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Patented Feb. 11, 1902.

T. OLIVER.

PAPER GUIDE FOR TYPE WRITING MACHINES.

(Application filed Sept. 20, 1901.)

(No Model.)

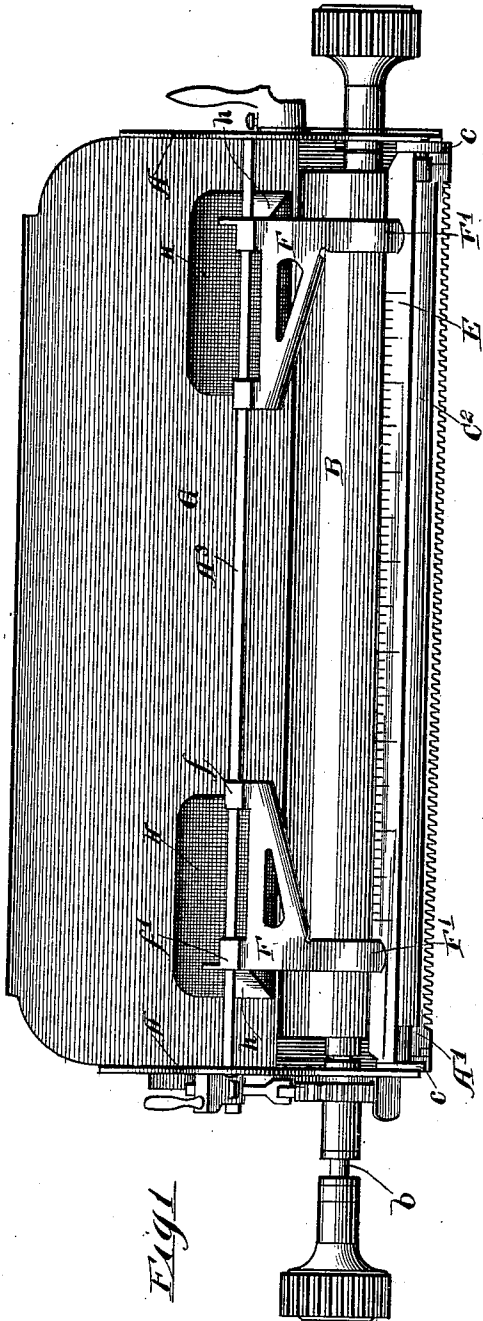


Fig. 1

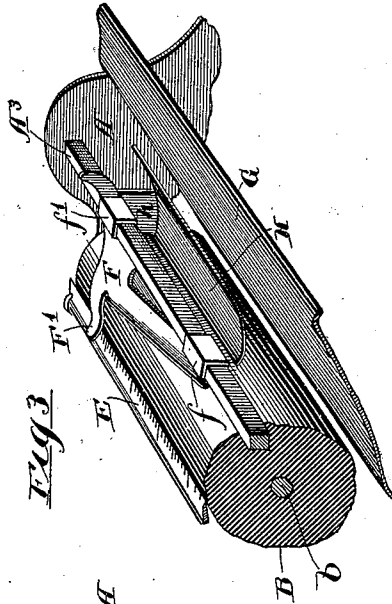


Fig. 3

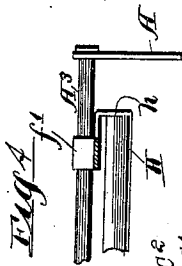


Fig. 4

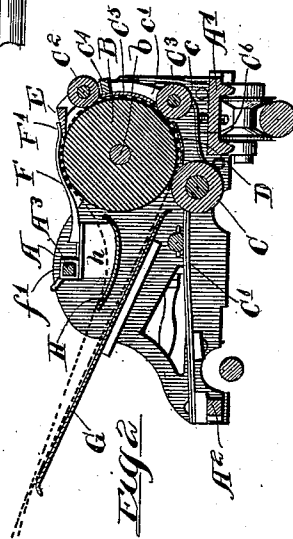


Fig. 2

Witnesses:

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# UNITED STATES PATENT OFFICE.

THOMAS OLIVER, OF WOODSTOCK, ILLINOIS, ASSIGNOR TO THE OLIVER TYPEWRITER COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

## PAPER-GUIDE FOR TYPE-WRITING MACHINES.

SPECIFICATION forming part of Letters Patent No. 693,057, dated February 11, 1902

Application filed September 20, 1901. Serial No. 75,756. (No model.)

*To all whom it may concern:*

Be it known that I, THOMAS OLIVER, of Woodstock, in the county of McHenry and State of Illinois, have invented certain new and useful Improvements in Paper-Guides for Type-Writing Machines; and I do hereby 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 marked thereon, which form a part of this specification.

This invention relates to improvements in paper-carriages for type-writing machines, and refers more specifically to guiding devices for guiding the advance edge of the sheet of paper away from the platen after it has passed the printing-line of the types.

