

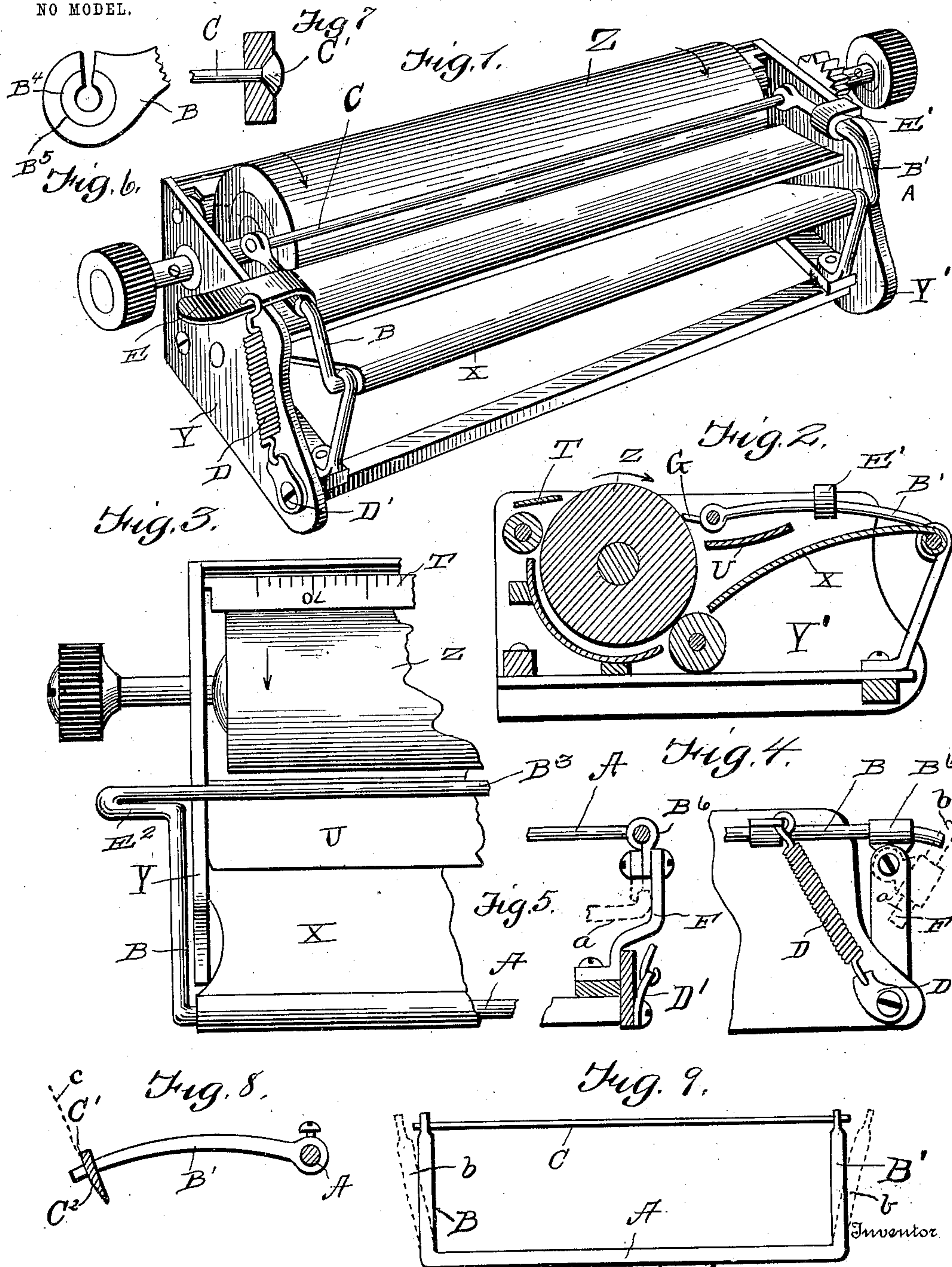
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J. H. CORNELISON.  
PAPER CONTROLLER FOR TYPE WRITERS.

