

J. E. SIMPSON.
 TYPEWRITING MACHINE.
 APPLICATION FILED NOV. 17, 1919.

1,365,737.

Patented Jan. 18, 1921.

2 SHEETS—SHEET 1.

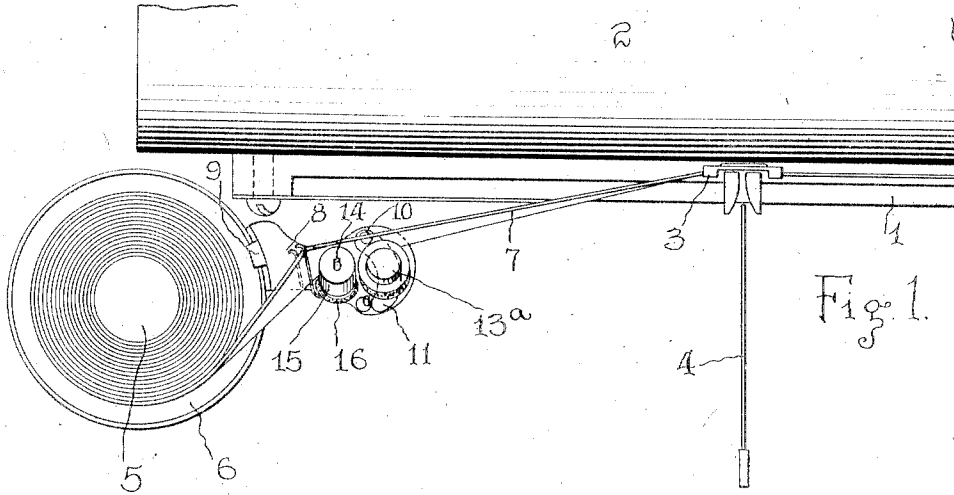
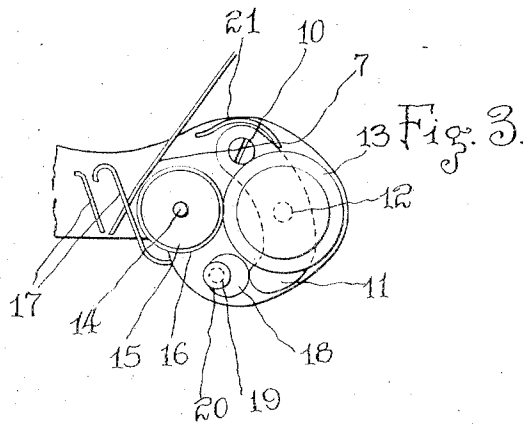
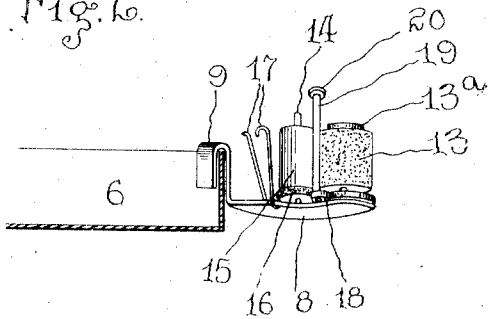


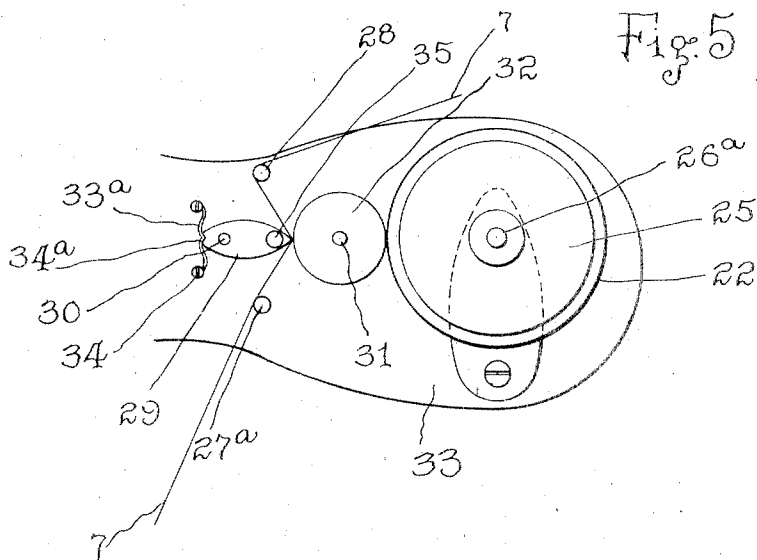
Fig. 2.



