No. 731,564. PATENTED JUNE 23, 1903.

H. J. HALLE.

TYPE WRITING MACHINE.

APPLICATION FILED JUNE 10, 1902.

NO MODEL. 3 SHEETS—SHEET 1.

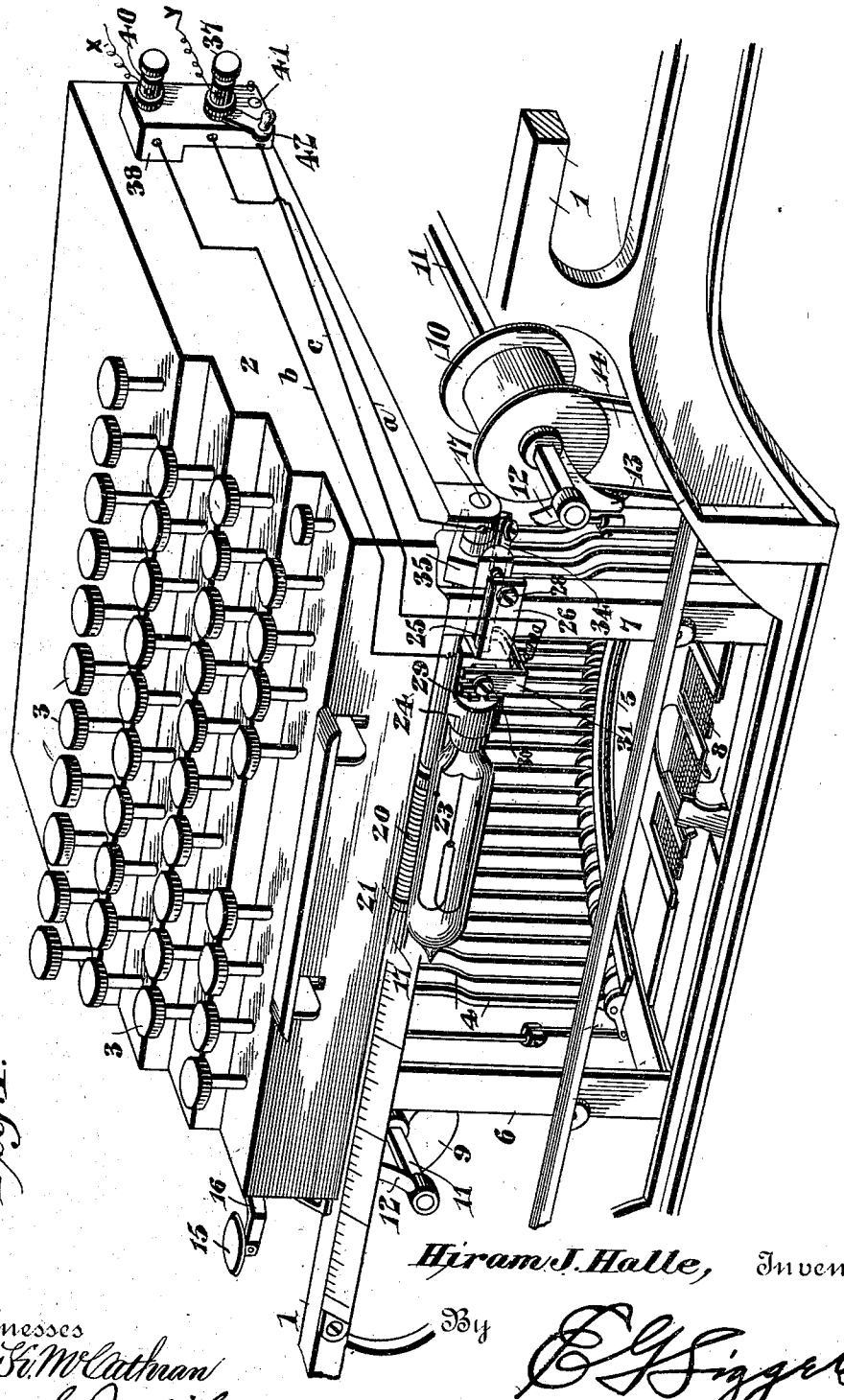


Fig. 1.

