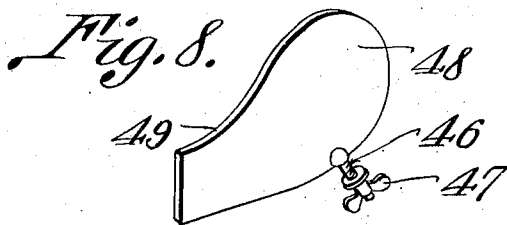
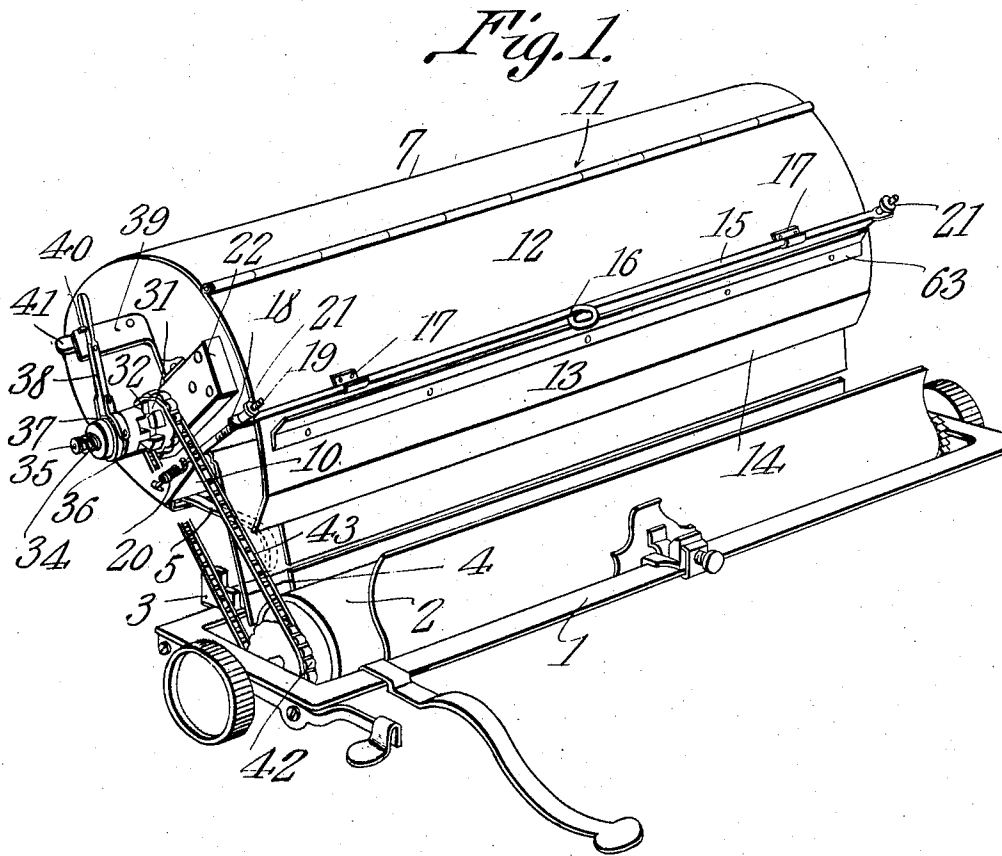


W. R. DIXON.
 PAPER FEED ATTACHMENT FOR TYPE WRITERS.
 APPLICATION FILED JAN. 29, 1910.

974,556.

Patented Nov. 1, 1910.

