

E. S. MANSFIELD.
PAPER FEED FOR TYPE WRITERS.
APPLICATION FILED NOV. 24, 1908.

941,889.

Patented Nov. 30, 1909.
2 SHEETS—SHEET 1.

Fig. 1.

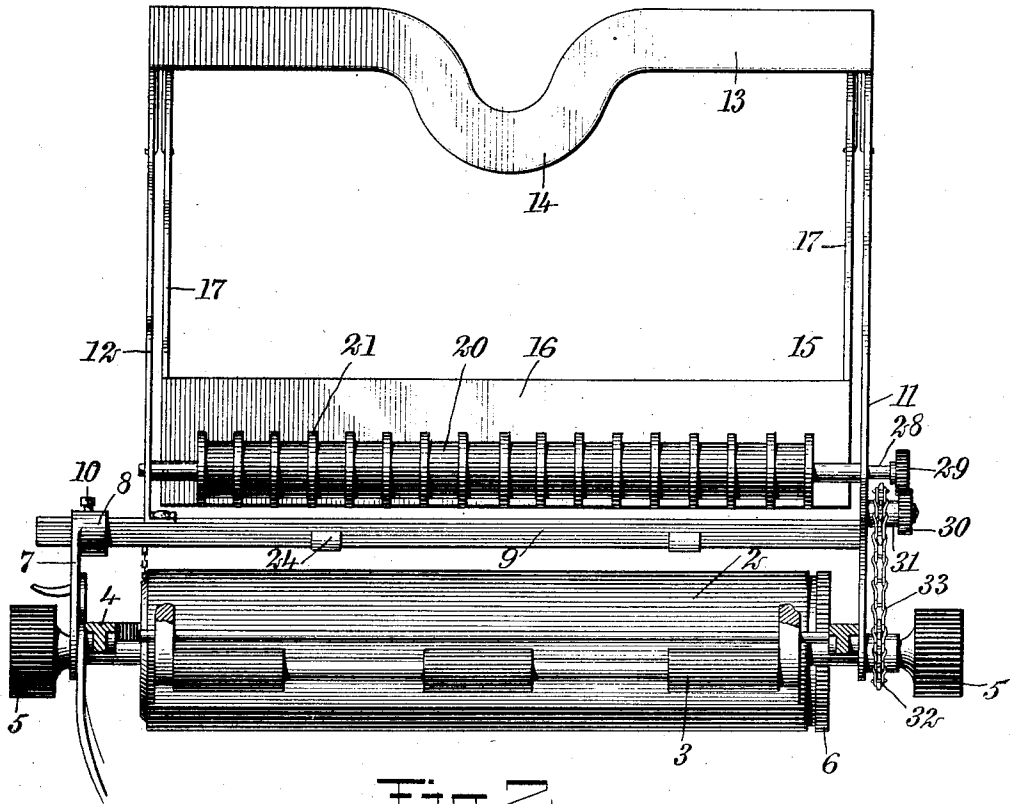
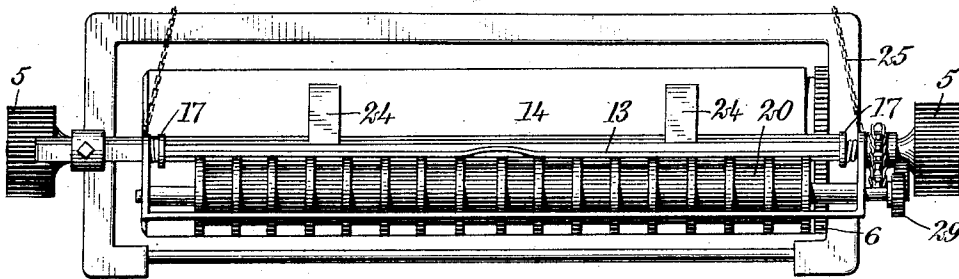


Fig. 2.