Witnesses
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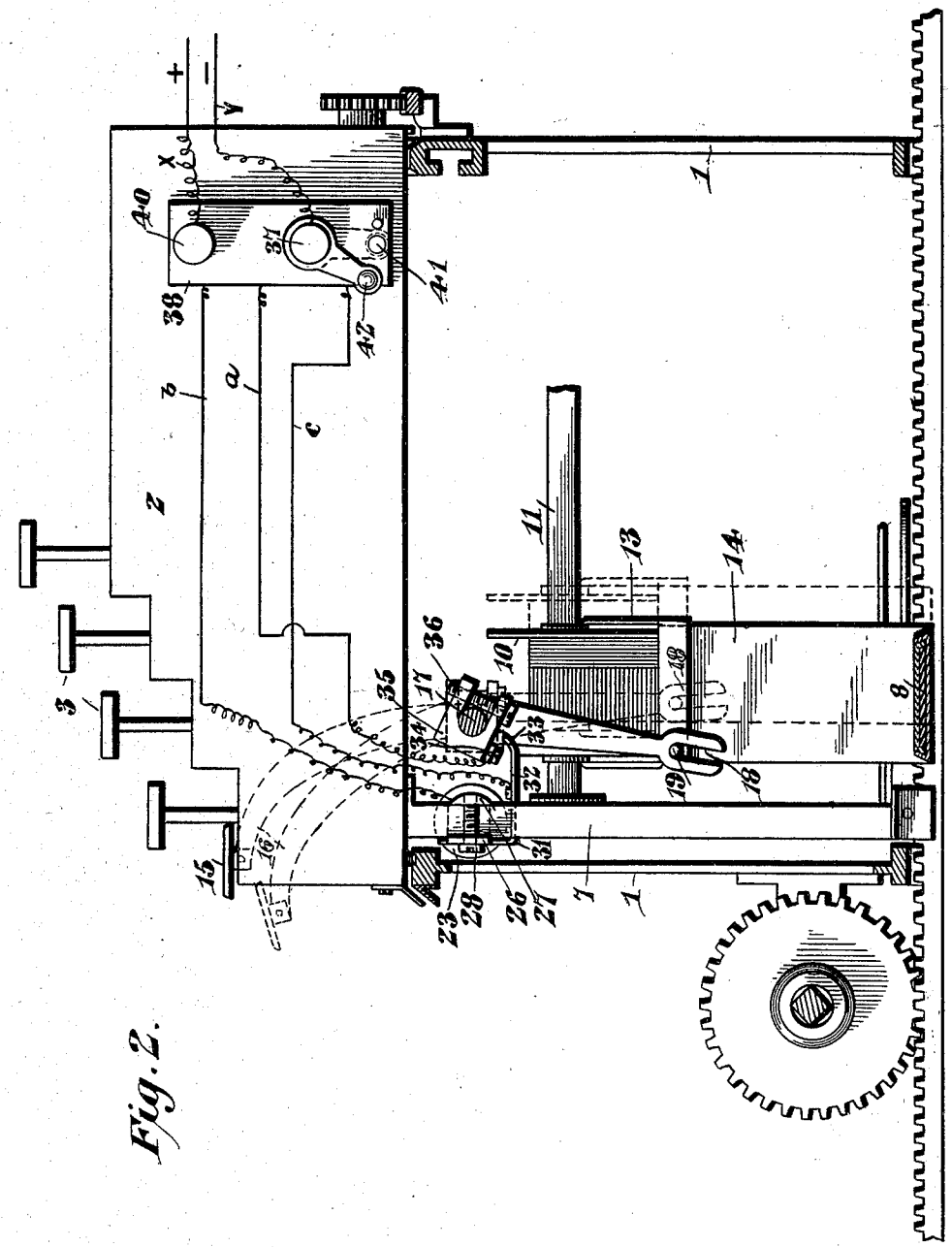


Fig. 2.