2 SHEETS—SHEET 1.



Witnesses

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Inventor
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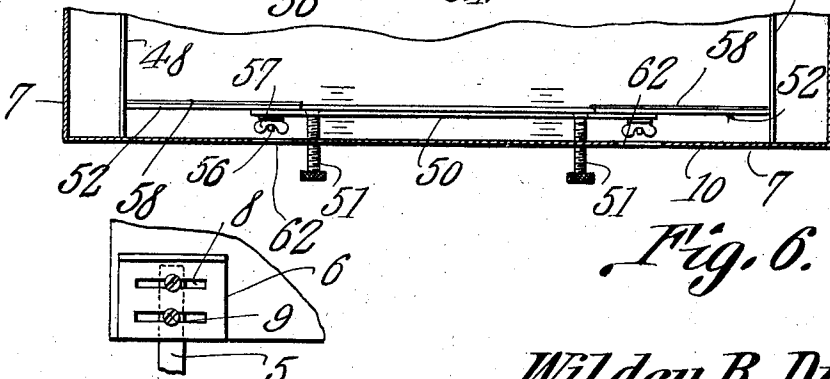
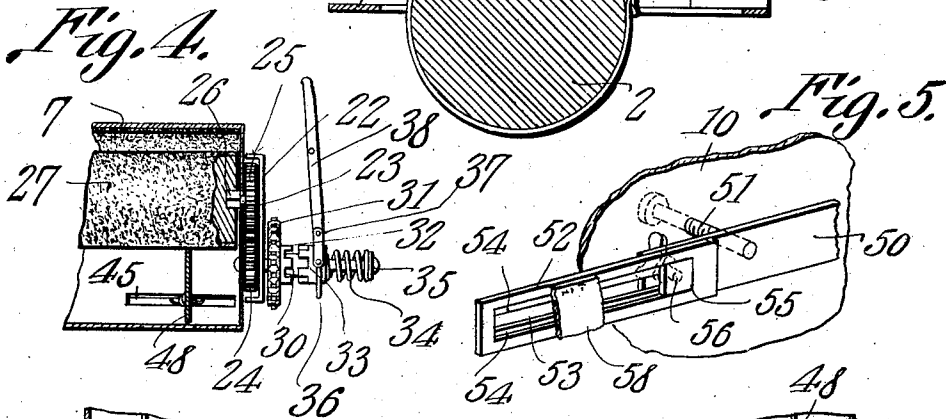
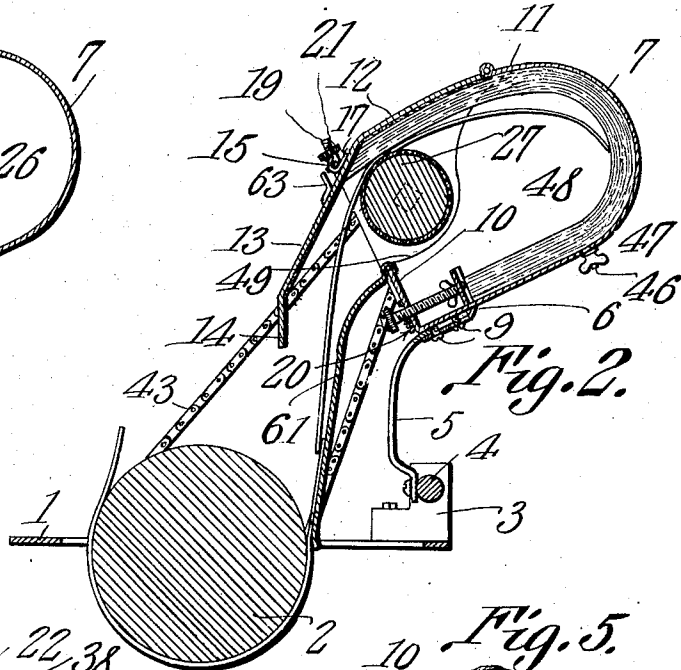
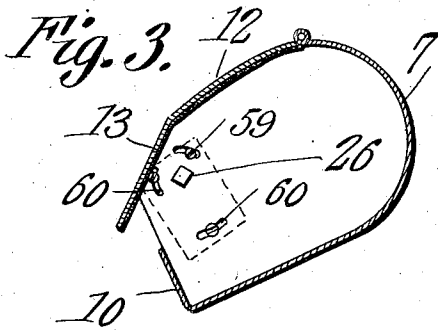
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UNITED STATES PATENT OFFICE.

