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STRIP FEEDING MEANS IN AUTOGRAPHIC REGISTERS

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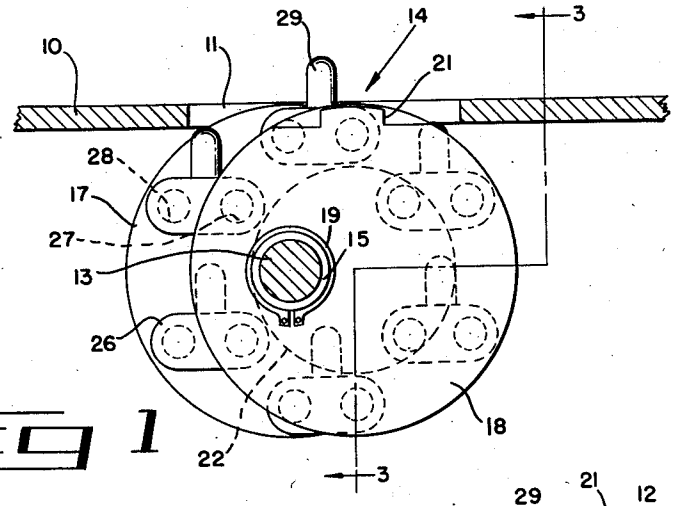


Fig 1

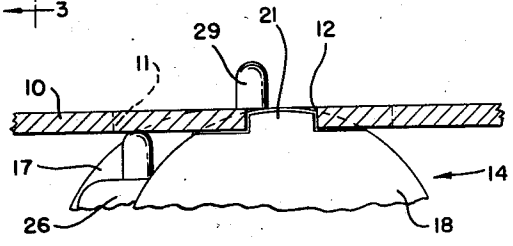


Fig 2

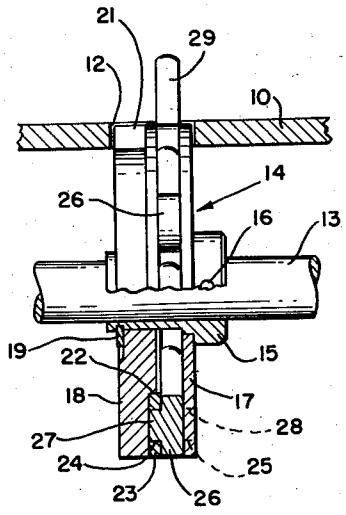


Fig 3

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STRIP FEEDING MEANS IN AUTOGRAPHIC REGISTERS

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8 Claims. (Cl. 271—2.3)

This invention relates to strip feeding devices, and particularly to pin feed mechanisms as used in the feeding of continuous manifold record strip material, for example, in the collating of such material and in the moving of such strip material through autographic registers, typewriting machines and the like.

The object of the invention is to improve the construction as well as the means and mode of operation of pin type strip feeding devices, whereby they may not only be economically manufactured, but will be more efficient in use, uniform in action and be unlikely to get out of repair.

A further object of the invention is to present a generally new pin feeding device of general utility in the fields defined and representing a new concept in the particular type of pin feed device shown.

Another object of the invention is to embody in the pin feeding device a construction and arrangement of parts providing for highly constant and accurate straight line movements of the feeding pins as they are successively engaged with and disengaged from the strip material.

Another object of the invention is to lend increased simplicity to devices of the kind described through a reduction in the number and complexity of parts normally required in the type of pin feed device shown.

Still another object of the invention, in this latter connection, is to utilize the table over which the strip material is advanced as a reactant means for the pin feeding device.

A further object of the invention is to provide a strip feeding device embodying the advantageous structural features, the inherent meritorious characteristics and the mode of operation herein set forth, or their equivalents.

With the above primary and other incidental objects in view as will more fully appear in the specification, the invention intended to be protected by Letters Patent consists of the features of construction, the parts and combinations thereof and the mode of operation, as hereinafter described or illustrated in the accompanying drawings, or their equivalents.

In the accompanying drawing, wherein is shown one but obviously not necessarily the only form of embodiment of the invention,

Fig. 1 is a fragmentary view in side elevation of a pin feeding device in accordance with the instant invention shown in assembled relation to a writing table or like strip support.

Fig. 2 is a fragmentary view in longitudinal section through the writing table, showing the manner in which it is used as a reactant member for the pin feeding device; and

Fig. 3 is a view in cross section, taken substantially along the line 3—3 of Fig. 1.

Like parts are indicated by similar characters of reference throughout the several views.

Referring to the drawings, there is shown a fragment of a table 10 which provides a support for the strip material and over which the strip material is passed in an overlying intimately contacting relation. The table 10 has a longitudinal slot or opening 11, one side of which has a recess 12 therein in effect constituting a second and parallel opening in the table. Extending in transverse underlying relation to the table 10, and to the openings 11 and 12 therein, is a shaft 13 suitably turned for actuation of the pin feeding means, as will hereinafter more clearly appear.

Beneath the opening 11 on the shaft 13 is a pin feeding device 14 and it will be understood in this regard that a strip feeding mechanism may have one or a plurality of such devices underlying respective openings 11 in the table.

The pin feed device 14 comprises a cylindrical sleeve 15 mounted on the shaft 13 and connected thereto as by a pin 16 for unison rotation. Secured to the sleeve 15, as by brazing, is a disc 17 concentric to the shaft 13. In side by side relation to the disc 17 is another disc or bearing plate 18 rotatably mounted on the sleeve 15 and held in place on the sleeve by a retaining ring 19. The disc or plate 18 is in the same medial horizontal plane as the disc 17 but is laterally offset therefrom. On the periphery of the plate 18 is a tang 21 and the plate is so positioned that the tang 21 is received in the recess or opening 12 in the plate 10. The recess 12 is of a size substantially to interfit with the tang 21 whereby rotary motion of the bearing plate 18 is prevented.