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NO MODEL. 3 SHEETS—SHEET 3.

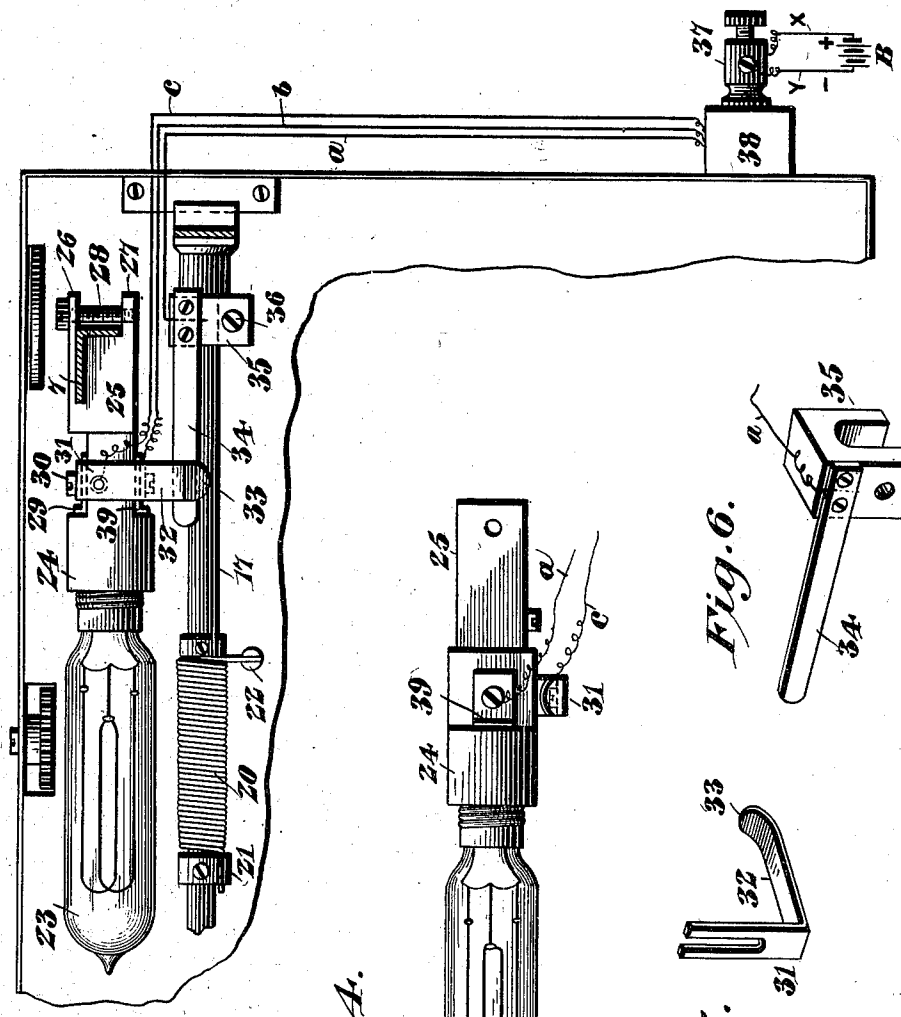


Fig. 3.

Fig. 4.

Fig. 6.

Fig. 5.

Witnesses
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No. 731,564. Patented June 23, 1903.

UNITED STATES PATENT OFFICE.

HIRAM JOSEPH HALLE, OF CLEVELAND, OHIO, ASSIGNOR TO THE FISHER BOOK TYPEWRITER COMPANY, OF CLEVELAND, OHIO, A CORPORATION OF DELAWARE.

TYPE-WRITING MACHINE.

SPECIFICATION forming part of Letters Patent No. 731,564, dated June 23, 1903.