WILDEY R. DIXON, OF ROANOKE, VIRGINIA, ASSIGNOR OF ONE-HALF TO JOHN ROSE,
OF ROANOKE, VIRGINIA.

PAPER-FEED ATTACHMENT FOR TYPE-WRITERS.

974,556.

Specification of Letters Patent.

Patented Nov. 1, 1910.

Application filed January 29, 1910. Serial No. 540,855.

To all whom it may concern:

Be it known that I, WILDEY R. DIXON, a citizen of the United States, residing at Roanoke, in the county of Roanoke and State of Virginia, have invented a new and useful Paper-Feed Attachment for Type-Writers, of which the following is a specification.

This invention has reference to improvements in paper feed attachments for typewriters and it is designed to provide a reservoir for sheets of paper to be fed successively and automatically to the platen in position to be operated upon by the type without the necessity of the operator placing the sheets as needed.

The present invention is an improvement upon the paper feed attachment for typewriters for which I filed an application on January 19, 1909, under Serial No. 473,173. In the said application there is shown a reservoir for sheets of paper from which the sheets may be fed one at a time in succession to the proper side of the platen, the feeding being performed automatically by and in accordance with the movement of the platen in the act of typewriting and the structure is such that when a sheet is removed from the typewriting machine the next sheet has already been automatically moved into position in relation to the platen to continue the typewriting.

The present invention relates more particularly to means for adapting the reservoir to sheets of different width, to means for particularly of different width, to means for maintaining the proper relation of the actuating devices for the paper feed roll, and to other structures, all of which will be best understood from a consideration of the following detail description taken in connection with the accompanying drawings forming a part of this specification, in which drawings,

Figure 1 is a perspective view of the attachment applied to the carriage of a commercial form of typewriting machine. Fig. 2 is a vertical section through the structure shown in Fig. 1. Fig. 3 is a cross section of the reservoir with parts omitted. Fig. 4 is a longitudinal section of one end of the reservoir with parts shown in elevation. Fig. 5 is a detail perspective view of a portion of a follower used in the reservoir. Fig. 6 is a horizontal section of a portion of

the reservoir showing the follower in top view. Fig. 7 is a detail view of a portion of one end of the reservoir as viewed from below. Fig. 8 is a perspective view of a side gage for the paper, the said gage being used in connection with the reservoir. Fig. 9 is a perspective view of a support for that end of the roller remote from the end engaging the actuating means.

Referring to the drawings there is shown a typewriter carriage 1 which may be taken as typical of any typewriter carriage, and the platen of the carriage is indicated at 2. Fast to a portion of the rear of the carriage near each end thereof is a block 3 and the two blocks serve as supports for a rod 4 longitudinal of the carriage.

Fast to the rod 4 near each end thereof is a bar 5 and the upper end of each bar 5, there being two such bars, is appropriately bent to enter a socket 6 at the respective end of a reservoir 7. The reservoir is shown as approximately U-shaped in cross section and is slightly longer than the width of the widest paper to be used. The sockets 6 are provided with elongated slots 8 through which screws 9 are passed and which are threaded into the ends of the corresponding bar 5 where the latter enters the socket so that the reservoir may be properly adjusted lengthwise of the typewriter carriage. The open end of the reservoir is toward the platen and fast to the lower edge of the open end of the reservoir is a low partition 10 formed either by bending up a portion of the reservoir structure or by securing the partition to the body of the reservoir by solder or otherwise. The upper face 11 of the reservoir is much shorter than the lower face and to the edge of the upper face there is hinged a continuation 12 in the nature of a cover and this continuation or cover is provided with a projecting lip 13 inclined downward at an angle to the main portion of the cover for a purpose which will presently appear while the free edge 14 of the lip 13 is bent at an angle to the lip as best shown in Fig. 2.

