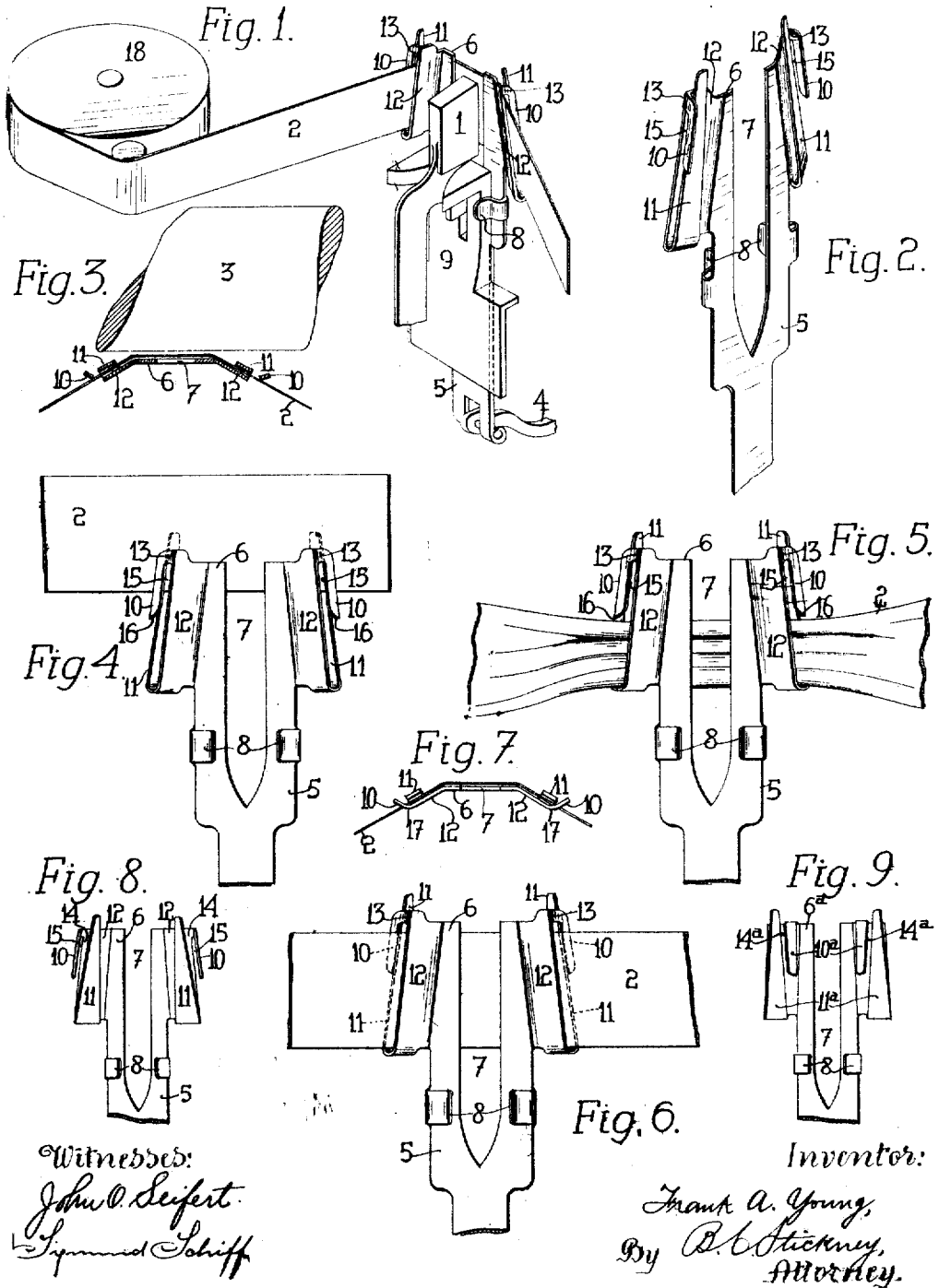


949,721.

Patented Feb. 15, 1910.



# UNITED STATES PATENT OFFICE.

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## TYPE-WRITING MACHINE.

