

T. L. KNAPP.
 PAPER GUIDE FOR CARRIAGES OF TYPE WRITING MACHINES.
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908,482.

Patented Nov. 10, 1908.

Fig. 1.

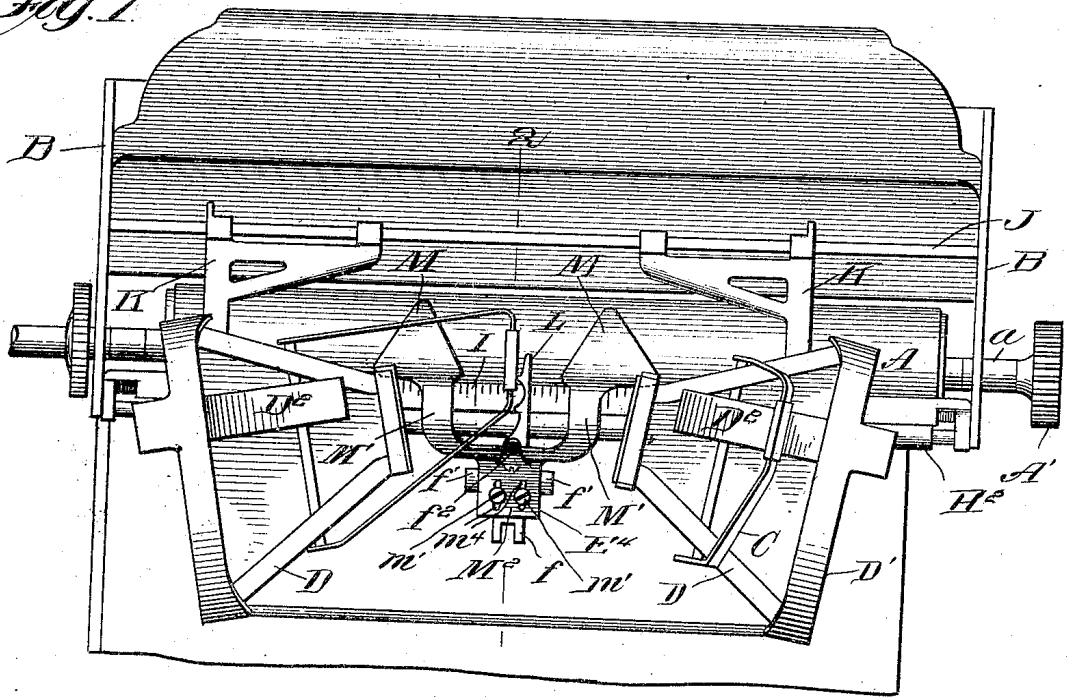


Fig. 2.

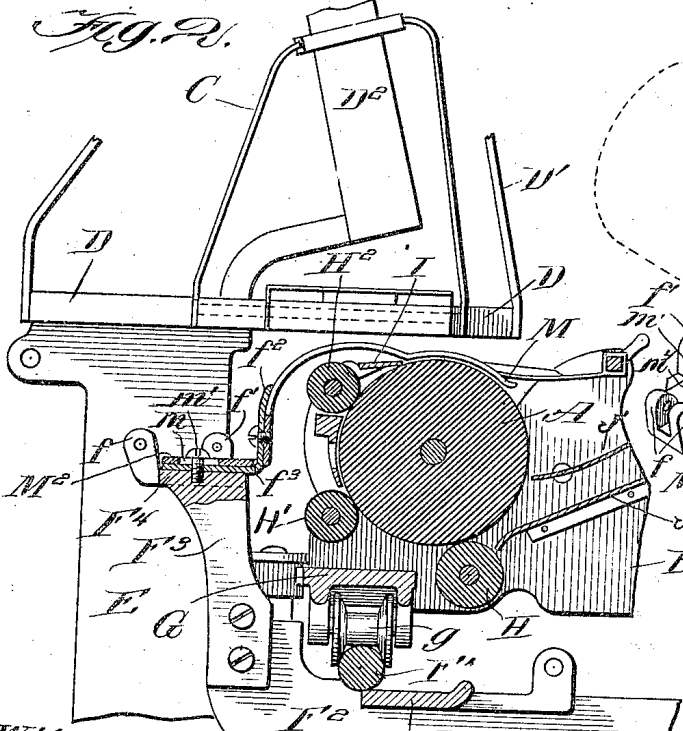
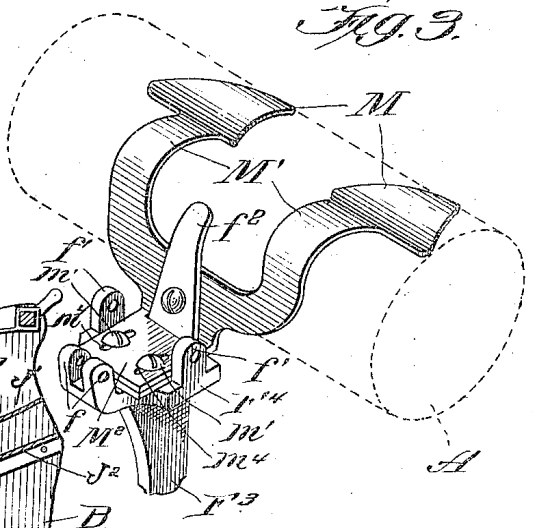


Fig. 3.



