

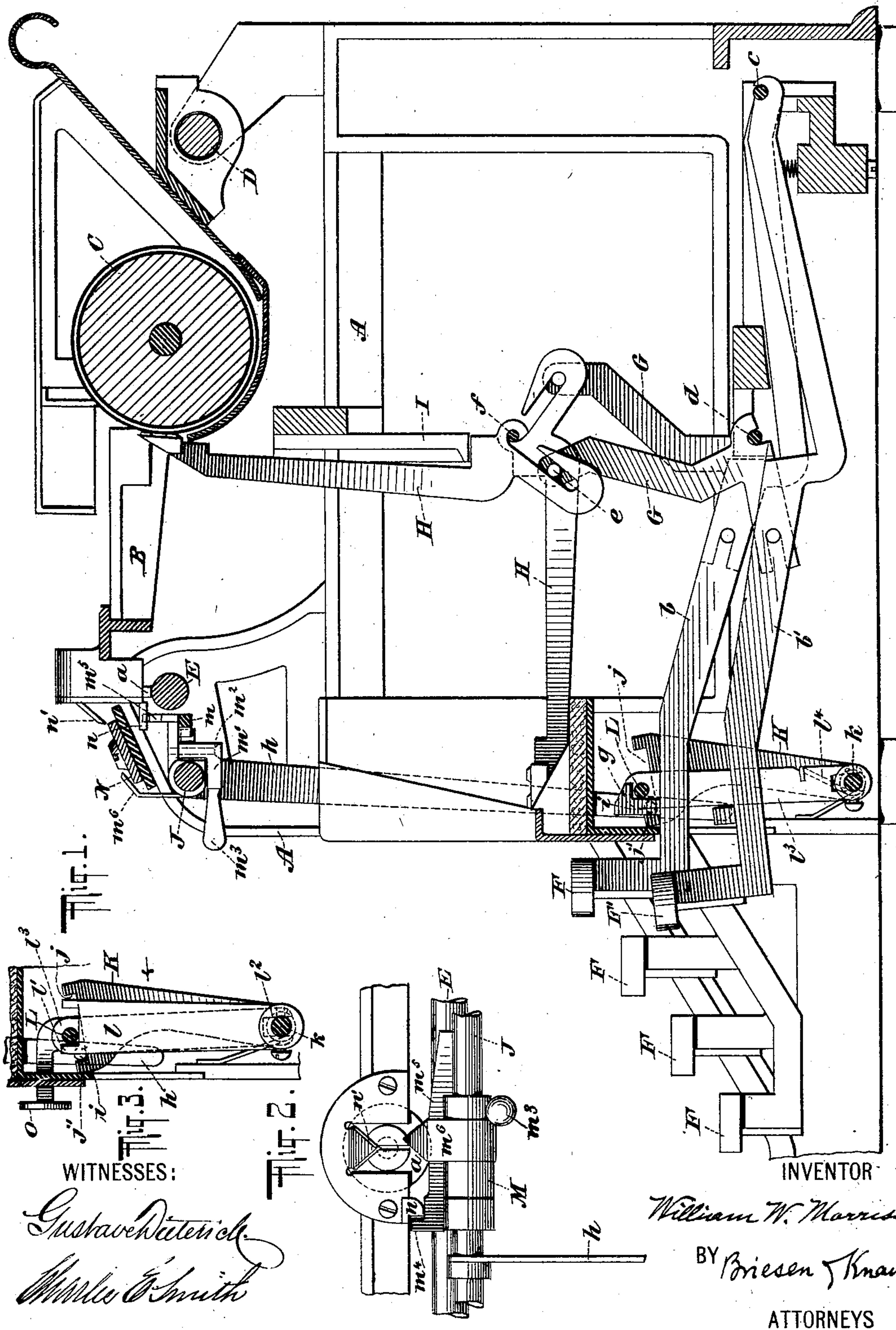
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Patented July 22, 1902.

W. W. MORRISON.
TYPE WRITING MACHINE.

(Application filed Dec. 17, 1900.)

(No Model.)



WITNESSES:

Gustave Wattenich
Charles E. Smith

INVENTOR

William W. Harrison

BY *Briesen & Knauth*

ATTORNEYS

UNITED STATES PATENT OFFICE.