APPLICATION FILED MAY 19, 1903.

NO MODEL.



Witnesses

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## UNITED STATES PATENT OFFICE.

JOHN H. CORNELISON, OF ST. LOUIS, MISSOURI.

## PAPER-CONTROLLER FOR TYPE-WRITERS.

SPECIFICATION forming part of Letters Patent No. 763,660, dated June 28, 1904.

Application filed May 19, 1903. Serial No. 157,791. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN H. CORNELISON, of the city of St. Louis, in the State of Missouri, have invented certain new and useful Improvements in Paper-Controllers for Type-Writing Machines; and I do declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference thereon, which form a part of this specification.

My invention relates to improvements in that class of paper-controlling devices for type-writers which are attached to the carriage of the machine and whose office is to hold the paper along the printing-line and adjacent thereto in close and perfect contact with the surface of the platen-roller, to the end that the printing may be sharp and in perfect alinement.

Hitherto it has been customary for makers of the class of machines to which this invention relates to provide guide-fingers for receiving the top end of the sheet of paper as soon as it emerged from under the guide-rollers or graduated bar at the front of the machine, and it being necessary in practice to adjust these fingers to various widths of paper it was necessary to provide a fixed horizontal bar across the top of the carriage to which the fingers could be attached and move laterally. The result of this construction has been to greatly obscure the printing as soon as the paper had passed a short distance beyond the printing-line, it being impossible to read the matter written continuously from the beginning to the last printed and still on the printing-line without turning the paper forward, so as to bring the last matter printed completely beyond the horizontal bar and the fingers and their brackets, and if the page was nearly completed this would release the bottom end of the paper completely from the clamping-rollers of the machine, and it would then be necessary to reinsert the sheet, as at the beginning, and lose much time in getting the adjustment with the previous printing, so that it might be completed to the bottom of the page. This obscuration was especially troublesome in footing up columns of figures.

My main idea is to obtain visibility, and to

attain this object I place the materials necessary to give corporal strength to the controller as much as possible under the rear and at the ends of the carriage and attenuate to a minimum those portions which must pass more or less across the written sheet and to place this minimum so as to come between the written lines in such a manner that the written matter can be read continuously from beginning to end so far as the controller is concerned.

My invention does away with the necessity for guide-fingers to receive the paper, it being only necessary to turn the paper forward freely until the top end comes within the scope of the controller and above it. The controller is then raised upward and comes down on top of the sheet of paper, curving it tightly against the platen-roller. To thus properly hold down the paper, gravity alone may be used, or gravity may be assisted by springs. The controller may be lifted upward and backward at any time the operator may desire for any reason whatever.

The simplicity and peculiar nature of my controller is such as to permit of its being readily attached to standard makes of machines now on the market without in any way altering the machines, except to remove their old forms of guides and to attach my invention instead by means of screws or bolts already a part of the machines.

In order that my invention may be fully understood, I will proceed to describe it with reference to the following drawings, in which—

Figure 1 is a perspective rear view of the controller attached to a carriage of the type-writer. Fig. 2 is a partial section of carriage and controller. Fig. 3 is a top view of the right-hand end of the carriage with one form of controller attached. ("Right hand" and "left hand" as used in this description is on the supposition that the reader occupies the position of the operator in front of the machine.) Fig. 4 is an elevation of the rear part of the right-hand end of the carriage, showing one method of attaching the controller to the carriage; also, tension-spring and method of attaching same; also, movement of



rear parts of controller. (Indicated by dotted lines.) Fig. 5 is a partial elevation and section of the same parts shown in Fig. 4. Fig. 6 is an enlarged side elevation of the forward end of arm, showing one method of attaching the cord or wire used to connect the arms under tension. Fig. 7 is a section of Fig. 6, showing wire attached. Fig. 8 is a side elevation and partial section showing an arm of the controller attached to rear horizontal bar and to strip of metal which connects the forward end of the arms; also, one method of attaching arm to the strip of metal by perforating and riveting; also, construction of rear end of arm when it is intended to be made detachable from the rear rod or bar of the controller. Fig. 9 is a reduced view of one form of controller, showing wire or cross-bar of controller attached to arms of controller under tension, the arms and rear horizontal bar being made integral.

