

May 14, 1946.

J. E. EUTH

2,400,226

STATIONERY FEEDING DEVICE FOR TYPEWRITING MACHINES

Filed Jan. 1, 1944

3 Sheets-Sheet 1

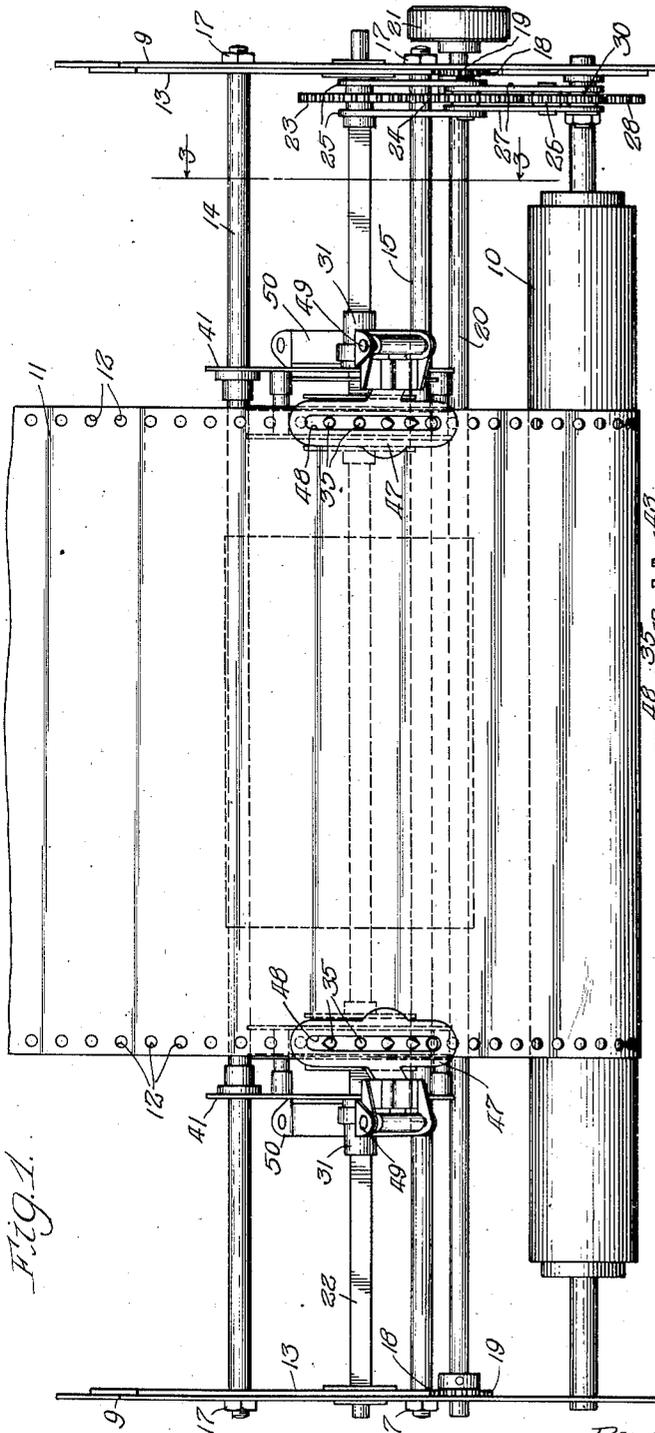


Fig. 1.

Fig. 8.

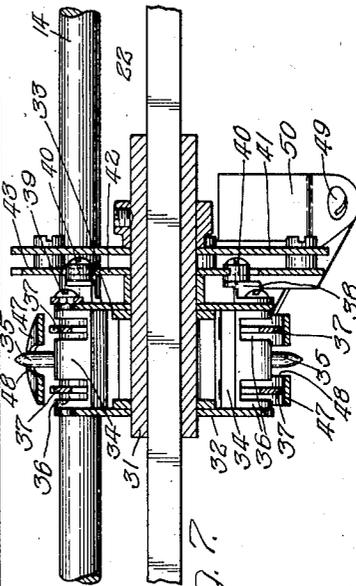
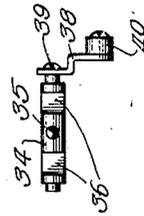


Fig. 7.