WITNESSES

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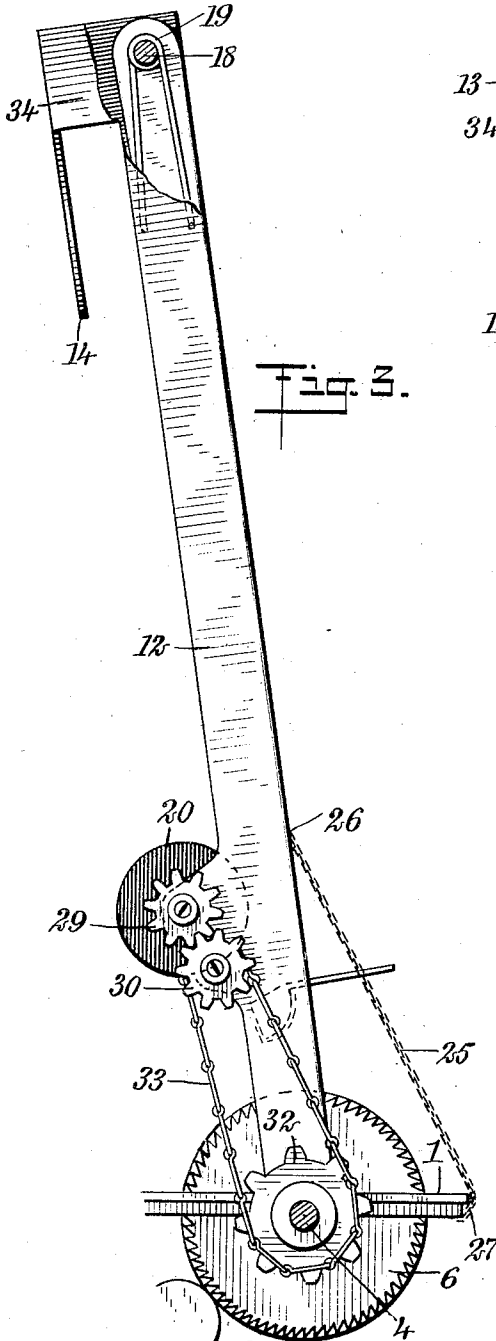


Fig. 3.

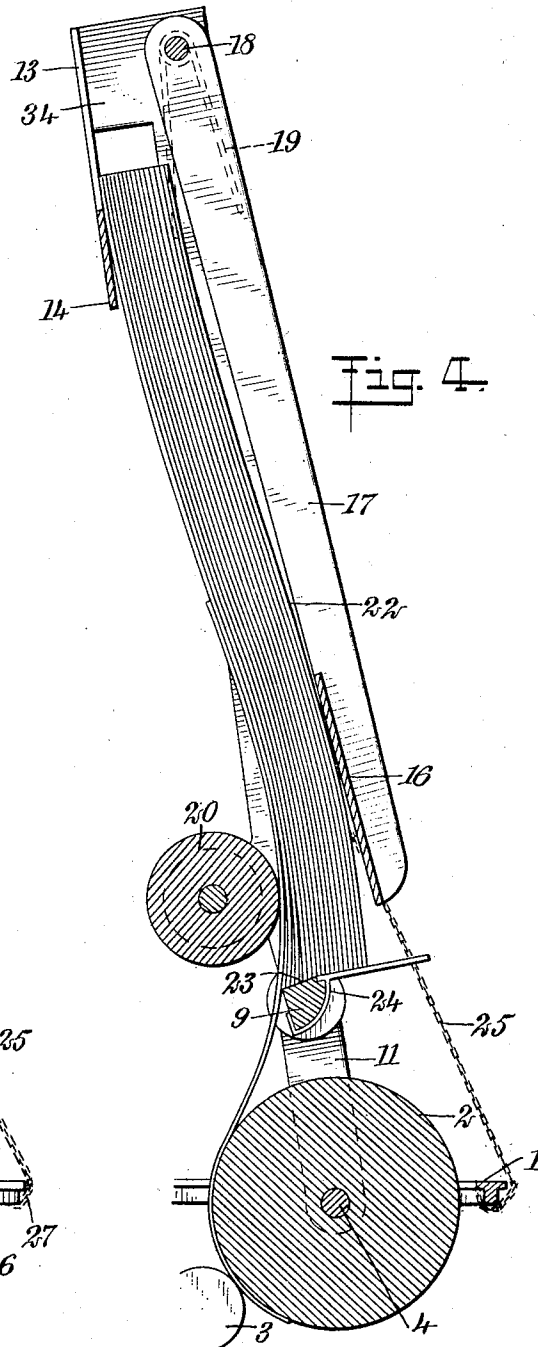


Fig. 4.

