May 29, 1934. L. E. YOUELL 1,961,028

TYPEWRITER ATTACHMENT

Filed April 15, 1932

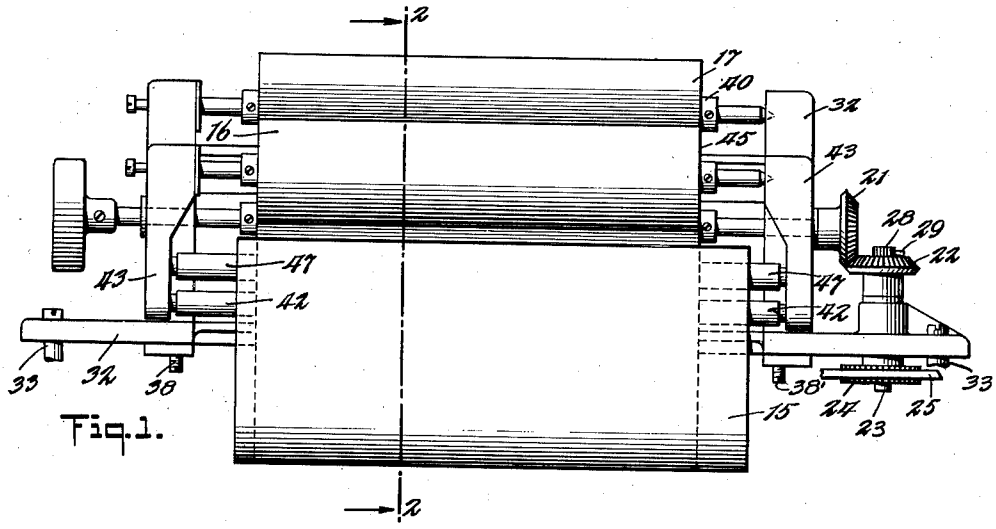


Fig. 1.

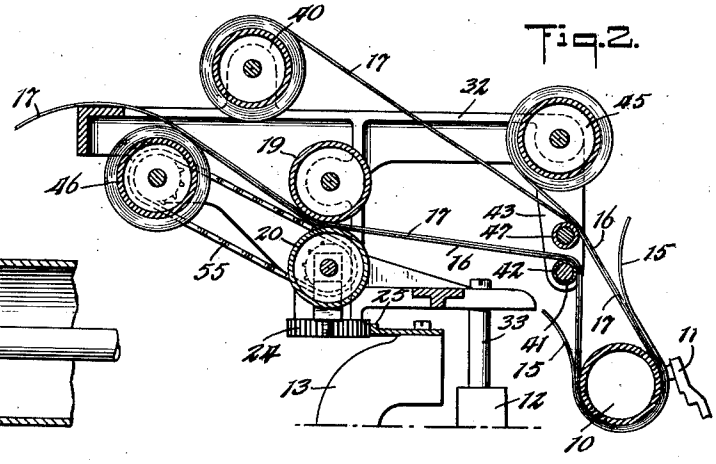


Fig. 2.

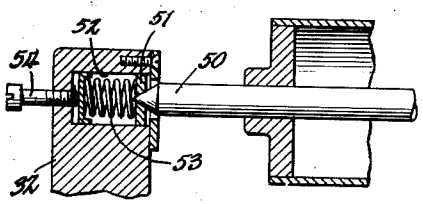


Fig. 4.

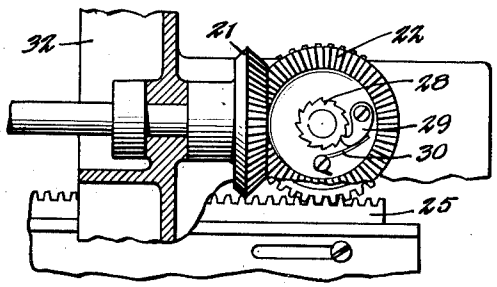


Fig. 3.

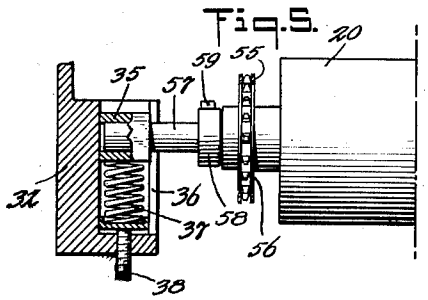


Fig. 5.