Extending across the cover 12 is a rod 15 having at about its middle point a loop 16 constituting a manipulating handle and this rod is normally held in clips 17 fast on the cover 12. The ends 18 of the rod 15 extend beyond the ends of the cover and are there flattened and perforated each for the passage

of a corresponding screw rod 19 extending along the corresponding end of the cover and connected at the end remote from the threaded end to a spring 20 which in turn is made fast to the end of the reservoir. The threaded end of each rod 20 receives a thumb nut 21 by means of which the spring 20 may be put under greater or less tension as desired. The tendency of the springs 20 is to hold the cover in engagement with the ends of the reservoir, the cover over-riding said ends.

At one end of the reservoir there is a casing 22 housing two gear wheels 23, 24 in mesh one with the other. The gear wheel 23 is formed with or has secured to it a stub shaft 25 extending through the corresponding end wall of the reservoir 7 and this stub shaft within the reservoir terminates in a squared section 26 adapted to enter a square socket in the roller 27 within the reservoir beneath the cover 12 at a point adjacent to the junction with the cover of the lip 13. The other end of this roller is supported in a bracket 28 shown separately in Fig. 9. This bracket is designed to be riveted or other secured to the other end of the reservoir on the inner face thereof and is provided with a socket 29 adapted to receive an axial stud on the corresponding end of the roller. When the cover 12 is lifted then the roller 27 may be readily removed by disconnecting it from the bracket 28 and then pulling it away from the squared portion 26 of the stub-shaft 25.

The gear wheel 24 is mounted on a shaft 30 and this shaft exterior to the casing 22 carries a sprocket wheel 31 having a clutch member 32 on the side thereof remote from the casing 22. This sprocket wheel 31 is free to rotate on the shaft 30 but may be coupled thereto by another clutch member 33 rotatable with the shaft but capable of sliding thereon. The clutch member 33 is urged constantly toward the clutch member 32 by a spring 34 surrounding the shaft 30 and confined between said clutch member 33 and a head 35 formed on the outer end of the shaft. The clutch member 33 is provided with a collar 36 and this collar is engaged by a fork 37 on one end of a lever 38 pivoted to a bracket 39 fast on and projecting from the casing 22. The bracket carries a latch member 40 normally tending toward the lever so as to lock the same in a position where the clutch members are separated but which may be moved to a position to release the lever and allow the clutch members to come together under the action of the spring 34. A thumb piece 41 is provided for the manipulation of the latch member 40.

Mounted on the arbor of the platen 2 is a sprocket wheel 42 and extending between the sprocket wheel 42 and the sprocket wheel

31 is a sprocket chain 43 so that when the platen 2 is rotated the shaft 30 will participate in the movement of the platen to an extent commensurate with the relation of the sprocket wheels 42 and 31. The chain 43 may be provided with a readily separable coupling so that the attachment may be applied to or removed from the typewriter carriage at any time without the necessity of dismantling the carriage. Whenever the platen 2 is rotated then the gear wheel 24 is likewise rotated if the clutch members be in engagement and this rotation is imparted to the roller 27 through the other gear wheel 23.

The surface of the roller 27 may be roughened as by the application of emery and the inner face of the cover 12 may be likewise roughened as by the application of emery and the emery may be in the form of powder secured to the surfaces by glue or otherwise, or sand or emery paper may be fastened to the roller and to the inner surface of the cover instead of the direct application of the roughening material.

In the bottom portion of the reservoir, considering the reservoir as in place on the typewriter, there are slots 45 one near each end of the reservoir and extending lengthwise thereof. Extending through these slots are threaded stems 46 each receiving a thumb or wing nut 47. The stems 46 are each secured to a respective plate 48 of the general shape of the cross section of the reservoir except that the said plate is reduced in thickness toward the forward end as indicated at 49 to avoid contact with the roller 27. The two plates 48 are adjustable toward or from the respective ends of the reservoir within the latter and may thereby be brought into engagement with the sides of the paper sheets to be introduced into the reservoir, and because of the range of adjustment of these plates 48 the paper sheets may be centralized in the reservoir or caused to move therein and feed therefrom nearer one end than the other if this be desirable.

