

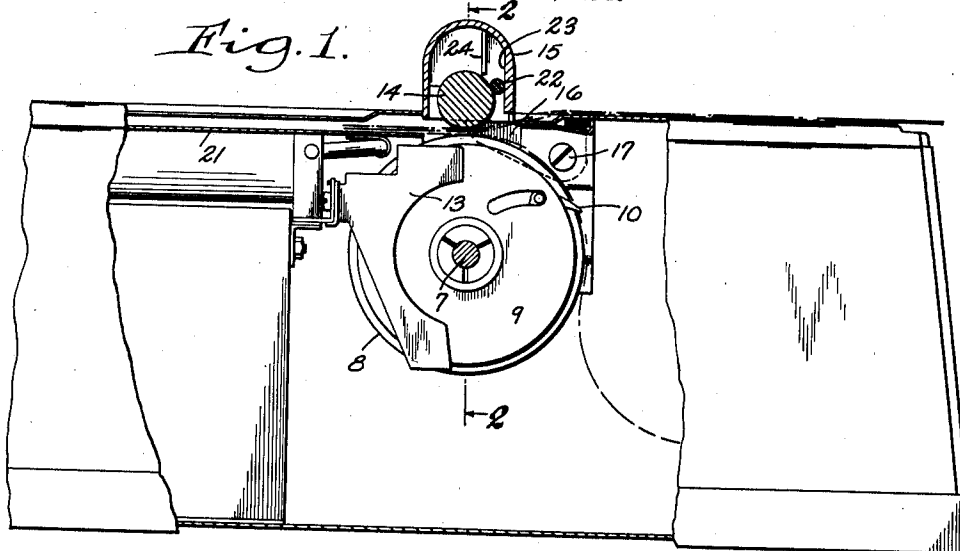
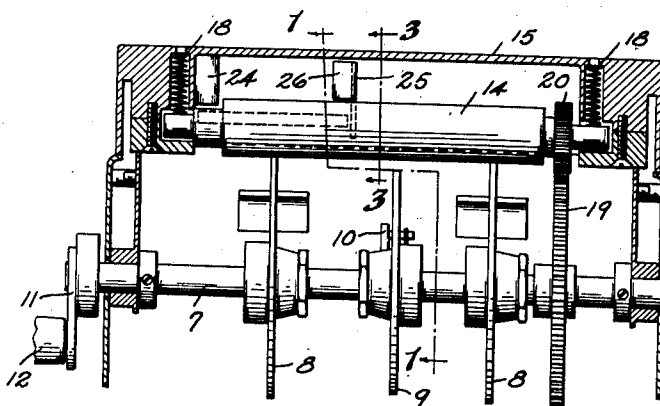
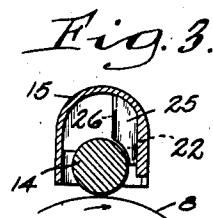
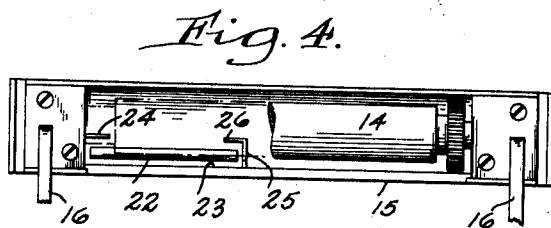
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2,270,730

FEED MECHANISM FOR AUTOGRAPHIC REGISTERS

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FEED MECHANISM FOR AUTOGRAPHIC
REGISTERS

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This invention relates to improvements in strip feeding mechanism and more particularly to improvements in that type of strip feeding mechanism utilized in writing machines, such as autographic registers and the like, for feeding the record strips into inscription receiving position.

It is a general object of the invention to provide a strip feeding mechanism for machines of the general class mentioned, and having an improved checking mechanism for preventing retrograde movement of the feeding means, or of the strips.

A more particular object of the invention is to provide in a strip feeding mechanism of the class mentioned, an improved checking mechanism cooperating with a feed roll to prevent retrograde movement thereof.

Another object is to provide for strip feeding means of the class mentioned, an improved checking means and mounting therefor in the feed roll carrier for cooperation directly with the feed roll to prevent reverse rotation thereof.