949,721.

Specification of Letters Patent.

Patented Feb. 15, 1910.

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*To all whom it may concern:*

Be it known that I, FRANK A. YOUNG, a citizen of the United States, residing in New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Type-Writing Machines, of which the following is a specification.

This invention relates to the ribbon guides of writing machines, and particularly to vibrating guides which move at every type stroke to cover and then uncover the printing point.

In the well known Underwood typewriting machine, the vibrating ribbon guide has been so constructed, in order to confine the ribbon securely during the vibrations, that it is somewhat difficult to thread the ribbon through the guide and to withdraw the ribbon from the same. To avoid these difficulties it has been proposed to employ tools of different kinds to grasp the ribbon and place it in the vibrator.

The principal object of the present invention is to construct the guide or vibrator in such a manner as to simplify and facilitate the operation of threading or unthreading the ribbon.

A further object is to hold the ribbon more securely in the guide.

The invention may be said to comprise a pair of hooks located on opposite sides of the printing point, respectively, to catch over the top edge of the ribbon, and a pair of upwardly-pointing guiding-horns adjacent to said hooks to facilitate the catching of the ribbon beneath said hooks. Each hook taken with its associated horn may be regarded as forming a closed eye. Upon being threaded through said eyes, the ribbon is securely held.

In the accompanying drawings, Figure 1 is a front perspective view illustrating one embodiment of my invention, with the ribbon threaded in the guide. Fig. 2 is a rear perspective view of the guide removed from the machine. Fig. 3 is a transverse cross-sectional view illustrating the general configuration of the head of the guide and the arrangement of the hooks and horns. Figs. 4, 5 and 6 are detail front views showing by steps the method of threading the ribbon in the guide. Fig. 7 is a top plan view. Fig. 8 is a rear view of the guide. Fig. 9 is a rear view of a slight modification.

In said Underwood typewriting machine, types 1 print through a ribbon 2 against the front side of a platen 3, the ribbon being disposed on edge and threaded through a ribbon vibrator or guide 5, which is caused to vibrate up and down at the type strokes, by a lever 4, operated by the keys for this purpose.

The ribbon vibrator or guide 5 may be formed of sheet metal, and has a head portion 6 with the usual opening 7 through which the types strike. The vibrator is also provided with the usual ears 8 to clasp loosely the sides of a vertical guiding fixture 9. The ribbon 2 passes behind the head portion of the guide and between the same and the platen.

From the top of the head, upon its rear side, extend downwardly two hooks 10 to catch over the top edge of the ribbon, on opposite sides of the opening 7 respectively.

For rendering it convenient to catch or thread the ribbon under these hooks there are provided adjacent thereto, two horns 11 which may constitute projections or lips folded up from the bottom of the head of the ribbon vibrator upon its rear side and adjacent to said hooks 10.

To introduce the ribbon, it is passed down in front of the guiding horns which extend above the head of the ribbon guide to facilitate the introduction of the ribbon edgewise and downwardly between said horns and said head (as shown in Fig. 4). The ribbon is then pulled down by the operator's finger or pushed down by a lead pencil, as at Fig. 5, the ribbon being crumpled down until its upper edge catches under the hooks. Then the operator pulls the ribbon from side to side and draws it upwardly until the ribbon rises under the hooks, whereupon the machine is ready for writing, as at Fig. 6.

It will be seen that each hook 10 taken with its associated guiding horn 11 forms a complete eye, as seen best at Fig. 2, completely inclosing the ribbon, so that all possibility of the ribbon becoming accidentally released from the vibrator is precluded. The metal of the head 6 is bent backwardly at 12, forming the back of the eye upon which back, the ribbon may rest; and from said back, the guiding projection or horn 11 rises. The head 13 of the hook 10 forms the top of the eye and prevents the ribbon from rising out of the guide.

When detaching the ribbon, it is only necessary to press it down until it is free of the hooks 10, as in Fig. 5, whereupon it may readily be drawn upwardly along the horns 11 away from the vibrator.