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UNITED STATES PATENT OFFICE.

Theron L. Knapp, of Woodstock, Illinois, assignor to the Oliver Typewriter Company, of Chicago, Illinois, a corporation of Illinois.

PAPER-GUIDE FOR CARRIAGES OF TYPE-WRITING MACHINES.

No. 903,482.

Specification of Letters Patent.

Patented Nov. 10, 1908.

Application filed March 16, 1906. Serial No. 306,435.

To all whom it may concern:

Be it known that I, THERON L. KNAPP, a citizen of the United States, of Woodstock, in the county of McHenry and State of Illinois, have invented certain new and useful Improvements in Paper-Guides for Carriages of 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 guiding devices for typewriting machines, and refers more specifically to guiding devices for cards or small sheets of paper adapted to hold the same in close contact with the platen when passing the printing point.

My improved paper guiding device is herein shown as applied to an Oliver typewriter machine of the general construction shown and described in the prior patent to Thomas Oliver, No. 599,863, granted March 1st, 1898, but said improvements may be applied to machines of other kinds to which they may be adapted.

As shown in the accompanying drawings:—Figure 1 is a plan view of the paper carriage of a typewriting machine of the kind or type known as the Oliver machine, allowing the type-bar supporting frame, two type bars, the platen and the frame of the paper carriage which supports the platen. Fig. 2 is a cross-sectional view, taken on line 2—2 of Fig. 1. Fig. 3 is a perspective view of the paper guides and the standard to which the same are attached.

As shown in the said drawings, A designates the rotative platen of the machine, the shaft α of which extends through and has rotative engagement with the end plates B B of the carriage frame. Said platen shaft is provided at its ends with turning knobs, one of which is indicated at A¹.

C C designate the U-shaped type-bars of which there are two sets, one located on each side of the striking point of the type. Only one bar of each set is herein shown, said type-bars are supported on angular bottom frame plates D to which said type-bars are pivoted. D¹ D¹ are loop frames which rise from said frames D D, and D² an oblique support against which the type-bars rest

when thrown backwardly from the platen. Said type-bar frames are supported on the upper ends of standards E which rise from the base of the machine.

F indicates the forward, longitudinal member of the carriage shifting frame, which latter has backward and forward shifting motions on the main frame of the machine (not shown in the drawings) for the purpose of effecting the shifting movement of the platen to bring the same in position for the action thereon of one of the three types on each type-bar. F¹ indicates the front rail of the said shifting frame, which is rigidly attached to the casting constituting said frame, of which the longitudinal member F forms a part. Said front rail F¹ forms a track or support on which the forward part of the carriage rests and travels in its endwise letter-spacing and return movements.

G designates the forward lower, horizontal, longitudinal frame bar of the carriage. Said bar G is provided with rollers g which rest and roll upon the bar F of the shifting frame.

H H¹ H² designate presser rollers located beneath and in front of the platen. Said presser rollers act to press and hold the paper against the platen and thereby effect the advance movement of the paper towards the printing point when the platen is turned. Said rollers are supported on the paper carriage in the same manner as shown in said Oliver patent hereinbefore referred to. A scale strip I, marked with a scale, is mounted at the rear of the upper feed roller H² with its rear edge in contact with the platen, as shown in said prior patent.

J² designates the lower guide plate which is attached to the end plates of the carriage frame in rear of the platen and is inclined downwardly and forwardly to direct the entering margin of the sheet of paper between the platen and the lower, rear presser roller H.

J¹ indicates the upper guide plate and is located in position to receive the advance edge of the paper as it passes rearwardly from the platen to guide said paper away therefrom.

J indicates the upper longitudinal bar of the carriage which serves to rigidly connect the end plates B B and is located above the upper guide plate J¹.

K K indicate the usual guide fingers which are adjustably mounted on the bar J and are

used for guiding and holding downwardly against the platen the advance edges of large sheets.

F^2 designates the forwardly projecting rigid arm on the carriage shifting frame, said arm being shown as cast integral with the forward, longitudinal member F of said shifting frame, and F^3 indicates a standard attached to said arm F^2 , which rises at the front of the platen A , and is usually employed as a support for the ribbon throw or device for guiding and moving laterally the inking ribbon. The operative parts of the said ribbon throw are not herein illustrated as they constitute no portion of the present invention. The drawing, however, shows four apertured bearing lugs $fff^1 f^1$ which rise from the horizontal top plate F^4 on the standard F^3 and to which the moving parts of said ribbon throw are pivoted. The drawing also illustrates a stop arm f^2 which rises from the rear part of said plate F^4 and which serves, when the ribbon throw is present, to limit the movement of the oscillatory parts thereof towards the platen. The drawing also illustrates the letter space indicating arm L which is usually present on the Oliver typewriting machine, and which is attached to the rear face of the standard F^3 and extends horizontally over the platen with its rear or free end in position to indicate the striking point of the type.