Concentric with the bearing plate 18 on that side thereof facing the disc 17 is a boss formation or hub 22. The hub 22 provides a bearing for an alignment ring 23 which is of the same diameter as the disc 17. The ring 23 is rotatable on the hub 22 and has an annular series of openings 24 in the side thereof facing the disc 17. A similar series of holes 25 is formed in the disc 17 near the periphery thereof.

The ring 23 is positionable to align respective holes 23 and 25 in horizontal planes parallel to each other and to the medial horizontal plane of the disc 17 and plate 18. The parts normally are held so positioned by interconnecting links 26 which at their respective ends have pivot studs 27 and 28 received in respective holes 24 and 25. The links 26 are arranged in a circular series and serve as mounts or bases for feeding pins 29 which stand erect on the links 26 between the ends thereof. Rotation of the shaft 13 turns disc 17 which is in turn effective, through the links 26, to turn ring 23. Throughout such rotary motion the pins 27 and 28 make constant adjustment in the holes 24 and 25 to maintain the parallelism of the links 26 and of the feeding pins 29. The construction and arrangement of parts, it will be understood, is such as to define an area of projection for the pins 29, relatively to the upper edges of the disc 17 and ring 23, coinciding with the location of the slot or recess 11. The pins successively enter the slot 11 in a straight line motion near one end thereof, move through the slot and are withdrawn, also substantially in a straight line motion, near the opposite end thereof.

The bearing plate 18 remains stationary during operation of the pin feeding device, since the tang 21 thereon is received in the recess 12 which thus makes of the table 10 a reactant member preventing displacement of the ring 23 relatively to the disc 17.

From the above description it will be apparent that there is thus provided a device of the character described possessing the particular features of advantage before enumerated as desirable, but which obviously is susceptible of modification in its form, proportions, detail construction and arrangement of parts without departing from the

principle involved or sacrificing any of its advantages.

While in order to comply with the statute the invention has been described in language more or less specific as to structural features, it is to be understood that the invention is not limited to the specific features shown, but that the means and construction herein disclosed comprise but one mode of putting the invention into effect, and the invention is therefore claimed in any of its forms or modifications within the legitimate and valid scope of the appended claims.

Having thus described my invention, I claim:

1. A strip feeding device, including relatively stationary means with respect to which the strip is advanced, a rotary shaft supported by said means, a disc concentric with said shaft and connected thereto for unison rotation, an alignment ring in a common medial horizontal plane with said disc but laterally offset therefrom, said ring surrounding said shaft and being in adjacent side by side relation to said disc, a circular series of links between said disc and said ring in parallel relation to one another, each of said links having one end pivotally connected to said disc and the other end pivotally connected to said ring, an upstanding feeding pin on each of said links between the ends thereof, and a bearing mounted on said shaft for relative rotary motion and anchored to said stationary means upon which said ring is rotatably mounted.

2. A strip feeding device according to claim 1, characterized in that said bearing includes a plate having on the periphery thereof a tang received in said relatively stationary means.

3. A strip feeding device, including relatively stationary supporting means, a pair of relatively rotatable disc elements in side by side adjacent relation to one another, one of said elements having a portion interengaging said supporting means, a bearing on said one disc facing the other one of said pair of discs and in the same medial horizontal plane as said other disc but offset laterally therefrom, a ring rotatable on said bearing, a circular series of links interposed between said ring and said other disc, said links being in parallel relation to one another and to said medial horizontal plane, each of said links being pivotally connected at one end to said other disc and at the other end to said ring, and an upstanding feeding pin on each of said links.

4. A strip feeding device, including a cylindrical sleeve, a disc on said sleeve concentric thereto and connected to said sleeve for unison rotation, a bearing plate on said sleeve in side by side relation to said disc and rotatable on said sleeve, a hub on said plate facing said disc in a common medial horizontal plane with said disc and offset laterally therefrom, an alignment ring of the same diameter as said disc rotatable on said hub, a plurality of links received between said ring and said disc in parallel relation to one another and to said medial horizontal plane, each of said links having one end pivotally connected to said disc and the other end pivotally connected to said ring, and an upstanding feeding pin on each of said links.

5. A strip feeding device according to claim 4, characterized by a tang on the periphery of said bearing plate serving as an anchor for the inhibiting of rotation of said plate.

6. A strip feeding device, including a table over which the strip is advanced, a shaft in transverse, spaced relation to said table, relatively rotatable discs on said shaft, feeding pins supported by said discs, said table having a slot to accommodate said feeding pins, a bearing mount rotatable on said shaft for one of said discs, and an anchor tang on said mount, said table having an opening receiving said tang.

7. A strip feeding device, including a table over which the strip is advanced, said table having an opening therein, a shaft in transverse spaced relation to said table substantially in line with said opening, a disc on said shaft concentric thereto and connected to said shaft for unison rotation, a bearing plate on said sleeve in side by side relation to said disc and rotatable on said shaft, a hub on said plate facing said disc in a common medial horizontal plane therewith and offset laterally therefrom, an alignment ring of the same diameter as said disc rotatable on said hub, a plurality of links received between said ring and said disc in parallel relation to one another and to said medial horizontal plane, each of said links having one end pivotally connected to said disc and the other end pivotally connected to said ring, an upstanding feeding pin on each of said links, said feeding pins having an area of projection substantially coinciding with the said opening in said table, and interengaging means on said bearing plate and said table inhibiting motion of said plate displacing said ring relatively to said disc.

8. A strip feeding device according to claim 7, characterized in that said last named means comprises a tang on the periphery of said plate receiving in another opening in said table.

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