Other objects and advantages of the invention will be in part pointed out in the following detailed description of an illustrative but preferred embodiment of the invention, and will be in part obvious as the disclosure proceeds.

The invention accordingly comprises the features of construction, combination of elements, and arrangement of parts, which will be exemplified in the construction hereinafter set forth and the scope of the application of which will be indicated in the claims.

For a more complete disclosure of the nature, objects and advantages of the invention reference is had to the following detailed description of the illustrative embodiment, and to the accompanying drawing in which:

Fig. 1 is a side elevation of an autographic register embodying the invention, parts being broken away and in longitudinal vertical section substantially on the broken line 1—1 of Fig. 2, so as to disclose the mechanism more clearly;

Fig. 2 is a fragmentary vertical cross section taken substantially on the line 2—2 of Fig. 1, looking in the direction of the arrows, parts being shown in elevation;

Fig. 3 is a fragmentary detailed vertical section taken substantially on the line 3—3 of Fig. 2, looking in the direction of the arrows;

Fig. 4 is a bottom plan view of the roll housing with assembly parts; and

Fig. 5 is a perspective view of the feed checking roller.

The strip feeding mechanism herein disclosed is of the general nature set forth in the Sheppard et al. Patent No. 2,127,704 issued August 23, 1938, and the present invention relates to improvements over the patented device mentioned. The strip feeding mechanism includes a feed shaft 7

rotatably mounted in the casing of an autographic register and having thereon circular feed disks 8 and a strip folding disk 9 carrying a strip folding finger 10. All three of these disks are mounted on the feed shaft 7 for rotation as a unit therewith and are driven to effect strip feed by means of an outside crank arm 11 carrying an operating handle 12. A cam 13 engages a pin or roller carried by the strip folding finger 10 to effect operation thereof, as described in the Sheppard et al. patent mentioned.

A cylindrical feed roll 14 is rotatably mounted in appropriate bearings in a roll housing or carrier 15 mounted for swinging movement upon the autographic register by means of supporting arms 16 pivoted at 17. The feed roll 14 when in its normal operative position engages the narrow edges of the circular feed disks 8 and is yieldingly urged into engagement therewith by compression springs 18 mounted in the housing. The feed roll 14 is caused to rotate in unison with the feed roll by means of a toothed gear 19 mounted on and fixed to the feed shaft 7 and meshing with a toothed pinion 20 attached to the feed roll. Thus, when the main feed shaft 7 is rotated the feed roll 14 rotates in unison therewith being driven by the gears 19 and 20 and record strips or the like positioned between the feed disks and the feed roll are frictionally gripped and fed forwardly into writing position on the writing platen or table, such as indicated at 21. During this forward feeding movement of the strips the feed disks rotate in a clockwise direction as viewed in Fig. 1, and the feed roll 14 rotates in a counterclockwise direction.

In order to prevent retrograde or reverse rotation of the feed roll and feed disks at any stage of the strip feeding operation, a checking or detent device is provided. As shown, this checking device is mounted within the feed roll housing 15 adjacent to the feed roll 14, cooperating directly with the latter to prevent reverse rotation thereof, while, at the same time, permitting free rotation in a forward strip feeding direction. As shown, this checking device includes a rotary checking member 22 which in the embodiment shown is in the form of an elongated cylindrical roller mounted in free floating position within the roll housing 15. The roll housing has a wall with an inner surface 23 converging downwardly with the adjacent opposing periphery of the feed roll 14, thus providing a wedge-shaped space within which the checking roller 22 is normally operatively positioned by gravity. The diameter of the checking roller is somewhat greater than the minimum distance between the feed roll periphery and the adjacent converging surface 23 at the lower part of the wedge-shaped space.

By means of this arrangement the checking roller 22 will move or rotate idly when the feed

roll 14 rotates in its normal strip feeding direction, but it remains normally substantially in contact with the adjacent roll and wall surfaces shown in Fig. 1. However, any very slight movement of rotation of the feed roll in the opposite or reverse direction will cause the checking roller 22 to be wedged tightly against the periphery of the roll and the adjacent converging surface 23. During this checking action the surface of the feed roll frictionally engages that of the checking roller, thus tending to wedge the latter tightly into the wedge space between the roller and the wall, thus effectually checking the feed roll against movement in this direction. A very slight reverse rotation of the feed roll immediately wedges the checking roll 22 into checking position so that no appreciable reverse rotation of the feed mechanism is permitted. Reverse rotation of the feed disks 8 is also checked by the action of the checking roller 22, either through the frictional engagement of the disks with the feed roll or through the intermeshing gears 19 and 20, or through both of these means.