WILLIAM W. MORRISON, OF ELLSWORTH, MAINE, ASSIGNOR TO THE
WAGNER TYPEWRITER COMPANY, OF NEW YORK, N. Y., A COR-
PORATION OF NEW YORK.

TYPE-WRITING MACHINE.

SPECIFICATION forming part of Letters Patent No. 705,423, dated July 22, 1902.

Application filed December 17, 1900. Serial No. 40,099. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM W. MORRISON, a citizen of the United States, residing at Ellsworth, Hancock county, Maine, have invented certain new and useful Improvements in Type-Writing Machines, of which the following is a specification.

My invention relates to type-writing machines, and more particularly to mechanism for automatically locking the machine out of action when the end of a line is reached, whether the line be long or short. Heretofore in such machines it has been customary to automatically lock every type bar or key out of action when the end of a short or long line is reached, and in order to write one or more letters or characters it has been customary to release the locking mechanism by hand, thus causing considerable annoyance and delay.

The object of my present invention is to provide mechanism with the aid of which the difficulties heretofore encountered are overcome and various characters—such, for instance, as a hyphen, comma, period, dash, colon, semicolon, &c.—may be imprinted upon the paper after type-bars carrying the other characters are locked out of action.

To these ends my invention consists in the novel arrangement and combination of parts to be hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a vertical sectional view from front to rear of sufficient number of parts of one form of type-writing machine to illustrate my invention. Fig. 2 is an enlarged detail fragmentary view of a portion of the same. Fig. 3 is a detail fragmentary side view of a portion of the structure.

Reference being had to Fig. 1 of the drawings, A designates the framing of the machine, in which the various parts are mounted.

Moving from end to end of the framing of the machine is a paper-carriage B, which carries a platen C. The rear of this carriage is shown supported upon a traverse-rod D, whereas the front of the carriage is supported upon a rail E, the antifriction-roller *a* on said carriage bearing upon the rail.

F and F' indicate the finger-keys, which are

united to key-levers *b* and *b'*, respectively. These key-levers are all pivoted, as indicated at *c*, and are each of them pivotally united to a link G, which links are pivoted to the framing of the machine, as indicated at *d*, and in turn are each connected to a type bar or carrier H by a suitable pin-and-slot connection *e* or otherwise. The type-bars are mounted in a segment I and oscillate upon a pivot *f*, carried by said segment. The key-levers *b*, that are connected to the type bars or carriers which are intended to write letters or numerals or to be locked out of operation when the end of a line is reached, are each provided with an engaging abutment or hook *g*. On the other hand, those key-levers *b'* which are intended to operate the type bars or carriers that are provided with characters that it is desirable should be written after the end of the line is reached—such, for instance, as the period, comma, colon, hyphen, dash, &c.—are devoid of such abutments or hooks *g*, so that these keys are at all times free to be operated, as will hereinafter more clearly appear.

Preferably at the front of the machine is located a rock-shaft or rod J. This rod J has rigidly connected therewith a depending arm *h*, that is provided with a pin *i* near its lower end. This pin *i* is adapted to project into a bifurcation or opening *j* in an arm K. This arm K is rigidly connected to a rock-shaft *k*, from which extend arms *l*. (See Fig. 3.) The upper ends of these arms *l* are provided with studs *l'*, which are adapted to bear against and move a rod L, that extends from end to end of the machine, and when the rod is in the position indicated in Fig. 1 of the drawings it is beneath the abutments or hook-like projections *g* on the key-levers *b*, and thus prevents a depression of the key-levers, and consequently locks the type carriers or bars out of action. The key-levers *b'*, being devoid of the abutments or hook-like projections *g*, are free to be depressed whether the locking-bar L is in the locking or releasing position. A spring *l²* (see Fig. 3) tends to maintain the locking-bar L in a position where the locking-abutments or hook-like projections *g* cannot engage the same. When,

however, the depending arm h is oscillated, the pin i thereon will contact with the forward abutment j' on the arm K and will cause the rock-shaft k to be oscillated or rocked to bring about a movement of the arms l in the direction of the arrow in Fig. 3, and thus permit the locking-bar L to be moved to the position represented in Fig. 1 of the drawings, where it is effective to lock the lockable key-levers out of operation. The locking-bar L is rigidly connected to arms l^3 , which are loosely mounted upon the rock-shaft k and which are provided with separate springs l^4 and which tend to move the arms l^3 and the locking-bar L toward the front of the machine or into the locking position, as indicated in Fig. 1. The locking-bar L is likewise connected to a button O, as indicated in Fig. 3 of the drawings. This button projects from the front of the machine and may be moved by hand against the tension of the spring l^4 , thus conveying the locking-bar out of the locking position, the slotted portion of the arm l between the lugs l' allowing of this movement.