Within the reservoir there is located a follower 50 under the control of two spaced thumb screws 51 each having a threaded bearing in the partition 10 before referred to so that the follower 50 may be moved to and from the partition at the will of the operator. The inner face of that portion of the reservoir over which the follower travels may be provided with index markings so that the follower can be adjusted for paper sheets of different lengths. Since the follower may enter between the plates 48 it should be no longer than the minimum distance between these plates, but in order that the follower may engage the edges of sheets of the greatest width introducible into the reservoir, the ends of the follower carry extension pieces or strips 52, one at each end of the follower. Each extension strip 52 is

provided with a central longitudinal slot 53 flanked on each side by a longitudinal depression for the reception of the square head 55 of a bolt 56 extending through a perforation in the corresponding end of the follower 50 and to the threaded end of the stem of the bolt there is applied a wing nut 57 permitting the clamping of the extension 52 in any position of adjustment longitudinal of the follower 50. In order to protect the edges of the paper sheets from contact with the heads 55 of the bolts 56, the corresponding face of each extension strip 52 may be covered by a layer 58 of fabric of suitable character. By means of the strips 52 the follower may be made to always occupy the entire distance between the plates 48 no matter what may be the position of the plates in the reservoir 7.

When the reservoir is attached to a typewriter or after a period of use, it may be found that the chain 43 is either too tight or not tight enough. It will be observed that the sprocket wheel 31 is eccentric to the axis of the roller 27 and of the shaft 25 which latter extends through the corresponding end of the reservoir 7. The casing 22 may be secured to the end of the reservoir by means of suitable screws 59 and in the end of the reservoir the passages for the screws may be elongated in the shape of curved slots 60 having the center of curvature coincident with the longitudinal axis of the shaft 25. The casing 22 may therefore be adjusted to different positions around the axis of the shaft 25 as a center, and the sprocket wheel 31 may therefore be moved toward or from the sprocket wheel 40 thus accommodating the device to the length of the chain 43. Since the shaft 30 participates in this movement of the casing 22 the bracket 39 is made fast to the casing so as to move with it and thus not disturb the relation of the lever 38 to the clutch member controlled thereby or to the latch member 40.

The partition 10 has secured thereto either permanently or temporarily an apron 61 extending down toward the platen so that paper sheets fed by the roller 27 will be directed into proper relation to the platen.

When a pile of paper sheets is introduced into the reservoir 7 the ends of these sheets are all brought into one plane against the follower 50 or the extensions 52 thereof and because this pile of paper sheets is returned on itself by reason of the U-shape of the reservoir 7 the other ends of these sheets will assume spread count position with the inner sheets more advanced than those next in order. The relation of the cover 12 to the roller 27 is such that when the sheets are introduced the cover is slightly raised and the springs 20 are under tension. When the platen is turned in the usual direction for line spacing this movement is transmitted

to the roller 27 in a direction to feed the innermost sheet of the pile outward. This feeding movement continues step by step until the sheet being fed ultimately moves into active engagement with the platen and is fed thereby in the usual manner. When the first sheet fed out of the reservoir moves away from the roller 27 the springs urge the cover 12 toward the roller so that the second sheet is engaged and is fed forward in slight over-lapping relation to the first sheet being thus brought into engagement with the platen in the manner that the writing may continue without the necessity of shifting or adjusting the paper for the head spacing, this being provided for by the over-lapping of the sheets when they reach the platen. The lip 13 with its extension 14 tends to direct the paper toward the apron 61 and the latter then directs the paper toward the receiving side of the platen. The rough inner surface of the lip 13 presents sufficient frictional resistance to the ends of the sheets engaging it to hold back all sheets except the one directly in contact with the roller 27 so that one sheet only is fed at a time.

The apron 61 is sufficiently curved away from the partition 10 to provide room for the thumb screws 51 even when the follower 50 is in engagement with the inner wall of the partition 10, and the latter is provided with passages in the paths of the thumb nuts 57 so that the follower 50 may be brought into close relation with the inner wall of the partition 10. These passages are indicated at 62 in Fig. 6.