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TYPEWRITER ATTACHMENT

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Application April 15, 1932, Serial No. 605,505

8 Claims. (Cl. 197—131)

This invention relates to typewriting machines adapted for making an original and one or more carbon copies, on sheets generally of different widths or lengths, and more particularly to mechanism for line spacing one of the sheets a different amount from that of the other.

It is the main object of the invention to provide an automatic device actuated by movement of the typewriter carriage for effecting the desired line spacing.

Other objects and features of novelty will be apparent as the following description proceeds, reference being had to the accompanying drawing, in which

Figure 1 is a front elevation of a preferred form of my invention as embodied in an attachment adapted to be secured to a conventional typewriter;

Figure 2 is a vertical section taken along the line 2—2 of Figure 1;

Figure 3 is an enlarged detail plan view of a portion of the structure shown in Figure 1;

Figure 4 is a detail section through a friction brake for certain of the rollers, and

Figure 5 is a detail of a pressure bearing for one of the pressure rollers.

The invention is of general application to various kinds of typewriters, and for this reason it has been illustrated in connection with a conventional typewriter, of which the platen 10, type bar 11, and portions of the carriage 12 and stationary frame 13, are shown in Figure 2. In this view a sheet 15, which is to constitute the original being typed, is passed around the platen 10 so as to receive the impression from the type bar 11. A carbon web 16 passes around the platen under the sheet 15, and a copy sheet 17 passes around the platen under both sheets 15 and 16.

In the form shown, it is desired to line space the copy sheet 17 a greater distance than that of the original sheet 15. For this purpose a roller 19 is provided, and the sheet 17 is passed between this roller 19 and a coacting pressure roller 20.

The roller 19 is driven by movement of the carriage 12. For this purpose, the shaft of the roller 19 has keyed thereto a bevel gear 21 which meshes with a bevel gear 22 loosely mounted on a shaft 23. Keyed to the shaft 23 is a spur gear 24 which meshes with a rack 25 secured to the stationary frame portion 13 of the typewriter. As shown in Figure 3, a ratchet wheel 28, is rigidly secured to the shaft 23 and cooperates with a pawl 29 pivoted on the gear 22. This pawl is biased into engagement with the ratchet wheel 28 by means of a spring 30.

It should be noted that in the form shown, the sheet 15 is wider than the sheet 17, so that the margins of the sheet 15 may be engaged by the customary feeding rollers which cooperate with the platen. The sheet 17 however, is relatively narrow, so that it may slide around the platen 10 underneath the sheet 15, as it is not wide enough to be caught by the platen pressure rollers.

With this arrangement, the sheet 15, after a line has been typed thereon, the line being reproduced on the sheet 17 by means of the carbon 16, the sheet 15 may be line spaced by the mechanism normally provided on the typewriter for this purpose, generally during the return movement of the carriage. As the carriage returns, the gear 24 meshing with the rack 25 is rotated, and imparts this rotation to the shaft 23 and the ratchet 28.

Through the pawl 29 which engages the ratchet 28, the bevel gears 21 and 22 are rotated to drive the roller 19 and thus advance the sheet 17 for a distance commensurate with the length of the rack 25 which is engaged by the gear 24. Thus by changing the location of the rack 25 laterally, the distance through which the sheet 17 is moved by the return movement of the carriage may be readily adjusted.

During the forward movement of the carriage for the typing operation, the gear 24 again meshes with the rack 25 and rotates the ratchet 28. However, during this forward motion, the ratchet escapes under the pawl 29 without positively engaging the same, so that this motion of the shaft 23 is an idling motion, and no movement is imparted to the gears 21 and 22.

The rollers 19 and 20 are preferably mounted in an auxiliary frame 32 which may be conveniently supported by a pair of bolts 33 extending upwardly from the carriage portion 12, which may be the customary tabular bar. As shown in Fig. 5, a pressure bearing is provided for the shaft of the roller 20, and comprises a block 35 mounted in a slot 36 and biased by a spring 37, the compression of which is adjustable by means of a set screw 38.

In the form shown the sheet 17 is preferably a continuous web, and a supply roller 40 therefor is journaled in the frame 32. After passing around the platen 10 and being typed, the sheet 17 passes over a rotatable sleeve 41 on a shaft 42 carried by extensions 43 depending from the auxiliary frame 32. From this roller 32 the sheet 17 passes between the rollers 19 and 20 as described and passes out over the rear of the attachment frame.

