against disengagement from the pinion.

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Witnesses:

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