

PATENT SPECIFICATION

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COMPLETE SPECIFICATION

DRAWINGS ATTACHED

Improvements in or relating to Apparatus for Feeding Continuous Stationery in Type-Writers or Like Machines

We, LAMSON PARAGON LIMITED, a British Company of Paragon Works, Canning Town, London, E.16., do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention relates to apparatus for feeding continuous stationery in typewriters or like machines and more particularly to a unit which can be readily assembled with the carriage of the typewriter or the like.

A stationery feed unit for a typewriter comprises a frame having laterally spaced side plates, a driving shaft and a support shaft extending between the side plates, endless bands provided with pin feed means for feeding the stationery being supported on said shafts and in driving connection with the driving shaft, a gear on the driving shaft meshing with a train of gears on one of the side plates, means on the side plates for engagement with a typewriter platen having a gear wheel capable of meshing with the gear train on the side plates, and means for detachably securing the unit to the carriage of a typewriter.

To enable the invention to be fully understood it will now be described with reference to the accompanying drawing in which Figure 1 is a front view partly in section of a unit according to one embodiment of the invention, and Figure 2 is a side view thereof.

As shown in the accompanying drawing the unit includes a frame assembly comprising two side plates (1, 2) connected by a tie rod (3). The lower end of each side plate has an aperture in which an end shaft portion of the platen roller (4) is assembled through the intermediary of bushes (5) which permit the platen roller to rotate

freely. The unit is assembled with a typewriter, by positioning the shaft portions (6) in supports (6a) provided on the carriage of the typewriter.

A support rod (7) extends transversely of the side plates, its opposite ends being rotatably mounted in bearings (8). This rod serves to support the drive sprockets (9) of a pair of endless band tractors each including an endless chain (10) carrying a series of feed pins (11) for engagement in a longitudinal row of feed apertures provided at the side edges of the webs which constitute the stationery assembly to be fed in the typewriter. The opposite ends of the endless bands are supported by idler sprockets which are rotatably mounted on a cranked support rod (12).

The drive sprockets (9) are keyed to the support rod (7) and the outer ends of the latter has a gear (13) fast thereon, meshing with a train of gears (13¹, 13² and 13³) mounted on the side plate (2), the train of gears being adapted for engagement with a gear (14) fast on the platen shaft such that rotation of the latter will transmit rotation to the rod (7) and thereby drive the endless tractors.

The sprockets of the endless bands are preferably adjustable along the support rods (7 and 12) to permit the position of the feed pins to be aligned with the feed apertures in the webs of stationery.

The unit when assembled with a platen is adapted to be mounted in the carriage of a typewriter in place of the usual platen, the latter being removed and the unit assembled by positioning the ends of the platen shaft (6) in the platen supports normally provided on the carriage. When assembled the side plates (1, 2) extend upwards of the platen and one or both of these is provided with a pivoted arm (15)

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formed with a latch or hook shaped end (16) for engaging a cooperating part on the typewriter.

A stationery assembly which may comprise two or more superposed continuous webs with inter-leaved carbons, is adapted to be fed over a pair of feed plates (17) round the platen and the leading ends of the webs fed under a guide plate (18) and beneath pivotally mounted gates (19) associated with the endless tractors. The feed apertures in the webs are positioned over the feed pins (11) to permit the webs to be assembled with the pins.

During the typing operation the platen will be mainly rotated in the usual way and this rotation will be transmitted through the gearing to the endless tractors which will accordingly be operated to feed the stationery assembly.

The guide plate (18) is secured to the gate of the left hand tractor (as seen in the drawings) and a stud (20) is provided engaging in a slot (20a) to permit the right hand tractor to be moved axially of the platen. As shown the gates (19) have depending portions (19a) extending beneath the guide plate (18) and projecting beyond its lower edge.

The connection between the drive sprocket and the rod may be such as to permit adjustment to enable the endless band to be moved by hand relatively to the rod to align the feed pins with the feed apertures in the stationery assembly, when the latter is longitudinally fed into the units.

The tractor unit may include a body portion having a drive sprocket 9 rotatably mounted at one end and an arcuate surface at the other end, an endless chain being wrapped round the sprocket and arcuate surface and carrying laterally extending brackets on each of which a feed pin 11 is mounted.

The drive sprocket 9 will be connected to the drive shaft 7 and the support rod 12 will extend through a transverse bore in the body of the tractor unit adjacent to the arcuate surface.