James E. Simpson, Inventor
 By *His Attorney* *Fuller & Keen*

1,365,737.

2 SHEETS—SHEET 2.



James E. Simpson, ^{Inventor}
By his Attorney Fuller & Barker

UNITED STATES PATENT OFFICE.

JAMES E. SIMPSON, OF BROOKLYN, NEW YORK.

TYPEWRITING-MACHINE.

1,365,737.

Specification of Letters Patent.

Patented Jan. 18, 1921

Application filed November 17, 1919. Serial No. 338,499.

To all whom it may concern:

Be it known that I, JAMES E. SIMPSON, a citizen of the United States, and resident of borough of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Typewriting-Machines, of which the following is a specification.

This invention relates to typewriting machines, particularly with respect to means for re-inking or revivifying the ribbons used therewith for enabling the type to create printed impression upon a work sheet in the operation of the machine; and any present improvements are directed to a simple form of attachment, to be applied to a typewriting machine, whereby this re-inking or revivifying effect may be produced.

The principle involved in this device is that of the tension to which the ribbon is subjected during the feed movements of the ribbon induced by the actuation of the finger keys and the consequent operation of the ribbon feed mechanism. For this purpose the new device which is the subject of this application is provided with means which normally hold the ribbon out of contact with its inking, re-inking, or revivifying means, although allowing the ribbon to lie closely adjacent to said means, which latter are in an angled line or path to be traveled by the ribbon intermediate a ribbon spool and the ribbon guide that is located at the printing point.

The inking, re-inking or revivifying means comprises a roller, which may be in the form of a distributing roller that takes its ink or moisture supply from another roller that is adapted to rotate in contact therewith, and for convenience I may hereinafter designate said inking, re-inking or revivifying element either as a moistener or a distributor.

The device may be so mounted on the machine, as by being detachably engaged with a ribbon spool casing in the instance of its use with an Underwood machine, that the moistener is axially inclined, from the vertical, with its upper portion rearwardly directed to a slight extent, and the ribbon, which passes about said moistener, is normally held out of surface contact therewith by a frictional base element upon the moistener, said element being concentric with

said moistener, but of larger diameter, so that the lower margin of the ribbon, which lies in contact with said frictional element, causes said moistener to rotate with the ribbon movement, while the upward movement of the ribbon guide, produced with each down stroke of the key levers, has the effect of drawing the upper, and intermediate or body portions, of the ribbon into contact with the moistener. Therefore the moistening effect occurs only intermittently with the operation of the machine.

My invention also includes means whereby when a distributing roller for the ribbon receives its supply from a saturated reservoir roller, the latter is provided with compression means, through whose agency the roller's period of usefulness with a single saturation may be prolonged.

In a modified form of my invention the moistening element or distributor may contact with ribbon angling means that hold the ribbon continuously in moisture or ink receiving relation with the said distributor, but these means are of such character that the ribbon is by them angled in the form of a V, whose vertex only presses an edge portion of the ribbon lightly against the distributor, so that during dwell periods while the machine is inactive, no sufficient area of the ribbon receives an ink or moisture accumulation sufficient in degree to affect the uniform character of the subsequently produced type impressions upon the work sheet.

Means for disengaging the moistening or inking means from the operative position are provided with respect to both these forms of my invention.

Other features and advantages of my invention will hereinafter appear.

In the drawings:—

Figure 1 is a plan view of a portion of a typewriting machine having my improved moistener removably attached thereto.

Fig. 2 is a detail, side elevation thereof.

Fig. 3 is an enlarged, detail plan view of the device.

Fig. 4 is an enlarged, perspective view of the device, including an auxiliary moistening means of continuous character, and

Fig. 5 is a plan view of Fig. 4.