The improvements constituting my invention are herein shown as applied to the carriage of the Oliver type-writing machine of the kind made like the carriage shown in the prior patent to Thomas Oliver, No. 599,863, granted March 1, 1898; but said improvements may be applied to machines of other kinds to which they may be adapted.

As shown in the drawings, Figure 1 is a top plan view of the principal parts of the carriage-frame of an Oliver type-writing machine. Fig. 2 is a transverse vertical section thereof. Fig. 3 is a perspective sectional view of one end of the parts of the carriage-frame equipped with my improved paper-guide. Fig. 4 is a fragmentary detail intended to show the manner of attaching the upper guide-plates to the carriage-frame.

As shown in said drawings, the carriage-frame consists of two end plates A A, a longitudinal bar A<sup>1</sup>, which extends between and is attached at its ends to the lower front part of the end plates and on which is formed the rack-bar of the spacing mechanism, a second longitudinal bar A<sup>2</sup>, which is attached at its ends to the lower rear parts of said end plates, and an upper longitudinal bar A<sup>3</sup>, which is attached to the upper margin of the end plates.

B designates the rotative platen, the shaft b of which is rotatively mounted in bearings on said end plates.

C designates a presser-roller below and in

rear of the center of the platen, between which and the platen is received the advance edge of the sheet of paper as it enters the carriage and which presses or confines said sheet in contact with the platen in its passage around the platen. The shaft of said roller is supported in bearings carried on the forward ends of spring-arms C', which are located at the opposite ends of the carriage-frame and supported at their rear ends on the end plates of said frame.

C<sup>2</sup> C<sup>3</sup> designate other presser-rollers located at the front of the platen, above and below the center line of the same, for holding the paper in contact with the platen as it passes upwardly at the front face thereof toward the striking-point of the type. The shaft of the upper roller C<sup>2</sup> is mounted at its ends in two upright supporting-arms c, one located just inside each end plate of the machine and pivoted at their lower ends to said end plates in the manner described in said prior patent to Oliver. The shaft of the lowermost roller C<sup>3</sup> is journaled at its ends in two supporting-arms c', located just inside the arms c and pivotally connected at their upper ends to said arms, the pivotal connections being formed on the ends of a horizontal rod C<sup>4</sup>, which extends across the carriage below the roller C<sup>2</sup>, the ends of said rod passing through the upper ends of the arms c' and engaging the arms c. Said rod C<sup>4</sup> affords a support for the upper edge of a guide-plate C<sup>5</sup>, which plate extends between the rollers C<sup>2</sup> C<sup>3</sup> and serves to guide the advance edge of the sheet after it passes the lower roller C<sup>3</sup>, so that it will properly pass around the front surface of the platen and between the same and the upper roller C<sup>2</sup>.

C<sup>6</sup> C<sup>6</sup> designate two leaf-springs which are attached to the carriage-frame at their lower ends, with their upper free ends bearing inwardly upon the supporting-arms c' of the lowermost roller, between the ends of said arms, in a manner to press the rollers C<sup>2</sup> C<sup>3</sup> against the platen.

D designates a guide-plate beneath the platen, connected with the forward ends of the spring-arms C', for guiding the sheet of

paper after it leaves the roller C to direct it between the platen and the roller C<sup>3</sup>. A strip E, marked with a scale, is mounted on the free ends of the supporting-arms *c* of the upper front roller-shaft, said arms being extended past the bearings of said roller-shaft a sufficient distance to afford a proper support for said strip. The strip is loosely connected at its ends with said arms, so that its free margin may adjust itself with respect to the platen.

G designates a lower guide-plate which is attached at its ends to the end plates of the carriage-frame in rear of the platen and is inclined rearwardly and upwardly therefrom. The lower margin of said guide-plate is located in position to direct the entering margin of a sheet of paper between the platen and lower rear presser-roller C.

Above the platen are located two paper-guides F, one at each end of the carriage, which are arranged obliquely and extend from points at or near the top of the platen rearwardly and inwardly. Said guides are mounted at their rear margins upon the longitudinal bar A' of the carriage-frame, each guide being provided with two sockets *ff'*, which embrace said bar and has sliding but non-rotative connection with the bar, the bar and sockets being for this purpose made square. Connected with the forward and outer ends of the oblique guides F are forwardly or transversely extending guide-fingers F', which extend over the platen to and bear at their front ends upon the free margin of the scale-bar E and which serve to engage the side margins of the sheet and to direct the advance edge thereof beneath the oblique guides F F', so that said advance edge will enter properly beneath the oblique guides as it approaches the same.

The foregoing parts of the machine are like the construction shown and described in the patent to Oliver hereinabove referred to.

