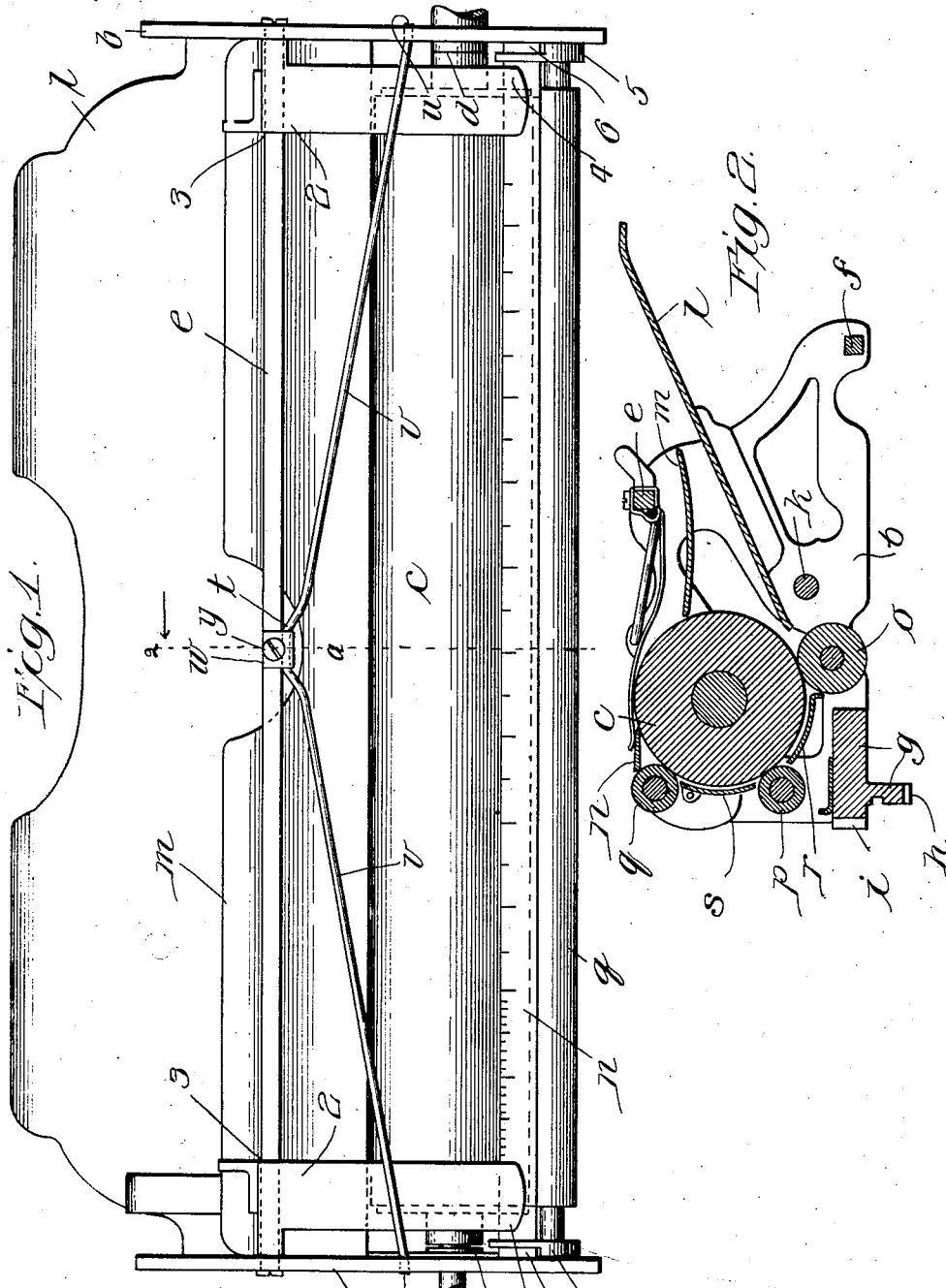


H. I. CROMER & C. C. HARTING.  
 PAPER GUIDING DEVICE FOR TYPE WRITING MACHINES.  
 APPLICATION FILED MAR. 11, 1914.

1,159,749.

Patented Nov. 9, 1915.



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# UNITED STATES PATENT OFFICE.

HARRY IRWIN CROMER, OF OAK PARK, AND CLAYTON C. HARTING, OF WOODSTOCK, ILLINOIS, ASSIGNORS TO THE OLIVER TYPEWRITER COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

## PAPER-GUIDING DEVICE FOR TYPE-WRITING MACHINES.

1,159,749.