The gates 19 include plate like portions 22 formed with a longitudinal slot 23 through which the feed pins 11 are adapted to extend. The plates 22 are normally urged into operative position as shown in the drawing, by a spring the continuous stationery passing under the plates 22 and the feed apertures being urged into engagement with the feed pins by the pressure of the plate. The pressure imparted by the plates 22 to the stationery may be regulated by providing an eccentrically mounted disc mounted on an extension of the plates 22

and engageable with an adjacent portion of the body of the tractor unit such that the disc forms an adjustable stop to limit the inward movement of the plates 22 by the spring.

WHAT WE CLAIM IS:—

1. A stationery feed unit for a typewriter comprising a frame having laterally spaced side plates, a driving shaft and a support shaft extending between the side plates, endless bands provided with a pin feed means for feeding the stationery being supported on said shafts and in driving connection with the driving shaft, a gear on the driving shaft meshing with a train of gears on one of the side plates, means on the side plates for engagement with a typewriter platen having a gear wheel capable of meshing with the gear train on the side plates, and means for detachably securing the unit to the carriage of a typewriter.

2. A unit according to Claim 1 wherein a pair of endless band pin feed means is provided adjustably mounted on the said shafts for movement longitudinally thereof towards or away from one another, means being provided for securing said endless band feed means in any desired position of adjustment.

3. A unit according to either of the preceding claims wherein a pivotally mounted gate is provided for each endless band for maintaining the feed aperture in the stationery assembly in engagement with the feed pins.

4. A unit according to claim 3 wherein each gate is provided with an extension projecting beyond an end of the pin feed means so as to underlie a guide plate over which the stationery is adapted to be fed.

5. A unit according to Claim 4 wherein the guide plate is adjustable transversely of the unit.

6. A unit according to any one of the preceding claims wherein the means for detachably securing it to a typewriter carriage comprises an arm pivotally mounted on one or both side plates and engageable with a fixed part on the carriage.

7. A unit according to any one of the preceding claims wherein the lower ends of the side plates are formed with apertures in which the opposite ends of a typewriter platen are rotatably mounted.

8. A stationery feed unit for a typewriter substantially as described with reference to the accompanying drawing.

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formed with a latch or hook shaped end (16) for engaging a cooperating part on the typewriter.

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During the typing operation the platen will be mainly rotated in the usual way and this rotation will be transmitted through the gearing to the endless tractors which will accordingly be operated to feed the stationery assembly.

The guide plate (18) is secured to the gate of the left hand tractor (as seen in the drawings) and a stud (20) is provided engaging in a slot (20a) to permit the right hand tractor to be moved axially of the platen. As shown the gates (19) have depending portions (19a) extending beneath the guide plate (18) and projecting beyond its lower edge.

The connection between the drive sprocket and the rod may be such as to permit adjustment to enable the endless band to be moved by hand relatively to the rod to align the feed pins with the feed apertures in the stationery assembly, when the latter is longitudinally fed into the units.

The tractor unit may include a body portion having a drive sprocket 9 rotatably mounted at one end and an arcuate surface at the other end, an endless chain being wrapped round the sprocket and arcuate surface and carrying laterally extending brackets on each of which a fed pin 11 is mounted.

The drive sprocket 9 will be connected to the drive shaft 7 and the support rod 12 will extend through a transverse bore in the body of the tractor unit adjacent to the arcuate surface.

The gates 19 include plate like portions 22 formed with a longitudinal slot 23 through which the feed pins 11 are adapted to extend. The plates 22 are normally urged into operative position as shown in the drawing, by a spring the continuous stationery passing under the plates 22 and the feed apertures being urged into engagement with the feed pins by the pressure of the plate. The pressure imparted by the plates 22 to the stationery may be regulated by providing an eccentrically mounted disc mounted on an extension of the plates 22

and engageable with an adjacent portion of the body of the tractor unit such that the disc forms an adjustable stop to limit the inward movement of the plates 22 by the spring.

WHAT WE CLAIM IS:—

1. A stationery feed unit for a typewriter comprising a frame having laterally spaced side plates, a driving shaft and a support shaft extending between the side plates, endless bands provided with a pin feed means for feeding the stationery being supported on said shafts and in driving connection with the driving shaft, a gear on the driving shaft meshing with a train of gears on one of the side plates, means on the side plates for engagement with a typewriter platen having a gear wheel capable of meshing with the gear train on the side plates, and means for detachably securing the unit to the carriage of a typewriter.