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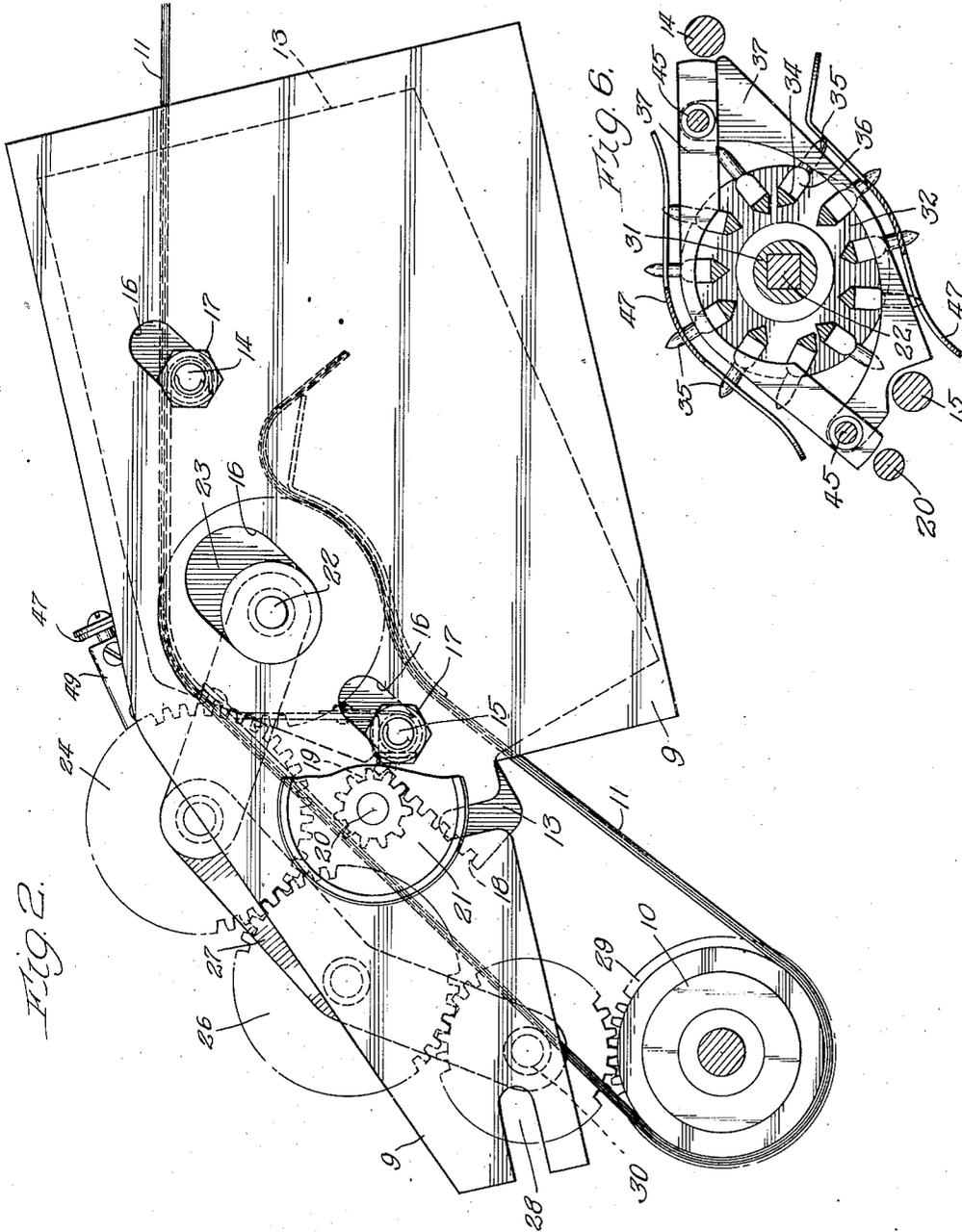
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STATIONERY FEEDING DEVICE FOR TYPEWRITING MACHINES