The carbon sheet 16 is also preferably a continuous web, and a supply roller 45 is provided therefor. From this roller the carbon sheet 16 follows the copy sheet 17 around the roller 42 and between the rollers 19 and 20, but is rewound on a roller 46 journalled in the rear of the attachment frame 32. A sleeve 47 similar to the sleeve 42 is mounted thereabove, to guide the carbon and copy sheets entering the typewriting machine.

The supply rollers 40 and 45 are each provided with a friction brake such as shown in Figure 4. The shaft 50 has a conical end which enters a thrust block 51 mounted in a bore 52 in the attachment frame 32. A coil spring 53 is mounted in the slot 52 so as to bear against the shoe 51, and the compression of the spring is adjustable by a set screw 54.

The carbon sheet rewind roller 46 is preferably driven from the shaft of the roller 20 which is driven by engagement with the roller 19. In the form shown, a chain 55 passes over sprockets on the shafts of rollers 20 and 46. As shown in Figure 5, the sprocket 56 is loose on the shaft 57, and a collar 58 is adjustably secured on the shaft by a set screw 59. With this arrangement, the collar may be locked in position to cause the sprocket to bear against the hub of the roller 20 with a desired amount of friction. In this manner sufficient slippage is provided to allow for the increasing diameter of the roll of rewound carbon paper on the roller 20. Similar or other suitable driving means may be provided for the rollers 40 and 45, if desired.

The invention may be embodied in various modified forms within the scope of the appended claims.

I claim:

1. In combination with a typewriter having a main frame and a carriage, an attachment frame secured to said carriage, coacting pressure rollers journaled in said attachment frame, a rack secured to said main frame, a gear carried by said attachment frame, a ratchet driven by said gear, and means for driving one of said coacting pressure rollers from said ratchet.

2. In combination with a typewriter having a main frame and carriage, an attachment frame secured to said carriage, coacting pressure rollers journaled in said attachment frame, a rack secured to said main frame, a gear meshing with said rack, bevel gearing for driving one of said coacting pressure rollers, and a ratchet for driving said bevel gearing from said rack engaging gear.

3. In combination with a typewriter having a main frame and a carriage, an attachment frame secured to said carriage, coacting pressure rollers journaled in said attachment frame, a bevel gear rigid with one of said rollers, a rack secured to said main frame, a gear engaging said rack, a second bevel gear coaxial with said rack engaging gear and meshing with the other bevel gear, and a ratchet for driving said second bevel gear from said rack engaging gear.

4. In combination with a typewriter having a stationary frame with a carriage slidable thereon and a platen journaled in said carriage, an attachment frame secured to said carriage, coacting pressure rollers and a carbon rewind roller journaled in said attachment frame, a rack on said main frame, means cooperating with said rack for driving one of said coacting rollers independently of said platen, and means for driving said carbon rewind roller from the other of said coacting rollers.

5. In combination with a typewriter having a stationary frame with a carriage slidable thereon and a platen journaled in said carriage, an attachment frame secured to said carriage and having journaled therein a web supply roller, a carbon supply roller, coacting pressure rollers for drawing said web and carbon from said supply rollers around said platen, and a carbon rewind roller receiving carbon from said platen, a rack secured to said main frame, means independent of said platen and cooperating with said rack for driving one of said coacting pressure rollers, and means for driving said carbon rewind roller from the other of said coacting pressure rollers.

6. In combination with a typewriter having a frame, a carriage and a platen, means independent of said platen for moving a web therearound, cooperating rolling contact means on said carriage and frame actuated by movement of said carriage, and means for driving said web moving means from said rolling contact means comprising rotary drive transmission means between said rolling contact means and said roller, and means for idling said cooperating means during forward movement of said carriage.

7. In combination with a typewriter having a main frame, and a carriage, an attachment frame secured to said carriage, coacting pressure rollers journaled in said attachment frame, a rack carried by said main frame, a gear carried by said auxiliary frame and meshing with said rack, and means for driving one of said coacting pressure rollers from said gear comprising a gear rigid with the shaft of said roller, cooperating means on said main and auxiliary frames, and a one-way driving connection therefrom to said gear.

8. In combination with a typewriter having a frame, a carriage and a platen, means for moving a web therearound, cooperating rolling contact means on said carriage and frame actuated by movement of said carriage, and means for driving said web moving means from said rolling contact means upon return movement of said carriage for moving said web relative to the surface of said platen, and including means for preventing drive of said web moving means upon forward movement of said carriage.

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