2. A unit according to Claim 1 wherein a pair of endless band pin feed means is provided adjustably mounted on the said shafts for movement longitudinally thereof towards or away from one another, means being provided for securing said endless band feed means in any desired position of adjustment.

3. A unit according to either of the preceding claims wherein a pivotally mounted gate is provided for each endless band for maintaining the feed aperture in the stationery assembly in engagement with the feed pins.

4. A unit according to claim 3 wherein each gate is provided with an extension projecting beyond an end of the pin feed means so as to underlie a guide plate over which the stationery is adapted to be fed.

5. A unit according to Claim 4 wherein the guide plate is adjustable transversely of the unit.

6. A unit according to any one of the preceding claims wherein the means for detachably securing it to a typewriter carriage comprises an arm pivotally mounted on one or both side plates and engageable with a fixed part on the carriage.

7. A unit according to any one of the preceding claims wherein the lower ends of the side plates are formed with apertures in which the opposite ends of a typewriter platen are rotatably mounted.

8. A stationery feed unit for a typewriter substantially as described with reference to the accompanying drawing.

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PROVISIONAL SPECIFICATION

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This invention relates to apparatus for feeding continuous stationery in typewriters or like machines and more particularly to a platen unit which can be readily assembled with the carriage of the typewriter or the like.

According to the present invention a platen unit is provided comprising a platen roller having one or more pin feed means assembled therewith, the feed means being mounted on rods extending between laterally spaced members for a support on which the shaft of the platen roller is rotatably mounted and means being provided for driving said feed means from the platen shaft.

The feed means are mounted on a rod or rods extending in spaced parallel relation to the rotational axis of the platen, and in one arrangement the feed means are operated by gearing on the support and driven by a gear wheel which is secured to the shaft of the platen roller.

The pin feed means may comprise one or more endless tractor units including a band or chain provided with a series of projecting feed pins adapted to engage in a longitudinal row of feed apertures formed at a marginal edge of the continuous stationery. The endless band of the tractor is supported on sprockets or the like mounted on the rods extending between support plates located at opposite ends of the platen. Preferably the sprockets are adjustably mounted on the rods to permit their being adjusted longitudinally of the rods to enable the feed pins of the tractors to be correctly positioned for engagement with the feed apertures of the stationery.

According to one embodiment of the invention a platen unit comprises a platen roller mounted on a shaft including opposite end portions extending axially outwardly of the ends of the roller, each of these ends being rotatably mounted in a support consisting of a side plate extending normally to the rotational axis of the platen adjacent to the opposite ends thereof. A pair of rods extend transversely between the side plates in spaced parallel relation to one another and to the axis of the plate roller. A pair of pin feed devices are provided each in-

cluding a band or chain provided with projecting feed pins. The endless band is wrapped round a driving sprocket secured to the rod which is most remote from the platen roller and round an arcuate guide member mounted on the other rod. The said remotely positioned rod is rotatably mounted in the side plates and one end extends outwardly of the adjacent side plate and has a gear wheel secured thereto. This gear is adapted to be driven by a gear fast on the platen shaft through the intermediary of a suitable train of gears mounted on the said side plate, the arrangement being such that when the platen roller rotates the remotely positioned rod will be rotated in the same direction to impart a drive to the two tractors.

The drive sprockets and the arcuate guide members of the endless band are movable longitudinally of the rods on which they are mounted to enable the feed pins to be correctly positioned for engagement with the feed apertures in the stationery and by reason of this adjustment, stationery having different widths or having rows of feed apertures located at different transverse positions can be used with the platen unit. It will be understood that the drive sprockets and guide surfaces will be secured to the respective rods in the adjusted positions for example by a clamping screw.

Further, the connection between the drive sprocket and the rod may be such as to permit adjustment to enable the endless band to be moved by hand relatively to the rod to align the feed pins with the feed apertures in the stationery assembly, when the latter is longitudinally fed into the units.

If desired instead of providing an arcuate guide member for the endless bands the latter may be wrapped round two toothed sprockets one of which is a driving sprocket and the other an idler sprocket.

It will be understood that if desired pin wheels may be provided instead of endless tractors, the wheels being keyed to the rod which is driven from the platen. As in the case of endless tractors the pin wheels will be adjustably mounted for longitudinal movement with respect to the rods.

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