Means are provided on the carriage for guiding the forward ends of the sheet of paper away from the platen after it passes the printing-line, the devices for this purpose being made as follows: H H indicate two metal plates which are located one at each end of the machine above the lower guide-plate and are movable toward and from each other longitudinally of the carriage to adjust the guides for varying widths of paper. In the specific construction shown said two upper guide-plates H H are located one at each end of the carriage above the guide-plate G and in rear of the platen. Said guide-plates H extend at their inner margins closely adjacent to the rear surface of the roller and are curved or deflected upwardly at such inner margins, being thereby adapted to deflect the advance margin of the sheet rearwardly or away from the platen after it passes the printing-point. Said guide-plates are attached at their outer ends by short vertical connecting arms or plates *h* to the outermost sockets *f'*, by which

the oblique guides F and fingers F' are supported on the longitudinal bar A' of the carriage-frame. Said connecting arms or plates *h* are located exterior to the guide-fingers F' F', so that the side margins of the paper which move beneath said guide-fingers will pass within and clear of the said arms or plates. Said upper guide-plates are therefore movable toward and away from each other and, being attached to the guides F, move with the oblique guides inwardly and outwardly longitudinally of the bar. Said upper guide-plates H are intended to engage the marginal parts of the paper only and, being adjustable inwardly and outwardly or toward and away from each other, may be adjusted in position for proper engagement with sheets of paper which vary considerably in width. For cards or envelopes said guides will be brought near each other, while for sheets as wide or nearly as wide as the length of the platen they will be moved to the outer ends of the same. The guide-fingers F' of the oblique guides F are designed to be adjusted in position for engagement with the side margins of the paper, so that the advance edge of the sheet will always be carried beneath said oblique guides, and said guide-plates H being connected and moving with said oblique guides F and guide-fingers F' the relation of said parts is always preserved, thereby requiring no independent adjustment thereof. In other words, when said oblique guides and guide-fingers are placed in proper position for the passage of sheets of paper of a certain width the guide-plates H will also be brought into proper position for engagement with such sheets.

The paper in its passage through the carriage is directed by the lower guide-plate G between the platen and the first presser-roller C and is guided around and pressed against said platen by said roller C and the presser-rollers C<sup>2</sup> C<sup>3</sup> and guide-plates D and C<sup>5</sup> and after leaving the upper roller C<sup>3</sup> passing between the platen and guide-fingers F' into contact with the oblique guides F, which act upon the advance edge of the paper to carry the same below said guides. As the advance edge of the sheet passes beyond the said oblique guides it comes in contact with the upper surfaces of said guide-plates H and is deflected thereby outwardly or horizontally, so that it will pass freely over the incoming part of the paper, which rests on the lower guide-plate G. Manifestly the guides thus arranged serve to prevent the advance edge of the sheet being caught by the inwardly-moving part of the sheet below it, thereby avoiding possibility of said advance edge being carried inwardly with such ingoing part of the sheet beneath the platen and passing again around the latter. The guide-plates H are preferably made of sheet metal, and the guide-plate and the oblique guide at each end of the carriage may be made of a single piece of sheet metal, if desired.

I claim as my invention—

1. The combination with a paper-carriage and platen of two guide-plates for guiding the paper away from the platen after it has passed the printing-point, said guide-plates being arranged parallel with the platen and located one at each end of the same, said guide-plates being supported from the carriage at their outer ends and being free at their inner or adjacent ends and having sliding engagement with the carriage to afford movement thereof on the carriage toward and away from each other.

2. The combination with a paper-carriage, a platen mounted therein and presser-rollers for holding the paper against the platen, and a lower paper-guide on which the paper rests as it approaches the platen, of two guide-plates for guiding the paper away from the platen after it has passed the printing-point, and a longitudinal bar on the carriage-frame on which said guide-plates are supported, said plates having sliding connection at their outer ends with the said bar and being free at their inner ends.

3. The combination with a carriage, a platen mounted therein, and presser-rollers for holding the paper against the platen, a lower

paper-guide on which the paper rests as it approaches the platen and guide-fingers for the side edges of the paper which extend over and are adjustable endwise of the platen, of two guide-plates, one at each end of the carriage, which are attached at their outer ends to and are movable with said guide-fingers.

4. The combination with a carriage, a platen mounted therein, and presser-rollers for holding the paper in contact with the platen, a lower paper-guide on which the paper rests as it approaches the platen, oblique guides provided with guide-fingers, and a supporting-bar on which said oblique guides are adapted to slide, of two guide-plates for directing the paper away from the platen, said guide-plates being attached at their outer ends to and moving with the said oblique guides.

In testimony that I claim the foregoing as my invention I affix my signature, in presence of two witnesses, this 9th day of September, A. D. 1901.

THOMAS OLIVER.

Witnesses:

EARL B. SMITH,  
EDWIN L. POWELL.