Application filed June 10, 1902. Serial No. 111,053. (No model.)

To all whom it may concern:

Be it known that I, HIRAM JOSEPH HALLE, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented a new and useful Type-Writing Machine, of which the following is a specification.

This invention relates to type-writing machines, and has special reference to an illuminating attachment designed to illuminate the work-sheet for the purpose of facilitating the inspection of the work.

It frequently happens, particularly in large establishments, that type-writing machines are located at points where it is impossible to secure sufficient light; and my invention therefore has for its object to provide the machine with an electric light, so located that the work will be illuminated either continuously or intermittently, according to the desire of the individual operator.

To the accomplishment of this object the invention comprehends the attachment of a small electric light at a convenient point upon the frame structure and in the provision of circuit-closing devices arranged to permit the circuit to be closed through the lamp continuously if a constant light is desired or intermittently if it is desired to illuminate the work at intervals only—as, for instance, at such times as the ribbon may be shifted laterally from the printing-point to reveal the writing.

Certain other objects subordinate to those enumerated and various novel features of construction and arrangement will appear during the course of the following description of that form of my invention which for the purpose of this disclosure is illustrated in the accompanying drawings and succinctly defined in the appended claims.

In said drawings, Figure 1 is a perspective view of a Fisher type-writing machine equipped with my lighting attachment. Fig. 2 is a sectional elevation of the same. Fig. 3 is a bottom plan view, partly in section, of a portion of the traveling carriage, illustrating the manner in which the attachment is mounted thereon. Fig. 4 is a detail view of the lamp and its bracket. Fig. 5 is a detail perspective view of the contact-arm carried by the lamp, and Fig. 6 is a similar view of the movable contact-arm and the bracket for securing the same to the ribbon-shift shaft.

Like characters of reference are employed to designate corresponding parts throughout the views.

While the invention contemplates in its broad aspect the equipment of a type-writing machine of any character with a lighting or illuminating device, the attachment illustrated in the accompanying drawings is particularly designed for the equipment of what is known in the art as a "Fisher" type-writing machine, to which it is shown applied. The Fisher type-writer includes in its organization what is known as the "machine-frame" 1, designed to travel longitudinally over the flat platen (not illustrated) and slidably supporting a carriage 2, movable transversely of the platen. This carriage supports the printing mechanism, including the keys 3, operatively connected to a series of type-bars 4, mounted upon a supporting-ring of segmental form sustained at the lower ends of vertical bars or hangers, two of which (indicated by 6 and 7) are pendent from the carriage proper adjacent to its front edge, as indicated in Fig. 1. These bars or hangers 6 and 7 are located at the ends of the segmental type-bar-supporting ring 5, and as the type-bars strike downwardly toward the axis of the type-ring the printing-point is in full view of the operator. During the printing operation, however, the line being written is obscured by the ribbon 8, which extends under the type-ring from the opposite sides of the carriage, where its ends are wound upon the ribbon-spools 9 and 10, shiftably mounted upon the spool-shafts 11, journaled in shaft-hangers 12, as shown. The ribbon is fed longitudinally, in a manner well understood in the art, by the rotation of the ribbon-spools; but as the ribbon-feeding mechanism constitutes no part of the present invention it has not been fully illustrated and need not be described.

In the present embodiment of the invention provision has been made for closing the circuit through an electric lamp, constitut-