It is found in practice that the discharging end of a sheet moving away from the platen will sometimes come into engagement with the clips 17 or the rod 15 and for this reason there is placed upon the lip 13 a guard strip 63 extending longitudinally of the lip adjacent to the rod 15 on the platen side thereof.

What is claimed is:—

1. In a paper feed attachment for typewriters, a reservoir for the sheets, means for feeding the sheets from the reservoir comprising a feed roller, driving means between the same and the platen of the typewriter and means for adjusting the portion of the driving means controlling the feed roller about the longitudinal axis of said feed roller.

2. In a paper feeding apparatus for typewriters, a reservoir for the sheets, means for feeding the sheets from the reservoir comprising a feed roller, flexible connections between the same and the platen of the typewriter, and means for the adjustment of the portion of the connections adjacent to the feed roller about the longitudinal axis of the latter.

3. In a paper feeding attachment for type-

writers, a reservoir for the sheets, means for feeding the sheets from the reservoir comprising a feed roller, flexible driving means between the same and the platen of a typewriter, means for connecting the driving means to and disconnecting it from the sheet feeding roller at will, and means for the adjustment of those portions of the driving means adjacent to the feed roller about the longitudinal axis of the latter.

4. In a paper feeding attachment for typewriters, a reservoir for the sheets, a feed roller in the reservoir, gearing carried by the reservoir in operative relation to the feed roller, a support for the gearing adjustable about the longitudinal axis of the feed roller, and flexible connections extending from said gearing to the platen of the typewriter.

5. In a paper feeding attachment for typewriters, a reservoir for the sheets, a feed roller in the reservoir, gearing carried by said reservoir in operative relation to the feed roller, a clutch, flexible driving means between one member of the clutch and the platen of the typewriter, and a support for the gearing and clutch members adjustable about the longitudinal axis of the feed roller.

6. In a paper feeding attachment for typewriters, a reservoir for the sheets, a feed roller in the reservoir, gearing for driving the feed roller, a support for the gearing adjustable about the longitudinal axis of the feed roller, a clutch connected to the gearing and adjustable with the support for the gearing, a latch for holding the clutch in the inactive position and carried by the support for the gearing, and flexible connections between one member of the clutch and the platen of the typewriter.

7. In a paper feeding attachment for typewriters, a reservoir for the sheets, feeding means for the sheets at the delivery end of the reservoir, and an adjustable follower at the other end of the reservoir having end extensions adjustable longitudinally of the follower to project beyond the ends of the latter.

8. In a paper feeding attachment for typewriters, a reservoir for the sheets, feeding means for the sheets at the delivery end of

the reservoir, an adjustable follower at the other end of the reservoir having end extensions adjustable longitudinally of the follower and guide plates within the reservoir for the edges of the sheets, said guide plates being adjustable longitudinally of said reservoir.

9. In a paper feeding attachment for typewriters a reservoir for the sheets, feeding means for the sheets at the delivery end of the reservoir, and a follower for the sheets at the other end of the reservoir, said follower having end extensions each comprising a longitudinally slotted strip with recessed portions adjacent to the slot, a clamp bolt engaging in said recessed portions adjacent to the slot and extending through the corresponding end of the follower, and a protecting covering for the recessed side of the extension strip.

10. In a paper feeding attachment for typewriters, a reservoir for sheets, a feed roller in said reservoir, a cover for the discharge end of the reservoir overlying the feed roller, and means for holding the cover in elastic relation to the feed roller comprising a bar extending longitudinally of the cover, adjustable rods extending through the ends of the bar beyond the cover and springs connecting the ends of the adjustable rod to the reservoir.

11. In a paper feeding attachment for typewriters, a reservoir for the sheets, a feed roller within the reservoir, a partition extending along the edge of the reservoir at the end remote from the feed roller, an adjustable follower adjacent to the partition and provided with adjusting screws extending through said partition and an apron carried by said partition and guiding sheets discharged from the reservoir away from the adjusting screws and toward the platen of the typewriter machine.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

WILDEY R. DIXON.

Witnesses:

J. L. SILER,
C. A. PACK.