The depending arm h is moved to bring about the automatic movement described by the following means: A rack m is rigidly connected to and moves with the rocking bar J, and a line-stop M is adapted to move along the rocking rod or bar J and to be secured in the adjusted position by the toothed member which engages the rack m . This toothed member is carried upon a piece m' , which is pivoted to the stop, as indicated at m^2 in Fig. 1. This piece m' is likewise provided with a handle or finger-piece m^3 , by which the piece may be moved around its pivot m^2 to disengage the teeth thereof from the rack m , when the stop M is free to be moved along the rod J. The stop M is likewise provided with an abutment m^4 , that coöperates with a stop or abutment n upon the carriage. The stop M is provided with a cam m^5 , that is located to the right of the stop m^4 . This cam m^5 is so situated that the stop n on the carriage will first contact with it in the movement of the stop n , with the carriage toward the stop or abutment m^4 . This contact of the stop n with the cam m^5 will cause the inner portion of the stop M to be depressed, thereby rocking the rod J and moving the lower end of the depending arm h forward to accomplish a locking of the lockable key-levers, as heretofore described. It will be understood that the connection of the rack m with the rod J causes it to partake of the rocking movement of said rod and of the line-stop, so that it at all times maintains the same relative position to the line-stop M. The line-stop M is likewise provided with a pointer m^6 , which coöperates with a scale N, secured to the front of the machine. The carriage B is provided with a pointer n' , which likewise coöperates with the scale N to determine the position of the printing-point. It will be observed by this construction that the line-stop is so positioned at the front of the machine that it may be readily adjusted by the oper-

ator and that the locking mechanism will be automatically operated in accordance with the setting of the line-stop. Thus whether the line be long or short, as determined by the positioning of the line-stop, the locking mechanism will be automatically operated when the stop on the carriage reaches the line-stop and will prevent the lockable key-levers from being depressed, whereas any of the key-levers which are incapable of being locked may be depressed to write the hyphen, period, or such other characters as the unlockable type-carriers may be provided with. In order to release the locking mechanism by hand after it has been automatically moved to the locking position, it is merely necessary to push forward the button O in the manner hereinbefore described, when the locking-bar L will be moved by hand to a position where it is incapable of preventing a depression of the lockable keys.

From what has been said it will be understood that the stop M acts in a twofold capacity. It acts as an adjustable line-stop to limit the movement of the carriage at any desired point and at the same time acts as a trip for transmitting motion to the locking mechanism to automatically lock and unlock the same whether the line be long or short, as determined by the positioning of the stop. It will be further appreciated that an adjustment of a single part (the line-stop) determines the length of the line or the point where the carriage will be stopped and at the same time determines when the locking and unlocking of the type-carrier shall take place, in accordance with the length of lines to be written.

While I have illustrated my invention in connection with an "Underwood" type-writing machine—such as illustrated in the patent to H. L. and F. X. Wagner, No. 633,672, dated September 26, 1899—it should be understood that the invention may be applied to any type-writing machine wherein it may be found available and that various changes in construction may be made to adapt the invention to different types of type-writing machines. It should likewise be understood that while I have described with considerable detail the construction and operation of the type bars or carriers and the key-levers and the coöperation thereof with the locking mechanism various changes may be made in the construction without departing from the spirit of my invention, which consists, broadly, in providing mechanism for locking certain of the type-carriers out of operation at the end of a line, as determined by the positioning of an adjustable line-stop, and for maintaining certain of the type-carriers free to be operated after the carriage has reached the end of the line.

Having described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a type-writing machine the combina-

tion of a movable carriage and the framing of the machine, with a stop and a trip element mounted on one of said parts, and located at different distances from the side of the machine, a stop element located on the other part and arranged to come into successive engagement with the trip and stop on the first-named part, one of the said elements being movable relatively to the part on which it is mounted, type-carriers, a locking mechanism for locking certain of said carriers while leaving others free to be operated, and an operative connection from the said movable element to the locking mechanism to bring the latter into action before the carriage is stopped positively.