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UNITED STATES PATENT OFFICE.

ESTON S. MANSFIELD, OF ATLANTA, GEORGIA.

PAPER-FEED FOR TYPE-WRITERS.

941,889.

Specification of Letters Patent.

Patented Nov. 30, 1909.

Application filed November 24, 1908. Serial No. 464,278.

To all whom it may concern:

Be it known that I, ESTON S. MANSFIELD, a citizen of the United States, and a resident of Atlanta, in the county of Fulton and State of Georgia, have invented a new and Improved Paper-Feed for Type-Writers, of which the following is a full, clear, and exact description.

This invention relates to a paper feeding device for typewriters, and the object of the invention is to provide a device of this class which can be readily attached to a typewriter of ordinary construction, and which will operate to hold a number of sheets of typewriter paper and advance the same in succession to the platen.

The invention consists in the construction and combination of parts to be more fully described hereinafter and particularly set forth in the claims.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is an elevation of the feed device, but projected on a plane slightly inclined from the vertical and parallel with the frame of the feed device, in this view certain parts are broken away and shown in cross section, and this view shows the device as seen from the rear; Fig. 2 is a plan or upper end view of the device; Fig. 3 is a side elevation of the device showing a portion of the typewriter carriage and its contiguous mechanism, the upper portion of this view being partly broken away and in cross section; and Fig. 4 is a vertical section taken through the feed device and showing substantially the same parts represented in Fig. 3.

Referring more particularly to the parts, 1 represents the frame of the typewriter carriage in which there is mounted a rotatable roller or platen 2, with which coöperates the feed roller 3 which holds the paper against the platen in the usual manner. At its extremities, the shaft 4 of the platen is provided with thumb heads 5, by means of which the platen may be rotated as desired. In addition to this the shaft is provided with a ratchet wheel 6, by means of which the line spacing may be automatically made by any suitable mechanism. On one end of the shaft 4, an upwardly projecting arm 7 is provided, and at its outer end this arm is provided with an enlargement or hub 8, in

which there is received a horizontal foot bar 9, said foot bar being secured in the hub by means of a set screw 10, as indicated. At the other end of the shaft 4, a long arm 11 extends upwardly, substantially parallel with the arm 7, and the end of the foot bar abuts against this arm 11 and is rigidly attached thereto, as will be readily understood. Near the end of the foot bar 9 adjacent to the arm 7, a long arm 12 is rigidly attached, which extends upwardly parallel with the long arm 11. The upper ends of these arms 11 and 12 are united by a keeper bar or keeper 13, the middle portion of which is provided with a downwardly extending bow 14, as indicated in Fig. 1.

Between the arms 11 and 12 there is provided a presser frame 15, which comprises a long, horizontal plate or flat bar 16 which extends the length of the machine. This presser plate 16 is suspended by means of arms 17 from pivot pins 18 on the inner faces of the arms 11 and 12, as shown. Around these pivot pins 18, coil springs 19 are provided. One end of each of these springs is attached in the arms 11 or 12, and the other ends of the springs are attached to the arms 17, the operation of the springs being to press the plate 16 resiliently toward a feed roller 20, which feed roller is mounted in a horizontal position between the arms 11 and 12, as indicated. The body of this feed roller is composed of rubber or similar material, and it is formed with a plurality of collars 21 of increased diameter, the peripheries of which are adapted to engage with the sheets 22 of paper which are set in the feed device, as indicated in Fig. 4.

The foot bar has preferably the form of a quadrant in cross section presenting an upper face 23 which is inclined to the horizontal. At suitable intermediate points this foot bar 9 is provided with brackets or clips 24, the bodies of which project outwardly so as to form a support for the lower edge of the pad of sheets 22, as indicated in Fig. 4. The frame of the feed device is normally held in substantially the position shown in Figs. 3 and 4, by means of a small chain 25 which is attached to the arm 12 at the point 26, and to the frame 1 at the point 27, as indicated in Fig. 3.