Specification of Letters Patent.

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*To all whom it may concern:*

Be it known that we, HARRY IRWIN CROMER and CLAYTON C. HARTING, citizens of the United States, and residents, respectively, of Oak Park, in the county of Cook and State of Illinois, and of Woodstock, in the county of McHenry and State of Illinois, have invented certain new and useful Improvements in Paper-Guiding Devices for Type-Writing Machines; and we 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 that class of paper-guiding mechanism for typewriting machines in which paper-guiding fingers or arms upon the carriage frame are employed for guiding the paper to be operated upon.

The principal object of the invention is to provide a simple, economical and efficient paper-guiding mechanism for typewriting machines.

Other and further objects of the invention will appear from an examination of the specification and from an inspection of the accompanying drawings which are made a part hereof.

The invention consists of certain features of construction, combinations, and arrangements of parts, all of which will be fully set forth and described herein and pointed out in the claims.

In the accompanying drawings, Figure 1 is a plan view of a paper carriage of a typewriting machine, provided with paper-guiding mechanism constructed in accordance with our invention and improvements; and Fig. 2, a vertical sectional view, taken on line 2 of Fig. 1 looking in the direction of the arrow.

In constructing a paper carriage for a typewriting machine provided with paper-guiding mechanism made in accordance with our invention and improvements, a carriage frame *a* is provided having end frame members *b* in which a supporting platen *c* is rotatively mounted in suitable bearings *d*. The end frame members *b* are connected by means of rods or transverse frame members *e*, *f*, and by means of a toothed-rack bar *g*,

which extends from one to the other of said frame members and is provided with teeth *h*, *i* adapted to be engaged by the escapement mechanism or escapement and tabulating mechanism of the typewriting machine.

Paper-guiding plates or shields *l*, *m* are mounted in the carriage frame back of the platen *c* and provided with a space therebetween for admitting paper to be fed to the platen. A scale bar or plate *n* is mounted adjacent to the platen and near the printing line, in position to admit paper to be operated upon between the scale bar and the platen, and the paper yieldingly engaged by the scale plate or bar is fed past the latter in the direction of the printing line or into printing position.

The usual paper-guiding mechanism or apron and rollers for engaging and guiding the portion of the paper which partly encircles the platen and is located between the main paper-guiding plate or shield *l* and the space bar or scale plate *n*, or in position to be fed around with the rotative platen in the direction of the printing line, may be of any desired or ordinary and well known form, and may comprise the ordinary well known parts of a paper-feeding mechanism of any desired form of typewriting machine.

In the accompanying drawings is shown a paper carriage of an Oliver typewriting machine, or such parts of the carriage as are deemed necessary in order to enable the invention to be understood, made and used.

A paper carriage, of the form shown in the drawings, comprises paper-guiding and supporting rolls *o*, *p* and *q*, each arranged in parallel relation to the platen and journaled in suitable bearings in the carriage frame or in the paper-guiding and supporting apron mechanism for the paper carriage. These paper-guiding or feeding rolls are located adjacent to the periphery of the platen and intermediate the main back paper-guiding plate or shield *l* and the scale bar or plate. A paper-guiding plate *r* located intermediate the rolls *o* and *p* and a curved paper-guiding plate *s* located between the rolls *p* and *q* serve to guide the paper as it passes between the rolls *o*, *p* and *q* or paper-guiding apron and the platen. The usual means for releasing the paper is

provided, comprising a rocking shaft or bar *k* and means for operating and operatively connecting the same with the apron or supporting mechanism for the rolls *o*, *p* and *q*, so as to enable the pressure upon the paper to be released as desired by swinging said paper-feeding rolls away from the platen, or permitting them to be yieldingly pressed toward the platen and into operative engagement with the paper by means of spring mechanism—not shown.