ing the primary element of the attachment, whenever the ribbon is shifted laterally to expose the writing, and the ribbon-shift mechanism, although no part of my present invention, except as it enters into a novel combination, may therefore be described. Associated with each of the ribbon-spools so as to be shiftable therewith are ribbon-frame-supporting brackets 13, connected to a ribbon guiding and supporting frame 14, designed to properly guide the ribbon as it is fed from one spool to another and to maintain the ribbon in proper position as it is shifted laterally. The ribbon-shift mechanism—that is to say, the mechanism by means of which the operator shifts the ribbon laterally from the printing-point when it is desired to inspect the writing—includes a ribbon-shift key 15, formed at one end of a ribbon-shift lever 16, secured to the end of a rock-shaft 17 and having its lower extremity forked, as indicated at 18, for engagement with a stud 19, projecting from the adjacent bracket 13. Ordinarily the ribbon occupies a position opposite the printing-point and is yieldingly retained in such position by a spring 20, coiled upon the shaft 17 and having its opposite ends engaged by a set-collar 21, secured to the shaft, and a post 22, secured to the bottom of the carriage-casing. (See Figs. 2 and 3.) It will be noted that upon the depression of the ribbon-shift key 15 the ribbon, together with its frame and spools, will be laterally shifted a sufficient distance to entirely displace the ribbon from the printing-point, and as the front of the carriage is open (see Fig. 1) this shifting of the ribbon will reveal the writing for the inspection of the operator. Upon the release of the key the spring 20 will automatically return the ribbon to its initial position.

The structure embraced in the foregoing description is all that need be described in order that the relation of the lighting attachment to the machine may be fully comprehended, and the construction and arrangement of the attachment proper will now be considered.

The lamp (indicated by 23) is preferably what is known as an "incandescent electric" lamp of small size and is located in the present instance immediately below the carriage-casing, adjacent to the front edge thereof, and directly above the printing-point. This location of the lamp is desirable for the reason that while it enables the writing to be properly illuminated the lamp is more or less obscured from the operator by the carriage. The lamp 23 is retained, as usual, by a lamp holder or socket 24, to which latter I have attached a lamp-bracket 25. This bracket is bifurcated for the reception of the hanger or upright bar 7, adjacent to the upper end of which it is secured. It will of course be understood that the particular manner of attaching the lamp to the machine structure may be varied as occasion may require; but in the illustrated structure the bifurcations 26 and 27 of the bracket 25 are extended somewhat beyond the hanger 7 for the reception of a draw-bolt 28, by means of which the bifurcations are drawn up to securely clamp the lamp-bracket to the hanger. It will be noted that by locating the lamp as stated it will be disposed closely adjacent to and parallel with the ribbon-shift shaft 17. This is particularly desirable for the reason that a circuit-closing device for the lamp-circuit may thus be operated by the movement of the shaft to close the circuit through the lamp whenever the ribbon-shift mechanism is operated to move the ribbon away from the printing-point.

To one terminal plate 29 of the lamp is adjustably attached, by means of a screw 30, an angular contact-arm 31, one end 32 of which extends horizontally and has an upturned or deflected end 33 located adjacent to the ribbon-shift shaft 17. (See Figs. 2 and 3.) A second contact-arm 34 is adjustably secured to the ribbon-shift shaft 17—as, for instance, by means of an attaching-bracket 35, secured in place by a draw-bolt 36. The arm 34 is disposed substantially parallel with the shaft, slightly to one side thereof, and is designed to contact with the end 33 of the contact-arm 31 when the ribbon-shift shaft 17 is rocked by the depression of the ribbon-shift key 15 when the ribbon is shifted laterally to expose the writing. These contact-arms 31 and 34 constitute a circuit-closing device for the lamp.

A lead-wire a is connected to the contact-arm 34 (see Fig. 3) and to a binding-post 37, mounted on a switch-block 38, preferably mounted upon one end of the carriage-casing adjacent to its rear edge. A second lead-wire b is connected to the second terminal plate 39 of the lamp and to a second binding-post 40 on the switch-block, circuit-wires x and y being extended from the binding-posts to a suitable source of electrical energy. In the accompanying drawings I have indicated a battery B in the lamp-circuit; but obviously the circuit-wires of the lighting and power systems installed in buildings might be attached to the binding-posts with equal facility.