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3 Sheets-Sheet 2



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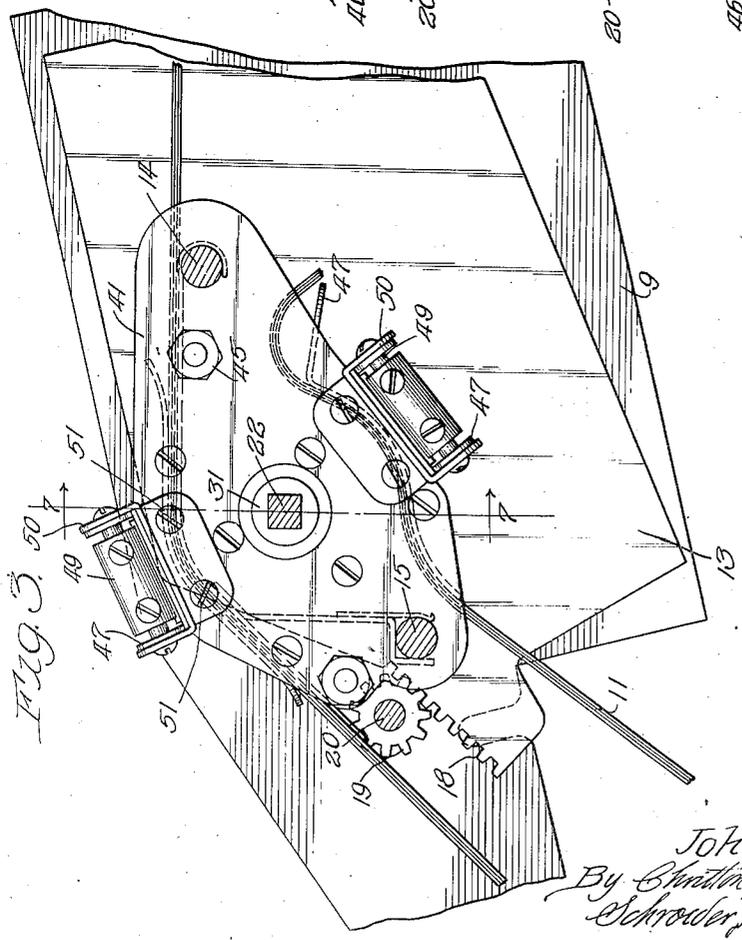
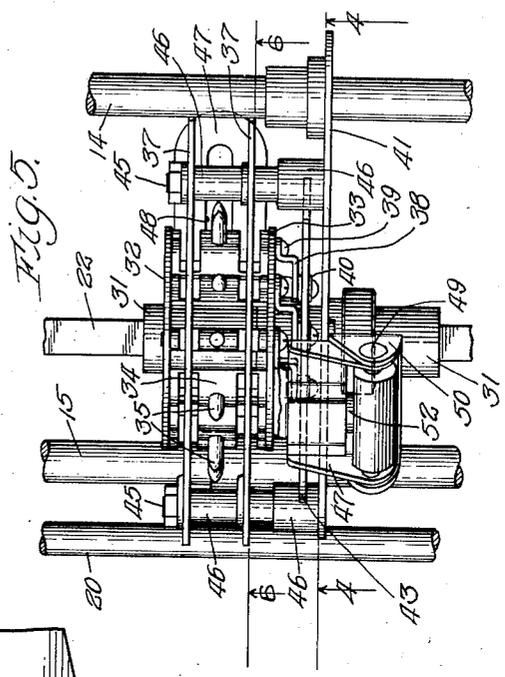
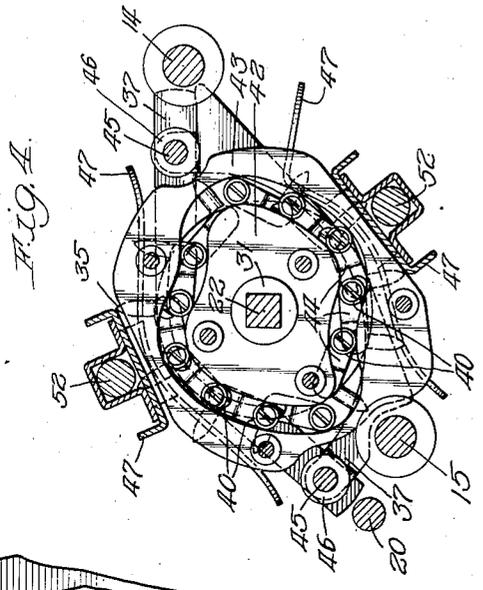
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STATIONERY FEEDING DEVICE FOR TYPEWRITING MACHINES

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3 Sheets-Sheet 3



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# UNITED STATES PATENT OFFICE

2,400,226

## STATIONERY FEEDING DEVICE FOR TYPEWRITING MACHINES

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Application January 1, 1944, Serial No. 516,635

7 Claims. (Cl. 197—133)

This invention relates to stationery feeding devices of the pin-wheel type, and more particularly to an improved feeding mechanism wherein perforated superposed stationery strips are accurately registered with each other while engaged by the pin-wheel.