It is very desirable that paper-guiding mechanism of an improved character be provided for guiding and retaining in position the portion of the paper which is at the printing line, and that portion of the paper which after passing the printing line is to be guided and supported in position to be visible. The construction of the paper-guiding mechanism should be such as to cover or obscure as little as possible of the surface of the paper—which is of varying widths—so that the impression of the characters will be uniform and may be read with facility and without the necessity of moving the paper or any of the parts of the carriage, or paper-guiding mechanism, no matter how narrow or how wide the paper operated upon may be. In order to provide means whereby this and other objects of the invention may be accomplished in an efficient manner, a narrow guide-rod, bar or wire *t* is mounted, by preference, in fixed relation to the carriage frame with its opposite ends *u* secured to the end frame members *b* of the carriage and located adjacent to the peripheral portion of the platen. This rod forms oblique paper-guiding arms *v* which extend from the opposite ends of the platen and from the end frame members *b* of the carriage close to the periphery of the platen and obliquely toward the center of the carriage frame and paper, in the direction of the movement of the paper. The arms are thus oblique with respect to the paper and the direction of movement of the paper to be engaged and guided thereby, and are so disposed that the paper is engaged progressively first at or near its outer marginal portions and progressively toward the longitudinal center of the sheet or sheets. These oblique arms are adapted to extend across and in oblique guiding engagement with sheets of varying widths without adjustment, and are at all times in position to engage and guide sheets of any desired width which the carriage and platen will accommodate and retain them in position to render the printing visible. The converging parts of the oblique guiding arms *v*, or of the rod *t* forming said guiding arms, are, by preference, secured to the connecting rod *e* of the carriage frame, already described, by means of a clip *w* and screw *y*, or other suitable securing means. (See Fig. 1.) The rod *e* is, by preference, square

or angular in cross-section and the clip is provided with an opening therethrough of corresponding shape adapted to enable the clip to be fitted upon the rod in position to encircle and connect the rods *t* and *e*. Flexible curved paper-guiding fingers or metallic strips 2 are adjustably mounted upon the carriage in position to extend on the outside of the scale bar or plate *n* and between the oblique guide arms *v* and the platen and in the direction of movement of the paper, preferably beyond the inner or converging extremities of the oblique guide arms *v* and into position to be adjustably supported by the rod or bar *e*. These adjustable paper-guiding fingers 2, when constructed as shown in the drawings, are in the form of curved metallic strips and are each slidably mounted, at or near one end, upon the square or angular rod *e*, so as to extend between the oblique arm portions *v* and the platen—their forward or opposite ends 4 being, by preference, in sliding engagement with the outer surface of the scale bar or plate *n*, which, when arranged as shown, extends between the ends 4 of the adjustable fingers 2 and the platen. The scale bar or plate *n* is flexibly supported by means of supporting members 5 which have suitable notches or apertures into which the opposite ends 6 of the scale bar extend, so as to provide a pivotal or flexible support for the scale bar or plate adapted to enable the plate and the flexible guiding strips or fingers 2 to yieldingly engage the paper interposed between said guiding members and the platen. The guiding fingers and scale bar or plate are thus adapted to yield so as to admit and properly guide sheets of paper, which may vary in number.

The adjustable paper-guiding fingers 2, when arranged as above described, are adapted to be readily moved longitudinally of the platen and of the rod *e*, upon which they are slidably supported, and between the guiding arms *v* and the platen, to any desired adjusted position, as required by reason of the various widths of paper to be operated upon, and are adapted to form marginal guides for paper which may vary in width from that of an ordinary postage stamp or even less to sheets of the maximum width adapted to be admitted through the paper carriage frame or properly supported by the platen.

The guiding arms *v* being in fixed relation to the carriage frame, and the guiding fingers 2 being adjustable with respect to the oblique guiding arms, as described and shown, it will be readily apparent that only the fingers 2 are required to be adjusted when relatively narrow strips or sheets of paper are to be printed or operated upon, and that the adjustment of the oblique arms is dispensed with and is unnecessary. The

surfaces of such relatively narrow strips or sheets are thus left uncovered and unobscured by any portion of the oblique arms not already in position and not required for the proper guiding of such relatively narrow strips or sheets. The entire portions of the oblique arms located outside of the adjustable guiding fingers being not required for guiding strips or sheets so narrow as to require the inward adjustment of the adjustable fingers to positions between the extremities of the oblique guiding arms, those outer portions of the oblique arms required only for relatively wide sheets are allowed to remain outside of the adjustable fingers where they will not cover or obscure the printed matter or relatively narrow printed sheets.

We claim:

1. In a paper-guiding mechanism for typewriting machines, the combination of a carriage frame, a platen rotatively supported by the carriage frame, paper-guiding arms secured to the carriage frame and extending inward and in the direction of the movement of the paper at an oblique angle with respect to the axis of the platen, and paper-guiding fingers extending between the said oblique arms and the platen and adjustable relatively to said arm and platen lengthwise thereof.