In describing my invention with reference to the accompanying drawing, let 1 indicate

a portion of the frame of an Underwood typewriting machine, 2 the platen, 3 the ribbon guide, 4, one of the type bars, 5 a ribbon spool in casing 6 therefor at one side of the machine, and 7 the ribbon which feeds from one spool to another in the usual manner.

My improved inking and moistening device, as shown in Figs. 1, 2 and 3, consists of certain constituent elements, mounted on base plate 8, that is provided with an extending hook 9, said hook being adapted to removably fit over and engage the vertical wall of spool casing 6, to thereby support the device in its operative position upon the machine.

Pivoted at 10 upon the base 8 is a mount 11, which carries a vertical spindle 12, and upon said spindle is revolubly mounted a roller 13 of felt or other material capable of acting as an absorbent reservoir for moisture or ink, a knurled nut 13^a, serving to hold said roller against vertical displacement.

A spindle 14 carried by the base 8 in parallelism with spindle 12, has revolubly mounted thereon a roller 15, which may be of metal or other suitable material, and which is designed to rotate in contact with roller 13, to receive moisture or ink from the latter, and itself to function as a distributor to ribbon 7 of its received moisture or ink. At the base of roller 15 there is attached a friction disk 16, of felt or soft rubber, whose diameter is concentric with and greater than that of roller 15, so that the ribbon, in whose angled path from the spool 5 to guide 3 the roller 15 is positioned, is held by disk 16 normally just out of contact with the peripheral surface of said roller 15.

The hook 9 by which the device is attached to the spool casing has its fold or bend arranged at such an angle relatively to the spindles 12, 14, that when said hook is seated in its engaged position upon the casing wall said spindles, and consequently the rollers mounted thereon, are rearwardly inclined, so that the ribbon, which is given a similar inclination, as it leaves the casing, by inclined guides 17, also being angled, in its path to the guide 3 by said guides 17, is thereby caused to approach the roller 15 in parallelism therewith, although being normally in contact only with the disk 16 while the machine is quiescent. But, with the operation of the machine, as the ribbon tautens up under its feed tension, it is then, in intermittency with the feed actions, drawn into contact with the peripheral surface of roller 15, which latter, rotating under the friction contact it has, both with roller 15 and disk 16, imparts either moisture or ink thereto, according to the character of the saturation held by the supply roller 13.

A cam 18, carried by a stem 19, that has a handle 20 and is pivoted in base 8, bears against mount 11 and is operable to swing said mount aside, against the return tension of a spring 21, so that, until said cam is released the roller 13 may be held out of contact with the distributing roller 15. The roller separating means is intended to be employed at such times as when the machine is not in service.

By the use of the distributing roller, a feature not found in my earlier patents, the ink or moisture is more evenly applied to the ribbon, and I find there is less liability to impart a too copious supply thereof to the ribbon.

Also in Figs. 4 and 5, which include all the elements previously recited I have included some additional features.

Thus, the felt or other absorbent roller 22 is provided with a central tube 23, having, at its lower end a fixed washer 24, and over its upper end a loose washer 25. A compression nut 26 is threaded upon the upper end of tube 23 and when turned inwardly will cause the roller to be squeezed vertically to compress it and thus force outwardly its latent moisture or ink when the peripheral supply has diminished, to thus restore the serviceable condition of the roller before replenishing the supply or renewing the roller. After compression the nut may be returned to thus permit the roller to resume its original or free form. The spindle 26, which corresponds in other respects with spindle 12, is shown as provided with a thumb screw 27, to keep the parts in position, and is passed through the tube 23.

In these views, also, a modified ribbon angling means is shown, wherein guide posts 27^a, 28, direct the ribbon around the sharp vertical edge of a hatchet-head like member 29 that is mounted, toward its rear portion, upon a vertical spindle 30, said spindle being supported, in common with spindle 26, and the spindle 31 that carries the intermediary, distributing roller 32, upon the base plate 33. The member 29 is held, with its edge directed toward roller 32 by a rearwardly positioned spring 33^a, that is here shown as engaged, at its opposite ends, by posts 34 which are carried by base 33, said spring lying transversely across the rear portion of said member and having a central projection 34^a that enters a detent in said rear portion, to exert localizing pressure adapted to hold member 29 in its operative position. A knob 35 extending upwardly from the forward portion of member 29, is provided to serve as a handle whereby said member may be swung aside when not required to be used. And then, if desired, the other angling means, of Figs. 1, 2 and 3, here indicated as the ribbon angling guides 17, may be brought into operation, by in-

serting the ribbon between said guides instead of passing it over the guide posts 27^a, 28.

