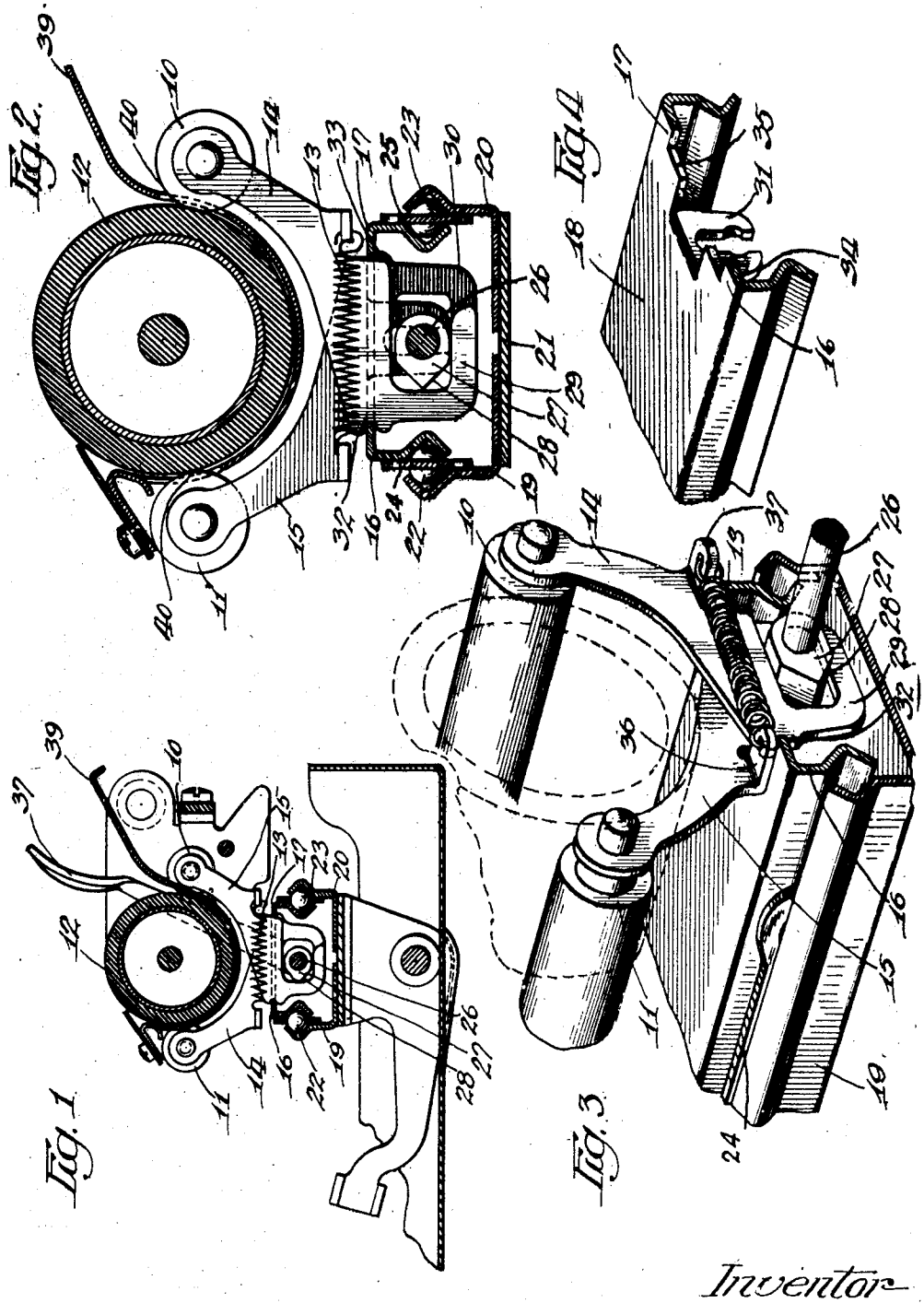
Jan. 12, 1932. M. GARBELL 1,841,116

TYPEWRITER PAPER FEED MECHANISM

Filed March 20, 1929 2 Sheets-Sheet 1



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TYPEWRITER PAPER FEED MECHANISM