My invention is represented in the accompanying drawings by the first letters of the alphabet in capitals and the parts of the type-writer carriage by the last letters of the alphabet, also in capitals. The small or lower-case letters have relation to dotted lines of movement. The same letters are used to designate the same parts in the different figures. The arrows indicate the route taken by a sheet of paper when being passed through the machine and controller.

A is the rear horizontal rod or bar hinged to rear of carriage, having two forward-projecting arms B and B' made integral or firmly attached thereto, and C, C', and C<sup>2</sup> represent the connecting cord, wire, or bar between the outward extremities of the arms.

The arms B and B' may be placed so as to come inside of the end plates Y and Y' of the carriage, as shown in Fig. 1, or they may be placed outside, as shown in Fig. 3. When placed inside the end plates Y and Y', the arms are provided with projections or lugs E and E', integral or attached, which by striking on the top edges of the end plates Y and Y' regulate the depression of the forward ends of the arms, and consequently the connecting cord, wire, or cross-bar C. When the arms are placed outside of the end plates Y and Y', the connecting cord, wire, or bar C or the inward-turning extremities of the arms B<sup>3</sup>, Fig. 3, strike upon the end plates and take the place of the lugs E and E'. If the end plates Y and Y' are not of sufficient height, the lugs may be turned downward, so as to form legs to rest upon the apron U or any other available part of the frame of the carriage, or the arms B and B' may be extended forward, as shown by G in Fig. 2, so as to rest upon the platen-roller Z near its ends. The lugs E, E', and E<sup>2</sup> may be used as handles for lifting the controller and to furnish means of attaching the upper end of the tension-spring D to it, the lower end being attached

to the carriage by the lug D', thus assisting gravity to hold the cord, wire, or cross-bar C a constant distance from the platen-roller Z and apron U, so that the sheet of paper shall have sufficient room for free passage under cross bar or wire C and at the same time be sufficiently restricted thereby.

One method of constructing the lugs is shown by E<sup>2</sup>, Fig. 3. The rod or bar of which the arms are constructed is bent forward and then back upon itself. The form of controller shown in Fig. 3 is one where horizontal lateral projections of the arms extend only partly across the paper and are substituted for the continuous wire or bar C.

Several methods may be used in attaching the controller to the carriage of type-writers, the desirability of each depending upon such circumstances as whether the controller is to be incorporated with the machine at the factory or to be attached to machines already in use, and the detailed construction of the controller is subject to like conditions. Where the controller is to be incorporated with the machine at the factory, the rear horizontal bar and its two forward-projecting arms are preferably made integral by bending a rod of spring metal in general shape (shown in Fig. 9) and attaching it to carriage by wrapping the rear edge of the sheet-metal apron X around the rear horizontal bar A, so as to form a closely-restricting cylinder in which the rod or bar may revolve rotatively, as shown in Fig. 1 and Fig. 3. Where it is desired to attach the controller to machines already in use, lugs of the form of F are used, as shown in Figs. 2, 4, and 5, their upper ends being so constructed as to hold the rear horizontal bar securely but rotatively and their lower ends bent, drilled or slotted, or both, so that they may be securely attached to the frame of carriage by means of bolts or screws, or the lugs F may be turned so as to face to the sides and be attached to other lugs B<sup>6</sup>, which in turn are attached to the forward-projecting arms B and B' near their rear in such a manner that controller may be revolved on the connections between the lugs in manner as shown by dotted lines *a* and *b*, Figs. 4 and 5. One advantage of attaching controller in this manner is that when it is raised upward and backward lug B<sup>6</sup> comes in contact with lug F, acting as a stop to prevent the further backward movement of the controller and to hold it in position, as shown by dotted lines in Figs. 4 and 5.