2. In a type-writing machine the combination of a movable carriage and the framing of the machine, with a stop and a trip element on one of the said parts, a stop element on the other part arranged to come into engagement successively with the trip element and the stop of the other part at the end of a line, one of the said elements being movable on the part which carries it by the engagement of the said elements with each other, type-carriers, mechanism for locking certain of said carriers while leaving others free to be operated, and an operative connection from said movable element to the locking mechanism to bring the latter into action before the carriage is stopped positively.

3. In a type-writing machine, the combination with a movable carriage of a series of type-carriers, an adjustable line-stop for limiting the movement of said carriage, a scale cooperating with said line-stop and means controlled by said line-stop for automatically locking certain of said type-carriers out of action and leaving certain of said type-carriers free to be operated when the others are locked.

4. In a type-writing machine, the combination with a movable carriage of a series of type-carriers, an adjustable line-stop for limiting the movement of said carriage, means controlled by said line-stop for automatically locking certain of said type-carriers out of action and leaving certain of said carriers free to be operated when the other carriers are locked and hand-operated means for releasing the locked carriers without moving the carriage.

5. In a type-writing machine, the combination with a movable carriage of a series of type-carriers, an adjustable line-stop carried at the front of the machine for limiting the movement of said carriage, a scale cooperating with said line-stop, said scale being carried at the front of the machine, and means controlled by said line-stop for automatically locking certain of said type-carriers out of action and leaving certain of said type-carriers free to be operated when the others are locked.

6. In a type-writing machine, the combination of a movable carriage, an adjustable line-

stop, means for locking certain of said type-carriers out of action and for permitting certain others to remain unlocked when the first-mentioned carriers are locked, intermediate mechanism between the line-stop and the locking means for automatically operating the locking means when the carriage reaches the stop and for releasing the locked carriers when the carriage is moved away from the stop and hand-operated means for releasing the locking means without moving the carriage.

7. In a type-writing machine, the combination of a movable carriage, a series of type key-levers some of which have locking abutments thereon and others being devoid of such abutments, a line-stop, a locking-bar adapted to engage the abutments on the type key-levers to maintain the same against movement and intermediate mechanism between the line-stop and the locking-bar for automatically operating the locking-bar when the carriage reaches the line-stop.

8. In a type-writing machine, the combination of a movable carriage, a series of type key-levers some of which have locking-abutments thereon and others being devoid of such abutments, a line-stop, a locking-bar adapted to engage the abutments on the type key-levers to maintain the same against movement and hand-operated means for releasing the locking-bar from engagement with the type key-levers.

9. In a type-writing machine, the combination with a movable carriage, of two cooperating parts, viz; a stop and a trip, one of the said last-mentioned parts being adjustable relatively to the other and one of them being carried on the carriage while the other is carried by the framing of the machine, and one of said parts being movable relatively to its support and being provided with a cam or engaging portion arranged to be engaged by the other part before the movement of the carriage is positively stopped, such engagement being effective to move said part relatively to its support, type-carriers, a locking mechanism for locking certain of said carriers while leaving others free to be operated, and an operative connection from said movable part to the locking mechanism to bring the latter into action before the carriage is stopped positively.

10. In a type-writing machine the combination of two component portions, viz; a movable carriage and the framing of the machine, with type-carriers, mechanism for locking certain of said carriers while leaving others free to be operated, cooperating parts on the framing of the machine and on the carriage to positively stop the latter, a trip element located on one of the said portions, a cooperating element on the other portion, one of the said elements being movable on the portion carrying it when the said elements engage each other before the carriage is positively stopped, and an operative connection from said mov-

able element to locking mechanism, to bring the latter into action before the carriage is stopped positively.

11. In a type-writing machine the combination of a movable carriage and the framing of the machine, with type-carriers, mechanism for locking certain of said carriers while leaving others free to be operated, cooperating elements located respectively on the carriage and on the framing and operatively connected with the locking mechanism to bring the latter into action before the end of a line, and means for positively arresting the carriage after the locking mechanism has been operated.

ected with the locking mechanism to bring the latter into action before the end of a line, and means for positively arresting the carriage after the locking mechanism has been operated.

WILLIAM W. MORRISON.

Witnesses:

H. F. WHITCOMB,

HENRY J. JAY.