The primary object of the invention is to provide an improved pin-wheel device wherein perforations in the stationery are engaged by feed pins on a wheel and the pins are then inclined away from each other, so that the stationery, in effect, is tensioned between a pair of adjacent pins which engage an adjoining pair of holes in the strip. This action causes the strips to be brought into substantially perfect registration.

Another object of the invention is to provide an improved mounting for the stationery feed-wheels wherein the wheels, although driven from the platen roll of the typewriter, may be adjusted bodily to and from the platen to obtain proper alignment of the stationery in writing position on the platen and keep the strips fairly taut between the platen and feed-wheels.

Another object of the invention is to provide a cam for operating oscillatable pins so that the lower side of the wheel may draw strips of stationery in one direction towards the platen while the upper portion of the wheel simultaneously draws the stationery away from the platen.

A further object of the invention is to provide an improved feed-wheel with oscillatable pins which is operable to feed the stationery either forwardly or rearwardly.

The invention is illustrated in a preferred embodiment in the accompanying drawings, in which—

Figure 1 is a plan view showing an attachment for a typewriting machine connected up to a rotary platen roll; Figure 2, a side elevational view of the same; Figure 3, a fragmentary sectional view, taken as indicated at line 3—3 of Figure 1; Figure 4, a vertical sectional view, taken as indicated at line 4—4 of Figure 5; Figure 5, a fragmentary plan view of one of the feed-wheels; Figure 6, a vertical sectional view, taken as indicated at line 6—6 of Figure 5; Figure 7, a vertical sectional view of one of the feed-wheels, taken as indicated at line 7—7 of Figure 3; and Figure 8, a plan view of one of the feed pin units.

In the embodiment illustrated, a supporting frame 9 is detachably secured to a typewriting machine having a driven platen roll 10 about which stationery 11, provided with marginal perforations 12, may be drawn.

An auxiliary frame 13 has its side members

held in spaced relation by an upper cross rod 14 and a lower cross rod 15. The ends of these rods project through enlarged slots 16 in the supporting frame and are provided at their ends with nuts 17 which may be tightened to hold the auxiliary frame in an adjusted position with respect to the main frame 9.

As shown in Figures 1 and 2, the auxiliary frame is provided at each side with a rack gear 18 which is engaged by a pinion 19 fixed to a shaft 20 which is provided at one end with a knob 21. Thus it will be understood that the auxiliary frame may be adjusted bodily with respect to the platen 10 by loosening the nuts 17 and turning the knob 21 to a desired position where the nuts can again be tightened.

The auxiliary frame is provided with a square shaft 22 which is anti-frictionally journalled in the side plates 13 and is provided at one end with a gear 23. This gear is held in mesh with an idler gear 24 on a link 25. The gear 24 meshes with an idler gear 26 journalled on a crank 27 so as to mesh with a gear 28 which makes a driving connection with a gear 29 on the shaft of the platen roll 10. The crank 27 is pivotally mounted on a stud 30 on which the gear 28 is journalled and secured to the supporting frame 9. Thus it will be understood that the auxiliary frame may be moved bodily with respect to the platen 10 without interrupting the proper driving connection with the platen roll.

The pin wheels are of similar construction, and, as shown in Figures 6 and 7, have a hub portion 31 slidably mounted on the shaft 22 and have fixed to the hub a pair of spaced disks 32 and 33 which afford bearings for the series of oscillatable feed units 34. Each of the feed units carries an outwardly extending pointed feed pin 35 and is slotted, as indicated at 36, to provide clearance for stripper members 37. The trunnions on the feed units 34 extend through the disks and are provided at one end with a cam crank 38 which is secured to the trunnion by a screw 39 and is provided at the other end with a cam roller 40.

A cam member 41 is slidably mounted on the cross rods 14 and 15 and has affixed thereto, in spaced relation, an inner cam 42 and an outer cam 43 which provide a cam groove 44 to receive the rollers 40 of the feeding units. As best shown in Figures 5 and 6, the stripper plates 37, which extend through the clearance slots 36 in the feed units, are also secured to the cam member 41 by bolts 45 provided with suitable spacing washers 46.