It will now be observed that whenever the operator depresses the ribbon-shift key 15 the ribbon will be shifted away from the printing-point, and the shaft 17 will be rocked for the purpose of closing the lamp-circuit by bringing the arm 34 into contact with the arm 31, and the lamp will thus be automatically lighted whenever the ribbon-shift mechanism is operated. The lamp-circuit when closed in the manner stated may be traced as follows: from the binding-post 37 through the wire a to the contact-arm 34, thence to the arm 31, to the lamp-terminal 29, through the lamp to the terminal 39, through the wire b to the binding-post 40, and thence through the circuit-wires and battery to the first-named binding-post 37. Upon the release of the ribbon-shift key the ribbon will be re-

stored to its normal position by the spring 20, and the shaft 17, being rocked in the reverse direction, will move the contact-arm 34 away from the arm 31 to break the lamp-circuit, and thus automatically extinguish the light after the illuminated work has been inspected.

The arrangement described is considered preferable when the attachment is employed in connection with a Fisher type-writing machine; but it is by no means essential that the ribbon-shift mechanism be utilized for the purpose of effecting the opening and closing of the lamp-circuit. The desired end may be attained by arranging a circuit-closing device for actuation by any movable part of the machine, whether key-operated or not, and instead of opening and closing the lamp-circuit automatically it may be done manually by the use of an ordinary switch-button either attached to the lamp-socket or located at a remote point.

Thus far we have considered the lighting attachment merely as a device for illuminating the writing whenever the latter is exposed by the shifting of the ribbon; but it may be desirable under some circumstances to employ the light continuously, and this may be done without annoyance to the operator, for the reason that the lamp is so located, as heretofore stated, that the eyes of the operator will be shielded from the bright light. I have therefore connected a third lead-wire *c* to the contact-arm 31 and to a contact-plate 41, mounted in the switch-block 38. The contact-plate 41 is located to one side of the binding-post 37, upon which is mounted a swinging switch-arm 42, designed to be swung into and out of contact with the plate 41. If the operator desires a constant light, it is simply necessary to swing the switch-arm 42 into contact with the plate 41, thus closing the circuit through the lamp as follows: from the binding-post 37 through the arm 42, contact-plate 41, wire *c*, arm 31, lamp-terminal 29, thence through the lamp to the terminal 39, thence through the wire *b* to the binding-post 40, and thence through the circuit-wires and battery back to the binding-post 37.

From the foregoing my lighting attachment will be seen to include an electric lamp carried by the machine structure and a pair of circuit-closing devices, one of which is manually operated for the purpose of securing a continuous or constant light and the other of which is automatically operated intermittently by a moving part of the machine, preferably an element of the ribbon-shift mechanism, to effect the lighting of the lamp at such times only as the writing may be revealed to the operator by the shifting of the ribbon away from the printing-point. I wish it to be distinctly understood, however, that while the present embodiment of the invention is thought at this time to be preferable the invention in its broader aspect comprehends the equipment of a type-writing machine with an electric light or other illuminating device, irrespective of its construction and arrangement, and I therefore reserve the right to effect such changes, modifications, and variations of the illustrated structure as may be fairly comprehended within the scope of the protection prayed. For instance, if applied to cylindrical-platen machines the lamp should be attached to a fixed part of the frame at a suitable point to throw light on the work and in such relation to the carriage that when the same is raised to view the work the light is turned on by the mere act of raising the carriage, and I desire it understood that I consider this modification to come within the purview of my invention.

What I claim is—

1. The combination with a type-writing machine including a traveling carriage and ribbon-shift mechanism, of a lamp movable with the carriage and arranged to illuminate the work at the constantly-changing printing-point, and means for automatically lighting the lamp when the ribbon-shift mechanism is operated to expose the work.

2. The combination with a type-writing machine having a traveling carriage, and ribbon-shift mechanism including a ribbon-shift key, of a lamp mounted on and movable with the carriage and arranged to illuminate the work, and means operated by said key to light the lamp whereby the work is simultaneously exposed and illuminated.