As best seen in Figures 1 and 4, the checking roller 22 is guided and maintained in its floating operative position by means of guiding and retaining members 24 and 25 that are preferably attached to the inner walls of the roll housing 15. The guiding and retaining member 25 extends across one end of the checking roller 22 and has a vertically disposed flange 26 extending in overlapping relation along the end portion of the checking roller. This provides a housing or space in which the checking roller is retained in its operative movements but prevents displacement thereof due to jolts of the machine, during raising of the roll housing 15 to inoperative position upon its supporting arms 16, or due to other causes. The checking roller 22 is thus maintained at all times in its free floating operative position and it automatically assumes by gravity its normal operative position, as shown in Fig. 1, after the roll housing has been inverted or swung to inoperative position on its supporting arms 16. The checking device is thus effectual at all times to check reverse rotation of the strip feeding mechanism. It is effective in use and silent in operation, avoiding the complication of the ratchet checking mechanism, such as shown, for example, in the Sheppard et al. patent mentioned.

As best seen in Figs. 1 and 3, the walls of the roll housing and carrier 15 are of increased thickness directly at the flat converging surface 23 that is engaged by the checking roller 22. This thickened wall structure provides sufficient strength and rigidity of the housing wall at this point for effectual checking action of the checking roller and, at the same time, the weight of the housing can be reduced and production costs lowered because the remainder of the housing wall can be made thinner.

Since certain changes may be made in the above construction and different embodiments of the invention could be made without departing from the scope thereof, it is intended that all matter contained in the above description or shown in the accompanying drawing shall be interpreted as illustrative and not in a limiting sense.

Having described my invention, what I claim as new and desire to secure by Letters Patent is:

1. In a strip feeding mechanism, in combination, a rotary feed member, a feed roll cooperating with said member to grip the strip for feeding the same, a feed roll housing in which said feed roll is mounted for rotation and having a part with an inner surface opposing the periphery of said feed roll and converging downwardly therewith, means for mounting said roll housing for movement into operative position in which the roll cooperates in strip feeding relation with said rotary feed member and into inoperative position, a rotary checking member mounted within said roll housing and interposed between the periphery of said roll and said converging inner surface, and urged by gravity between the roll and said inner surface so as to be wedged therebetween to prevent retrograde feed roll movement, said rotary checking member being unattached and in free floating position within said movable housing, and guiding and retaining members within said housing for guiding said checking member to checking position automatically when said roll housing is moved into operative position and for preventing displacement thereof from operative position.

2. In a strip feeding mechanism, in combination, a rotary feed member, a feed roll cooperating with said member to grip the strip for feeding the same, a feed roll housing in which said feed roll is mounted for rotation, said housing having a roll enclosing wall with a wall part of greater thickness than the other parts thereof, said wall part of greater thickness having an inner surface opposing the periphery of said feed roll and converging therewith, and an elongated checking roller mounted in unattached free floating position within said housing and extending along said feed roll between the periphery thereof and said converging inner surface, so as to be wedged therebetween to check the feed roll against reverse rotation.

3. In a strip feeding mechanism, in combination, a rotary feed member, a feed roll cooperating with said member to grip the strip for feeding the same, a feed roll housing in which said feed roll is mounted for rotation, said housing having a roll enclosing wall with a wall part of greater thickness than the other parts thereof, said wall part of greater thickness having an inner surface opposing the periphery of said feed roll and converging therewith, an elongated checking roller mounted in unattached free floating position within said housing and extending along said feed roll between the periphery thereof and said converging inner surface, so as to be wedged therebetween to check the feed roll against reverse rotation, means for mounting said roll housing for movement into operative position in which the roll cooperates in strip feeding relation with said rotary feed member and into inoperative position, and guiding and retaining members within said roll housing for automatically guiding said checking roller in its floating movements to roll checking position when said roll housing is moved into operative position and for preventing displacement thereof from operative position.

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