The cam groove 44, as best shown in Figure 4, is arranged so that when the feed-wheel is rotated clockwise the feed pin is inclined forwardly as it approaches engagement with the stationery 11. It is then swung rearwardly along a path so that while the next advanced adjacent pin is pressing the advance side of the perforation in the paper which it impales, the following pin is pressing against the back edge of its hole in the stationery. By this action the stationery between the adjacent holes is tensioned slightly and the superposed strips are brought into substantially perfect registration.

Each of the feed-wheels is provided with an upper and lower guide member. The guide members each have an arcuate strip 47 which has a longitudinal slot 48 to provide clearance for the feed pins 35. The member 47 is pivoted at 49 to a bracket 50 which is secured to the cam-member 41 by screws 51. As shown in Figure 5, a spring pressed plunger 52 is secured to the member 47 and bears against a flat side of the pivot 49. Thus it will be understood that the slotted member 47 may readily be turned up out of the way to facilitate loading.

After the attachment has been installed on the typewriting machine or tabulating machine, the stationery 11 is drawn from in rear of the machine into engagement with the lower side of the feed-wheels. The lower guide members 47 are then turned into operative position and by rotating the platen roll the stationery may be advanced down around the platen and up into engagement with the pins on the upper side of the feed-wheels. The upper guide members 47 may then be swung down into position and the device is ready to feed the stationery. If there is too much slack in the web between the feed-wheels and the platen, the nuts 17 may be released and the stationery tensioned properly by rotating the knob 21. After tightening the nuts 17, the machine is then ready to feed the stationery automatically.

The foregoing detailed description has been given for clearness of understanding only, and no unnecessary limitations should be understood therefrom for some modifications will be obvious to those skilled in the art.

I claim:

1. In a typewriting machine having a driven platen, a feed-wheel geared to said platen for feeding perforated stationery strips, said wheel having a series of forwardly and rearwardly tiltable feed pins to engage the perforations in the strips, and means for tilting adjacent pins in separate perforations away from each other to cause registration of the superposed advancing strips.

2. In a typewriting machine having a driven platen, a feed-wheel geared to said platen for feeding perforated stationery strips, said wheel having a series of feed pins to engage the per-

forations, said feed pins being mounted on the wheel to tilt forwardly and rearwardly with respect to the direction of rotation of said wheel; and means for successively tilting each pin forwardly as it approaches engagement with the stationery, tilting the pin rearwardly after engagement with the stationery to cooperate with an adjacent pin in aligning said stationery, and then tilting said pin rearwardly to facilitate withdrawal from the stationery.

3. A device as specified in claim 1, in which the tilting means includes a fixed cam adjacent to the wheels.

4. In a typewriting machine having a platen, a pin-feeding device comprising: a supporting frame mounted on said typewriting machine, an auxiliary frame slidably mounted on said supporting frame and having a driven pin-wheel to engage perforations in the stationery and draw said stationery around said platen, adjusting means for moving said auxiliary frame bodily with respect to the supporting frame to regulate the distance between said pin-wheel and platen, said adjusting means including a rack on one of said frames with an intermeshing pinion on the other frame, and means for locking the auxiliary frame in an adjusted position.

5. In a typewriting machine having a driven platen, a pin-feeding device comprising: a supporting frame mounted on said typewriting machine, an auxiliary frame carried by said supporting frame and having a pin-wheel to engage perforations in stationery and draw the stationery around said platen, a train of gears arranged on links to hold the pin-wheel in driving connection with said platen at various adjusted positions, and adjusting means for moving said auxiliary frame bodily with respect to the supporting frame to regulate the distance between said pin-wheel and platen.

6. A pin-feeding device adapted to feed perforated stationery strips comprising: a driven wheel in which is journaled a plurality of units each having an outwardly extending feed pin and provided with a crank arm to oscillate the unit in the direction of travel of the strips, and a fixed cam-member having a groove to engage said crank arms, said groove being shaped to incline the pin for easy entry into perforations in the advancing stationery strips, to then swing adjacent pins away from each other after engagement with adjacent perforations to register accurately the superposed strips, and then swing the pins rearwardly to facilitate withdrawal from the registered perforations.

7. A device as specified in claim 6, in which each of the feed units has clearance slots, and a fixed stripper member extends through said slots and guides the stationery away from the pins after registration thereon.

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