When it is desirable to use the cylinder-hinge on the rear of apron X, as described, and still have the controller readily detachable, the rear horizontal bar A and the arm B may be made integral and the arm B' made so as to be readily detachable by enlarging its rear end and perforating it, so as to receive the end of the rod A, to which it may be attached non-rotatively by a set-screw or other suitable



mechanical device. With the arm B' removed the rear horizontal bar may be readily inserted or withdrawn from the cylindered edge of the apron X. The construction of B' when made to be detachable is shown in Fig. 8, embracing a section of rear bar A to which it is attached by a set-screw.

As hereinbefore stated, the main object of my invention is visibility and with this object in view to remove as far as possible all materials necessary to give corporal strength to the controller beneath and to rear and sides of the carriage and to reduce to a minimum those parts which must of necessity pass more or less over or across the face of the printed page. To attain these results in the best manner, it is desirable to make the rear horizontal rod or bar and its forward-projecting arms of spring metal, to the end that the arms may stay in plane and preserve the proper angle and relations to the rear horizontal rod or bar, and, further, to be capable of maintaining tension along the connecting cord, wire, or bar C, for it is a fact that smallness in such materials as are suited for connections between the ends of the arms is best obtained by tension. The horizontal rear rod or bar and the forward-projecting arms, whether made integral or detachable, should be so constructed that the outer ends of the arms when released from their connection through the cord, wire, or bar C will assume a position wider apart than when so connected—in other words, shall exert a tension force along the connecting cord, wire, or bar C by being drawn toward each other through this means—or the arms may be comparatively rigid and tension secured for the cord, wire, or rod C by placing springs inside the ends of the arms, or rubber may be used in part or in whole for the connections. Tensioned construction is shown in Fig. 9, the dotted lines *b* indicating position assumed by the arms when released from connection C.

The cross cord, wire, or bar C may be attached to the ends of the arms B and B' by any mechanical device suited to the nature of the materials used. Where a wire is used, as shown by C', Fig. 7, it is preferable to have the ends of the arms perforated horizontally, slotted and countersunk on the outside, and the ends of the wire enlarged. The slots are made wider than the body of the wire, but

less than its enlarged ends. By means of the tension given the wire by the arms the enlargements are drawn into the countersinks and securely retained thereby, or the wire or cord may be simply threaded into the perforations and tied or may be secured by hooks. Where a metal bar or strip is used to connect the arms, their ends are reduced and a shoulder created thereon, the reduction inserted into slots made in the bar or strip and secured thereto by riveting or by means of threaded nuts. The riveting method is shown in Fig. 8. Where a metal strip or bar is used for connecting the ends of the arms, it is preferable that it be inclined toward the operator, so as to show the least possible surface, and should have its lower edge made thin in order that the writing may be obscured as little as possible, as shown by C<sup>2</sup>, Fig. 8. The dotted line *c* indicates a desirable angle of inclination for the bar. Where it is undesirable for any reason to use the wire C, the extremities of the arms B and B' may be provided with attenuated lateral projections extending partly across the paper, as shown by B<sup>3</sup>, Fig. 3.

Having thus described my invention, the following is what I claim as new therein and desire to secure by Letters Patent:

1. A paper-controller for type-writers comprising in combination with a carriage and paper-roll, a pivotal bail-shaped member mounted upon said carriage, a tension-bar mounted in the ends of the bail-shaped member, a projection from said bail-shaped member, a spring fixed at one end to the carriage and at its other end to said projection adapted to hold said tension-bar yieldingly adjacent to the paper-roller, as set forth.

2. A paper-controller for type-writers comprising in combination with a carriage with paper-roller thereon, a pivoted bail-shaped member mounted upon said carriage and having its ends bent in alinement with each other and forming tension means which ends are held adjacent to the paper-roller, a portion of said bail-shaped member serving to limit the movement of the tension means toward the paper-roller, as set forth.

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