At Fig. 8, it will be seen that the guide may be regarded as having a diagonal slit 14 for the insertion and withdrawal of the ribbon, the metal on one side of said slit forming the hook, and the metal on the other side thereof forming the guiding horn. It is not essential, however, in all cases, that the eye be formed in this way, or that it have a diagonal slit, or that the horn and hook be formed of sheet metal, or integral with the head of the vibrator.

Preferably, the hooks are formed by cutting slots or recesses 15 in the opposite sides of the blank from which the vibrator head is formed, so that the operator may easily see the condition of the ribbon in respect to the hooks, and is the better enabled to introduce or withdraw the ribbon relative thereto; the slots being flaring or enlarged at their bottoms, as at 16, for convenience in manipulating the ribbon. Where the vibrator stands at a higher level than the ribbon spools 18, the slots 16 may be guided divergently from the top down, to take up the sag or looseness along the lower edge of the ribbon. This diagonal cut is not, however, essential.

The guiding horns 11 are preferably bent up back of the hooks (see Figs. 2 and 5), and the head 6 of the ribbon guide may be bent or shaped as seen best in top plan view at Fig. 7, to make depressions 17 within which said horns may stand, so that the horns may be brought forwardly to clear the platen.

In the modification seen at Fig. 9, the hooks 10<sup>a</sup> are bent down behind the vibrator 5<sup>a</sup> and the horns 11<sup>a</sup> are bent up at the outer sides of said hooks, diagonal slits 14<sup>a</sup> being formed between the inner sides of the horns and the outer sides of the hooks, for the insertion and removal of the ribbon.

Other variations may be resorted to within the scope of the invention.

Having thus described my invention, I claim:

1. In a typewriting machine, the combination with a ribbon, of a vibratory ribbon guide having eyes, each formed by a ribbon-support associated with a ribbon hook, the ribbon support extended past the ribbon hook and above the upper end of the guide to facilitate the insertion and removal of the ribbon relative to the eyes.

2. In a typewriting machine, the combination with a ribbon, of a ribbon guide comprising a head, closed eyes thereon, and means extending above the head of the guide for facilitating the insertion and removal of the ribbon relative to the eyes.

3. In a typewriting machine, the combination with a ribbon, of a ribbon guide comprising eyes, each formed of an upwardly extending ribbon support, and a depending ribbon hook, the support extending past the hook to a point thereabove for directing the ribbon into and out of the eye.

4. In a typewriting machine, the combination with a platen, types and a ribbon, of a vibratory ribbon guide comprising a recessed head having an opening for the types, and ribbon-holding means on the rear face of the head and on opposite sides of the opening, comprising depending hooks and upwardly extending ribbon supports, the free ends of which occupy the recesses in the head to clear the platen.

5. In a typewriting machine, the combination with a ribbon, of a ribbon-guide comprising a ribbon support, and a ribbon hook extending past, and cooperating with, each other to form an eye in which the ribbon is releasably threaded, the ribbon hook being so formed as to leave a slot between itself and the back of the eye, which slot is enlarged at its open end to facilitate the insertion of the ribbon.

6. In a typewriting machine, the combination with a ribbon, of a vibratory ribbon guide comprising a head, hooks bent down behind the head, ribbon supports bent up behind the head and extending past the points of the hooks, the hooks and ribbon supports cooperating with the head to form closed eyes in which the ribbon is threaded.

7. In a typewriting machine, the combination with a ribbon spool, and a ribbon, of a ribbon guide having a head, the opposite sides of which are bent backwardly parallel with and adjacent to the path of the ribbon, and eyes formed on the rear faces of the backwardly bent portions in which the ribbon is threaded.

8. In a typewriting machine, the combination with a ribbon spool and a ribbon, of a ribbon guide having a head, the opposite sides of which are bent backwardly, eyes formed on the rear faces of the backwardly bent portions, in which the ribbon is releasably threaded, and directing means carried by the eyes for facilitating the threading of the ribbon therein.

9. In a typewriting machine, the combination with a ribbon, of a vibratory ribbon guide slotted to form a depending hook, and having a guiding horn extending upward past the hook and cooperating therewith to form an eye in which the ribbon is releasably threaded.

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Witnesses:

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