3. The combination with a type-writing machine having a traveling carriage and the printing mechanism thereon, of an electric lamp mounted on and movable with the carriage to maintain its position with respect to the constantly-changing printing-point of the work, a lamp-circuit including a circuit-closing device, and means for operating said device by a movable part of the machine.

4. The combination with a type-writing machine having a traveling carriage and ribbon-shift mechanism, of an electric lamp mounted on the carriage to illuminate the work, a lamp-circuit including a circuit-closing device, and means for automatically operating said device to light the lamp when the ribbon-shift mechanism is operated to expose the work.

5. The combination with a type-writing machine, having a traveling carriage, of a lamp arranged to illuminate the work at the changing printing-point, a plurality of separate devices for lighting the lamp, and means for automatically operating one of said devices.

6. The combination with a type-writing machine including ribbon-shift mechanism, of a lamp arranged to illuminate the work at the changing printing-point, and a plurality of separate devices for lighting the lamp, one of said devices being operatively connected to the ribbon-shift mechanism whereby the simultaneous exposure and illumination of the work may be effected.

7. The combination with a type-writing machine, having a traveling carriage, of an electric lamp mounted on the carriage and ar-

ranged to illuminate the work, a lamp-circuit, a plurality of circuit-closing devices controlling said circuit, and means operatively connecting one of said devices with a moving part of the machine for actuation thereby.

8. The combination with a type-writing machine including a carriage and ribbon-shift mechanism, of an electric lamp arranged to illuminate the work at the changing printing-point, a lamp-circuit, a plurality of separate circuit-closing devices controlling said circuit, and means for automatically operating one of said devices when the ribbon-shift mechanism is operated whereby the work may be simultaneously exposed and illuminated.

9. The combination with a type-writing machine including a traveling carriage, of an electric lamp carried thereby and arranged to illuminate the work at the changing printing-point, a lamp-circuit including a circuit-closing device, means for operating said device from a movable part of the machine to light the lamp at intervals, and a switch for shunting the circuit around the circuit-closing device when a constant light is desired.

10. The combination with a type-writing machine including a traveling carriage and ribbon-shift mechanism, of an electric lamp mounted on the carriage and arranged to illuminate the work, a lamp-circuit including a circuit-closing device operatively connected to the ribbon-shift mechanism for actuation thereby, to light the lamp and illuminate the work when the ribbon is shifted away from the printing-point, and a switch for shunting the circuit around the circuit-closing device when a constant light is desired.

11. The combination with a type-writing machine including a traveling carriage and ribbon-shift mechanism, of an electric lamp mounted on the carriage to illuminate the work, a lamp-circuit including a circuit-closing device, means for automatically operating said device when the ribbon-shift mechanism is operated, and a switch also mounted on the carriage to shunt the circuit around the circuit-closing device when a constant light is desired.

12. The combination with a type-writing machine, including ribbon-shift mechanism, and a traveling carriage comprising a casing and a subjacent type-basket, of a lamp mounted on the carriage below the casing, and means for automatically lighting the lamp to illuminate the work when the ribbon-shift mechanism is operated.

13. The combination with a type-writing machine, including ribbon-shift mechanism, and a traveling carriage comprising a casing, a pendent type-ring and hangers supporting said ring, of a lamp mounted on one of said hangers, and means operatively related to the ribbon-shift mechanism to light the lamp when the ribbon is shifted away from the printing-point.

14. The combination with a type-writing machine, including ribbon-shift mechanism and a traveling carriage, of an electric lamp to illuminate the work, said lamp having a contact-arm connected to one terminal, a rock-shaft constituting an element of the ribbon-shift mechanism and having a second contact-arm disposed to contact with the first-named arm when the shaft is rocked, a circuit-wire connected to the other lamp-terminal and to the second contact-arm, and means for rocking the shaft to shift the ribbon away from the printing-point and to simultaneously close the circuit through the lamp.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

HIRAM JOSEPH HALLE.

Witnesses:
GEO. C. RUSSELL,
CHAS. F. LAGAUBE.