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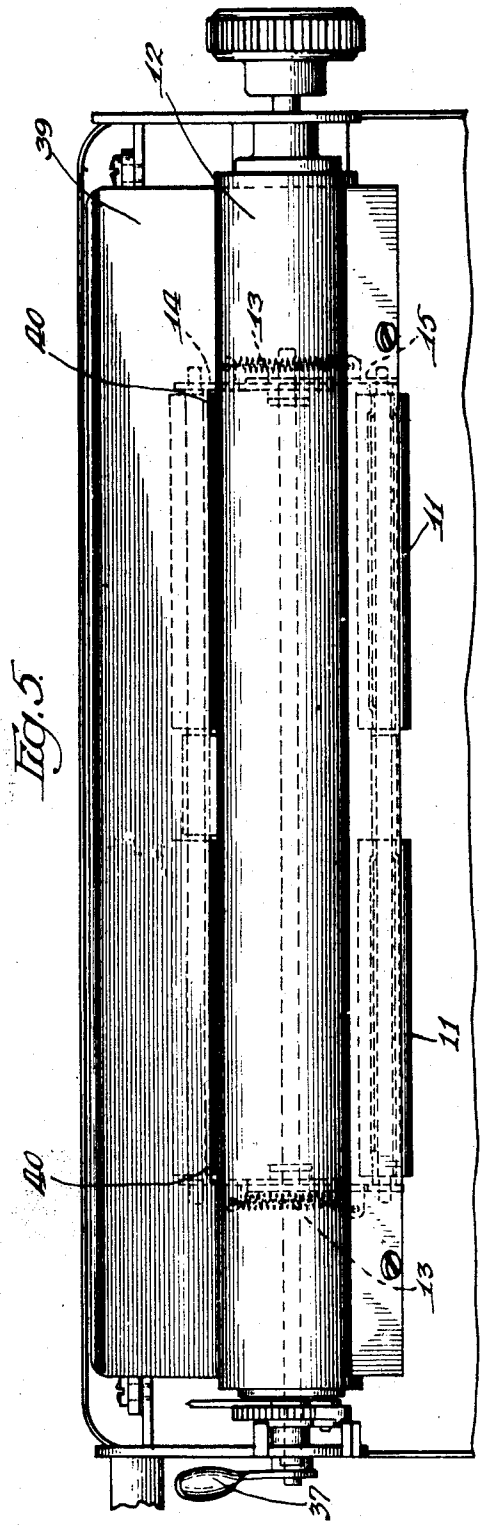


Fig. 5.

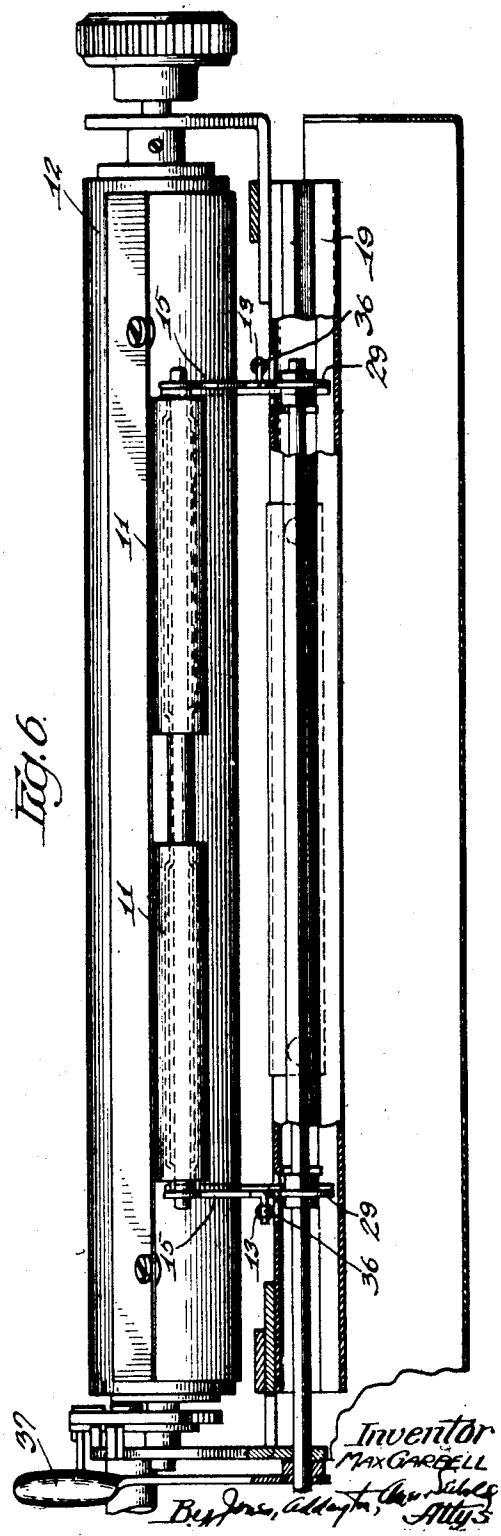


Fig. 6.