But, when the member 29 is used it will be seen that its edge, in conjunction with guide posts 27^a, 28, angles the ribbon in V form, with the vertex thereof in contacting opposition to the distributing roller, and this form of ribbon inking or moistening means I have found to answer admirably for certain classes of work. By this means the ink or moisture is supplied only at the point of ribbon contact with roller 32, and also by this means the uneven distribution of ink is absolutely prevented.

It should be explained that where I have referred to the ribbon feed tension as exercising the tautening influence to intermittently bring the ribbon into contact with roller 15 I have in mind, in the example of the drawings, the upward movement of the ribbon guide or fork 3 that occurs in the down stroke of a finger key, before the receiving spool makes its partial turn to draw the ribbon thereon; the said upward movement of the ribbon guide or fork having the desired effect of applying tension to that part of the ribbon lying between it and the spools, which tension causes the ribbon to be drawn inwardly into contact with the peripheral surface of roller 15, to receive ink or moisture therefrom.

Also, while I have described and shown the hook 9 as constituting means for attaching the device to a typewriting machine, my invention is not limited to only that means of removable attachment, since other convenient attaching means may be employed suited to the make of machine with which the device is to be used.

Variations may be resorted to within the spirit and scope of my invention and parts thereof used without others.

I claim:—

1. In a typewriting machine having a ribbon movable across the printing point, the combination of a revoluble revivifying element, and means for guiding the ribbon through an angled path in proximity with said element, said means including an edged member for holding the ribbon in line contact with said element.

2. In a typewriting machine having a ribbon movable across the printing point, the combination of a revoluble revivifying element, means for guiding the ribbon through an angled path in proximity with said element, said means including an edged member for holding the ribbon in line contact with said element, and means for rendering said edged member inoperative.

3. In a typewriting machine having a ribbon movable across the printing point, the combination of a revivifying supply ele-

ment, a revoluble distributor element in contact therewith, and means for guiding the ribbon through an angled path in proximity with said distributor element, said means including an edged member for holding the ribbon in line contact with said distributor element.

4. In a typewriting machine having a ribbon movable across the printing point, the combination of a revivifying supply element, a revoluble distributor element in contact therewith, means for guiding the ribbon through an angled path in proximity with said distributor element, said means including an edged member for holding the ribbon in line contact with said distributor element, and means for rendering said edged member inoperative.

5. In a typewriting machine having a ribbon movable across the printing point, the combination of a revoluble revivifying element, means for guiding the ribbon through an angled path in proximity with said element, said means including an edged member for holding the ribbon in line contact with said element, and tensional means for operatively localizing said edged member.

6. In a typewriting machine having a ribbon movable across the printing point, the combination of a revoluble revivifying element, means for guiding the ribbon through an angled path in proximity with said element, said means including an edged member for holding the ribbon in line contact with said element, tensional means for operatively localizing said edged member, and means for rendering said edged member inoperative.

7. The combination, with a typewriting machine having a ribbon movable across the printing point, of a revoluble revivifying roller, a vertically edged member having its edge in opposed relation to said roller, and means for guiding the ribbon in a V angled path whose vertex is formed by said member's edge, whereby the ribbon has only edge contact with said roller.

8. The combination, with a typewriting machine having a ribbon movable across the printing point, of a revoluble revivifying roller, a vertically edged member having its edge in opposed relation to said roller, and means for guiding the ribbon in a V angled path whose vertex is formed by said member's edge, whereby the ribbon has only edge contact with said roller, tensional means to hold said member in its operative position, and means for shifting said member to an inoperative position.

Signed at borough of Brooklyn, in the county of Kings and State of New York this 12th day of November A. D. 1919.

JAMES E. SIMPSON.