On the shaft 28 of the feed roller 20 there is provided a rigid pinion 29, and with this pinion 29 meshes an idle pinion 30 which is rotatably mounted on the outer side face of

the arm 11, as indicated. The hub of this pinion 30 is formed into a sprocket wheel 31, and a similar sprocket wheel 32 is formed on the hub of the thumb head 5, which is disposed at this end of the machine. These sprocket wheels 31 and 32 are connected by a sprocket chain 33 so that any rotating movement of the platen is communicated equally to the feed roller 20. As indicated in Figs. 3 and 4, the upper ends of the arms 11 and 12 are formed with laterally offset necks 34, and the ends of these necks are connected by the keeper bar 13.

Special attention is called to the relative position of the face 23 of the foot bar with respect to the plane, or approximate plane of the sheets 22 of paper. The plane of this face should make an inclination of about 110° with the angle of the sheets held in the feed frame, and furthermore, the rear edge of the foot bar should be nearly on a tangent plane connecting the forward face of the feed roller 20 with the rear face of the platen 2.

The manner in which the sheets of paper are held in the feed frame will appear from an inspection of Fig. 4. Their lower edges are supported on the foot bar as suggested above, and the lower portions of the sheets are pressed across the face of the feed roller 20 by the presser plate 16 through the action of the springs 19. The upper edges of the sheets rest against the bar 13. When the roller 20 is rotated, a high degree of friction is developed at this point by contact with the adjacent sheet of paper and this forces the paper downwardly across the rear edge of the feed roller, as indicated in Fig. 4. It will not advance the sheet behind the one with which it is in contact, for the reason that the friction between the sheets of paper themselves is very slight.

Attention is called to the fact that when the feed roller 20 is being operated, the left side of the chain 33, as viewed in Fig. 3, is under tension, which tension tends to rotate the paper holder frame toward the left. This force is opposed by the tension of the chain 25 which maintains the paper holder in equilibrium.

Having thus described my invention, I claim as new and desire to secure by Letters Patent,—

1. A typewriter having a platen roller and a frame supporting said roller, in combination with an open rectangular feed frame supported on said first frame and extending upwardly therefrom, said feed frame having a transverse keeper bar at the upper end thereof, adapted to support the upper end of a pad of sheets, a pressure frame pivotally supported on said feed frame near the upper

portion thereof and adapted to engage the lower part of the pad of sheets, a feed roller mounted in said feed frame near the lower portion thereof, springs forcing said presser frame against said pad and toward said feed roller, a foot bar mounted in said feed frame adapted to support the lower edges of the sheets of paper held in said feed frame, and means for rotating said feed roller.

2. A typewriter having a platen roller and a frame supporting said roller, said platen roller having a shaft with projecting extremities, a sprocket wheel mounted on said shaft, a feed frame having arms pivotally mounted on said shaft extending upwardly and inclining rearwardly, a feed roller mounted in said feed frame, a foot bar disposed adjacent to said feed roller, a presser frame pivotally mounted in the upper part of said feed frame and adapted to press a pad of sheets against said feed roller, a sprocket chain passing over said sprocket wheel, means for driving said feed roller from said sprocket chain, and means for limiting the rearward movement of said feed frame.

3. A typewriter having a platen roller and a frame supporting the same, said platen roller having a shaft with projecting extremities, a feed frame having arms pivotally mounted on said shaft, said feed frame extending upwardly and inclining rearwardly, a chain connecting said feed frame with the forward part of said platen frame and limiting the rearward movement of said feed frame, a transverse feed roller mounted in said feed frame above said platen roller, a presser roller pivotally mounted on said feed frame and adapted to press the lower portion of a pad of sheets against said feed roller; a foot bar adjacent to said feed roller adapted to support the lower edge of said pad, a sprocket wheel mounted on said shaft and rotating with said platen roller, a sprocket wheel mounted on said feed frame adjacent to said feed roller, a pinion rigid with said last sprocket wheel, a pinion rigid with said feed roller meshing with said first pinion, and a sprocket chain connecting said sprocket wheels, the direction of rotation of said platen roller being such as to produce a tension in the side of said sprocket chain remote from said first chain whereby the feeding movement tends to maintain said feed frame in equilibrium.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ESTON S. MANSFIELD.

Witnesses:

J. M. DANIEL,
J. H. RAMSAUR.