2. In a paper-guiding mechanism for typewriting machines, the combination of a carriage frame, a platen rotatively supported by the carriage frame, converging paper-guiding arms secured to the carriage frame and extending in the direction of movement of the adjacent peripheral surface of the platen at an oblique angle to the axis of the platen, and paper-guiding fingers mounted upon the carriage frame and extending across and in movable relation to said oblique arms and adapted to be adjusted to different positions intermediate the outer and inner ends of the oblique arms.

3. In a paper-guiding mechanism for typewriting machines, the combination of a carriage frame, a platen rotatively supported by the carriage frame, converging paper-guiding arms secured to the carriage frame and extending in the direction of movement of the adjacent peripheral surface of the platen at an oblique angle to the axis of the platen, paper-guiding fingers extending across and in movable relation to said oblique arms and adapted to be adjusted to different positions intermediate the outer and inner ends of the oblique arms, and means for supporting the movable guiding fingers in different adjusted positions intermediate the inner and outer ends of said oblique guiding arms.

4. In a paper-guiding mechanism for typewriting machines, the combination of a carriage frame, a platen rotatively mounted

in the carriage frame, paper-guiding arms secured to the carriage frame and having their outer ends adjacent to the opposite ends of the rotative platen, said guiding arms extending inward adjacent to the periphery of the platen and in the direction of the movement of the paper at an oblique angle with respect to the axis of the platen, a bar secured at its opposite ends to the end frame members of the carriage, and paper-guiding fingers slidably mounted upon said bar extending across and in movable relation to the oblique guiding arms, and each extending adjacent to the platen and between the outer and inner ends of an adjacent oblique guiding arm.

5. In a paper-guiding mechanism for typewriting machines, the combination of a carriage frame, a platen rotatively mounted adjacent to the parallel portion of the platen, paper-guiding arms fixed to the carriage frame and having their outer ends adjacent to the opposite ends of the rotative platen, said guiding arms extending inward obliquely with respect to the platen and in the direction of the movement of the paper to be engaged thereby, a bar secured at its opposite ends to the end frame members of the carriage, and paper-guiding fingers, each extending across an adjacent fixed oblique paper-guiding arm and having one end slidably mounted upon said bar, the opposite end of said paper-guiding fingers being in slidable engagement with the scale plate.

6. In a paper-guiding mechanism for typewriting machines, the combination of a carriage frame, a platen rotatively mounted in the carriage frame, paper-guiding arms having their outer ends fixed to the carriage frame adjacent to the opposite ends of the rotative platen, said guiding arms extending inward obliquely with respect to the platen and with respect to the direction of movement of the paper to be engaged thereby, a bar secured at its opposite ends to the end frame members of the carriage and in parallel relation to the platen, and paper-guiding fingers adjustably mounted upon said bar and each extending across and in movable relation to an oblique fixed paper-guiding arm and adjacent to the periphery of the platen.

7. In a visible typewriter, the combination of a platen, guiding arms inclined to the axis of the platen and extending rearwardly from the printing line thereof in the direction of movement of the paper, and a pair of fingers for guiding the margins of the paper and extending between said arms and the platen and adjustable relatively to said arms and platen lengthwise thereof, said fingers being arranged closely adjacent said arms

and cooperating therewith to guide the sheets of different width as they leave the printing line.

8. In a visible typewriter, the combination  
 5 with a platen frame and platen, of a yielding mounted scale bar engaging the platen in advance of the printing line, guiding arms secured at their outer ends to said platen frame adjacent the printing line of  
 10 the platen and extending inwardly and rearwardly therefrom and obliquely with respect to the axis of the platen, a supporting bar mounted on the platen frame in rear of the printing line, a pair of yielding paper  
 15 fingers for guiding the margins of the paper mounted on said bar and extending forwardly therefrom beneath said guiding arms with the forward ends of said fingers resting on said scale bar to yieldingly hold the

same in engagement with the platen, said 20 guiding arms being adjustable on said bar to different positions between the ends of said guiding arms.

In testimony, that we claim the foregoing as our invention and affix our signatures in 25 the presence of two witnesses, this 28th day of February, A. D. 1914, and 6th day of March, A. D. 1914, respectively.

HARRY IRWIN CROMER.

CLAYTON C. HARTING.

Witnesses to the signature of Harry Irwin Cromer:

EUGENE C. WANN,

CHARLES H. POOLE.

Witnesses to the signature of Clayton C. Harting:

A. ERNEST SCHROEDER,

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