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UNITED STATES PATENT OFFICE

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TYPEWRITER PAPER FEED MECHANISM

Application filed March 20, 1929. Serial No. 348,415.

My invention relates to new and useful improvements in paper feed mechanisms and particularly to the paper feed mechanisms used on typewriters. The form of paper feed mechanism heretofore used is complicated and expensive to make. My improved form results in increased efficiency and greater economy in manufacture. My invention will be more fully explained by reference to the accompanying drawings, wherein:

Figure 1 is a sectional, side elevational, view of the feed mechanism and of that part of the typewriter to which it pertains;

Fig. 2 is an enlarged side elevational view of the feed mechanism;

Fig. 3 is a perspective view of the feed mechanism;

Fig. 4 is a detailed view of the carriage rail;

Fig. 5 is a top plan view of a portion of the feed mechanism as it appears mounted in connection with the platen and feed rolls of a typewriter; and

Fig. 6 is a side elevational view of the feed mechanism, feed rolls, and platen.

Referring now more particularly to the drawings, feed rolls 10 and 11 are shown biased against a platen 12 by a spring 13 which actuates bracket arms 14 and 15. Bracket arm 14 is pivoted on the flange 16 of the carriage rail 18, while bracket arm 15 is pivoted on the flange 17 of said carriage rail 18. The flanges 16 and 17 of the carriage rail 18 travel along a raceway comprising fixed rails 19 and 20 attached to the carriage truck 21. The balls 22 and 23 separate the fixed rails 19 and 20 from the flanges 16 and 17 of the carriage rail 18. Separators 24 and 25 position the balls 22 and 23 longitudinally of the carriage rail. A rock shaft 26 is attached to a cam 27, said cam having a flat 28 which engages the lower arms 29 and 30 of the bracket arms 14 and 15 when the rock shaft 26 is moved to depress the portions 29 and 30 of the bracket arms 14 and 15, thereby releasing the feed rolls 10 and 11 from contact with the platen 12.

The carriage rail 18 is formed of a single piece of steel, the portion 31 thereof depending at right angles therefrom and forming a bearing for the rock shaft 26.

Indentations 32 and 33 in the bracket arms 14 and 15 determine the point where said bracket arms are pivoted on the flanges 16 and 17 of the carriage rail 18. The carriage rail 18 is cut back at points 34 and 35 so as to permit unimpeded downward motion of the bracket arms when the cam 27 is in its engaged position.

The spring 13 is attached to flanges 36 and 37 respectively of the bracket arms 14 and 15 and these flanges are located between the point of contact of the feed rolls 10 and 11 with the platen 12 and the point of contact of the flanges 16 and 17 with the indentations 32 and 33 in the bracket arms 14 and 15. This spring 13 is only slightly displaced from a vertical plane passing through the points where the bracket arms are pivoted on the flanges of the carriage rail.

A lever 37 actuates the rock shaft 26 to thereby move the cam 27 to force the rolls away from the paper around the platen. Apertures 40 in the paper apron 39 permit the feed rolls 10 and 11 to engage with the platen 12.

My copending applications, Serial Nos. 239,015 and 239,821 illustrate a typewriting machine in which the above described paper feed roll mechanism may be advantageously employed.

When paper is to be fed into the typewriter, it is inserted between the paper apron 39 and the platen 12, the feed rolls 10 and 11 being then spaced away. When it is desired to release the pressure of the feed rolls in order to adjust the position of the paper, said feed rolls are moved away from the platen by pushing the lever 37 toward said platen thereby causing the flat of the cam 27 to depress the lower arms 29 and 30 of the bracket arms 14 and 15, and to hold said bracket arms in said depressed position, said bracket arms being pivoted on the carriage rails 16 and 17 so that the feed rolls 10 and 11 are in spaced relation from the platen 12. When it is desired again to restore tension of the feed rolls 10 and 11 against the platen 12, the lever 37 is moved backwardly from the

platen so that the flat of the cam 27 is disengaged from the lower arms 29 and 30 of the brackets 14 and 15.