The parts of the machine above referred to are similar in construction to the corresponding parts shown in the prior patent to Oliver hereinbefore referred to, and need not be herein more fully described.

Now referring to the features more particularly constituting my invention, the same are constructed as follows:

$M M$ designate two curved guide plates which are located above the platen at either side of the impression or printing point and at such distance therefrom that they will engage cards, tickets or sheets of paper which are too small to be engaged and guided by the usual paper guides $K K$. Said guide plates are supported by means of arms or bars $M^1 M^1$ from the upper end of the standard F^3 which supports the ribbon throw. The guide plates $M M$ are curved to conform to the upper surface of the platen, and extend a short distance circumferentially of the same rearwardly from the rear edge of the scale strip I . Said guide plates $M M$ are so arranged as to be practically in contact with or to press lightly upon the upper surface of the platen, or in other words, are at such distance therefrom as to hold small sheets of paper or cards in contact with the platen. The supporting arms $M^1 M^1$ for such plates have such degree of elasticity or resiliency as to permit a slight yielding of the plates toward and from the platen, to compensate for paper or cards of varying thicknesses while at the same time said plates will hold the sheet of

paper or card in curved form, corresponding with the curvature of the platen, and thereby retain the paper or card in close contact with the platen when the impression is made. The form given to the plates $M M$ as seen in plan view, is not material, but preferably they are generally of triangular shape or are made of considerable width at their margins which are attached to the supporting arms $M^1 M^1$, and tapered rearwardly towards their rear ends.

The guide plates $M M$ arranged as described are designed to hold in place and closely adjacent to the platen, the upper or advance edges of cards or small sheets of paper, after such advance edges shall have been advanced forward of the printing point by the guide rollers $H H^1$ and H^2 , thereby enabling the machine to operate properly with sheets of paper or cards which are too small to engage and be guided by the usual paper guide fingers $K K$. In other words, said guide plates M , by engagement with the end portions of a card, ticket or small sheet of paper, serve to confine or press said end portion thereof against the platen and to maintain the middle part thereof in contact with the platen while passing the striking or impression point.

The arms $M^1 M^1$ attached to the standard F^3 and extending rearwardly therefrom over the platen, as described, afford the spring or resilient support for said guide plates required to enable them to bear tightly and yieldingly on the platen and to thereby press the paper or card against the platen firmly enough to prevent any buckling or wrinkling of the sheet or card.

The arms $M^1 M^1$ which, as before stated, are attached to the standard F^3 , are made in one piece with each other, and are joined to a central horizontal base plate M^2 which extends forwardly over and is secured to the top of the horizontal plate F^4 on the said standard F^3 . Said base plate M^2 is shown as provided with slots m^4 through which pass screws $m^1 m^1$ which are inserted at their lower ends in the plate F^4 , by which the said base plate supporting arms, and the guide plates are adjustably secured to the standard F^3 . In the particular construction shown, the contact arm f^2 for the ribbon throw is formed by means of an upwardly bent projection on a base plate f^3 which is interposed between plate F^4 and the base plate M^2 and secured in place by the same clamp screws $m^1 m^1$.

The guide plates herein described resemble generally the paper guides described and claimed in the prior patent granted to Albert Swindlehurst, April 28th, 1903, No. 726,951 but differ therefrom by reason of the fact that they are designed for use in printing cards and like small sheets and are arranged nearer the printing point and so close together that they may be supported by a single central

support, such as the standard F^s which sustains the ribbon throw of the machine. The paper guiding devices hereinbefore described also differ from those of said Swindlehurst patent from the fact that the guide plates in my device are yieldingly supported or sustained by arms which extend from their point of attachment to the supporting standard rearwardly in a horizontal direction to the guide plates and said arms are of spring or elastic character and so arranged as to permit movement of the guide plates toward and from the platen by the bending or flexing of said arms, thereby rendering unnecessary the use of any springs except those afforded by the supporting arms themselves.

I claim as my invention:—

In a typewriting machine, the combination with a platen, a carriage, a carriage shift-frame and a central standard on the shift-frame which rises at the front of the platen,

of a paper-guide consisting of a single piece of sheet metal shaped to form two laterally separated spring arms, a transversely extending lower part connecting the lower ends of said arms and enlarged parts at the upper ends of said arms constituting guide plates; said paper-guide being attached at the center of its transverse lower part to the said standard and having its said spring arms bent rearwardly over the platen in position to support the said guide-plates above the platen at opposite sides of the printing point.

In testimony, that I claim the foregoing as my invention I affix my signature in presence of two witnesses, this 13th day of March A. D. 1906.

THERON L. KNAPP.

Witnesses:

A. J. MULLEN,
L. L. SCHRODER.