One object of my invention is to reduce the number of parts in typewriter paper feed mechanisms thereby achieving simplicity and economy. Another object of my invention is to simplify the superstructure of said feeding mechanisms and to insure that there are no exposed parts in which material may become caught or entangled.

As will be observed from the above description of my invention, the actuating means for moving said feed rolls away from the platen are seated or contained between the two carriage rails. The cam 27 contacts with the lower portions of the roll-carrying brackets or arms 14 and 15 in said rail enclosed space so that the possibility of non-operation of the said roll disengaged means through the intervention of foreign material is eliminated.

Moreover, the above described feed roll control mechanism is very simple in operation and comprises a minimum number of parts. It is therefore essential that the possibility of unauthorized tampering with this mechanism be prevented. This end is accomplished by the aforesaid enclosed relation of the elements.

Again, by relating the elements as above described so that the entire feed roll control mechanism requires only the parts shown, the cost of manufacture of my improved typewriting machine is radically reduced. The parts may all be composed of stampings which are so arranged that they may be mounted in operative relation to the rails without bolts or other securing means. In connection with this elimination of superfluous parts, attention is specifically directed to the manner in which the rock shaft 26 is journaled in the portions 31 depending from the rail 18, as well as the way in which the brackets are pivotally secured to the upper carriage rail.

While I have described but a single embodiment of my invention, it will be apparent to those skilled in the art that there may be many modifications therein without departing from the spirit and scope of this invention, and I desire therefore, that the same be limited only by the scope of the appended claims and the prior art.

I claim:

1. In a paper feeding device, a platen, a supporting structure therefor, feed rolls cooperative with said platen, bracket arms supporting said feed rolls, fulcrums for said bracket arms constituted by the edges of a slot in said supporting structure, and tension means common to said bracket arms, said tension means biasing said feed rolls against said platen and biasing said bracket arms against said fulcrums.

2. In a paper feeding device, a platen bracket arms, feed rolls supported by saic bracket arms and cooperative with saic platen, a carriage rail having a slot therei with edges constituting fulcrums for saic bracket arms, and tension means common t said bracket arms biasing said rolls agains said platen and said bracket arms agains said fulcrums.

3. In a typewriter or the like, in combina tion, a carriage truck, a carriage rail sup ported by said truck above the same and i spaced relation thereto, journal means forme integrally with said carriage rail and de pending therefrom into the space betwee said truck and rail, and a paper-feed-rol release shaft located in said space and jour naled in said journal means.

4. A carriage rail having an apertur therein with edges adapted to constitute ful crums for paper-feed-roll supporting brack ets and comprising an integral portio adapted to constitute a journal for a paper feed-roll release shaft and formed by mate rial struck out in part from said aperture

5. In a device for feeding paper around typewriter platen, a carriage rail supportin said platen, paper-feed-rolls, arms on whic said rolls are supported, said arms being piv otally mounted on the edges of a slot in sai rail, and means for urging said arms agains the pivots constituted by the edges of sai slot.

6. A paper-feed-roll bracket comprising substantially horizontally extending portion a roll-supporting arm extending from on end of said first-mentioned portion, a spring attaching lug at said end of said first mentioned portion, spaced projecting por tions at the other end of said first-mentione portion to form a notch for pivotally sup porting the bracket, a portion dependin from said other end of said first-mentione portion, and a cam-engaging portion extend ing substantially parallel to and in the direc tion of said first-mentioned portion from th bottom of said depending portion.

7. In a typewriter or the like, in combina tion, a movable carriage rail having a slo extending transversely thereof, a pair o paper-feed-roll supporting brackets extend ing through said slot and each having notch formed in an edge thereof to bea against the respective ends of said slot, an a spring coacting between said brackets an pressing the notched portions thereof agains the ends of said slot whereby said end constitute fulcrums for said brackets.

8. In a typewriter or the like, in combina tion, a movable carriage rail having a slo extending transversely thereof, a pair o paper-feed-roll supporting brackets extend ing through said slot and each having a notc formed in an edge thereof to bear agains the respective ends of said slot, a spring co

acting between said brackets and pressing the notched portions thereof against the ends of said slot whereby said ends constitute fulcrums for said brackets, and a cam for moving said brackets apart against the force of said spring, said brackets having juxtaposed portions engageable by said cam.

In witness whereof, I have hereunto subscribed my name.

MAX GARBELL.