Dec. 10, 1940. J. C. WALKER 2,224,714

AUTOMATIC PRINTING ROLL CONTROL

Filed July 1, 1940 2 Sheets-Sheet 1

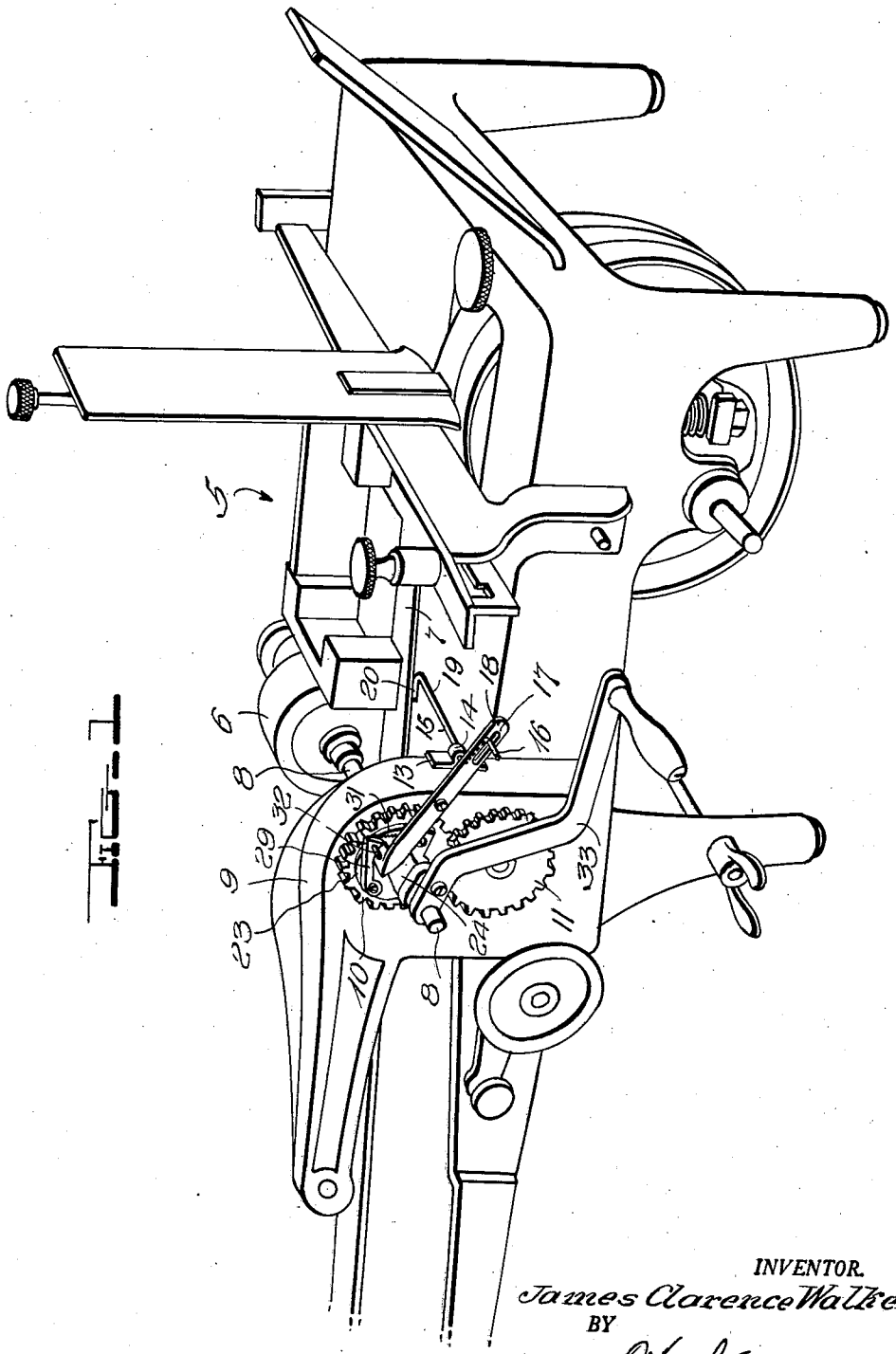


FIG. 1

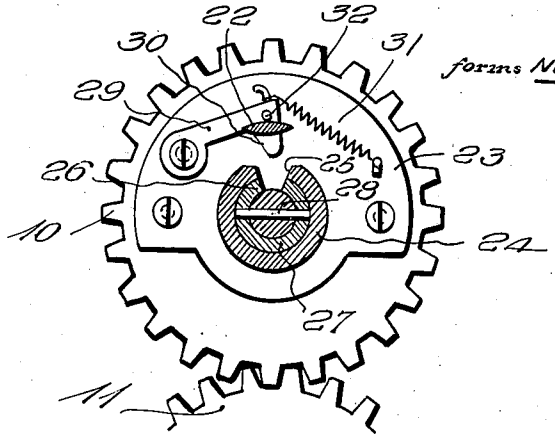
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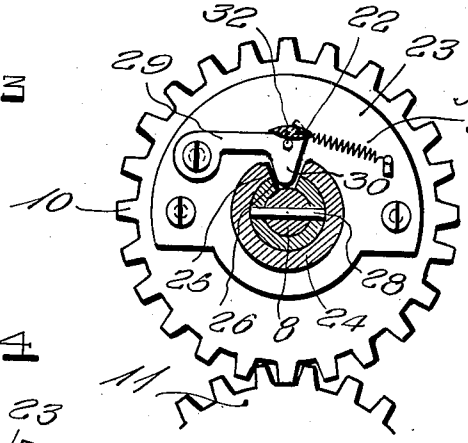
Filed July 1, 1940 2 Sheets-Sheet 2

FIG. 2



forms NOT in printing position

FIG. 3



forms IN printing position

FIG. 4

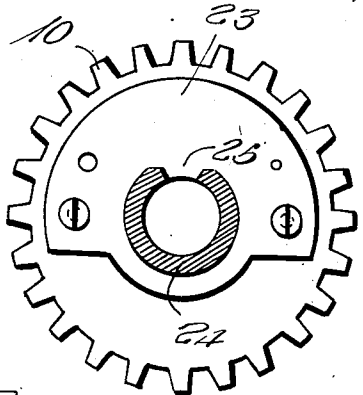


FIG. 5

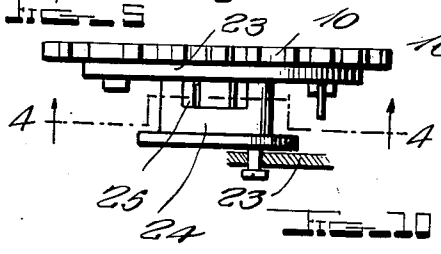


FIG. 6

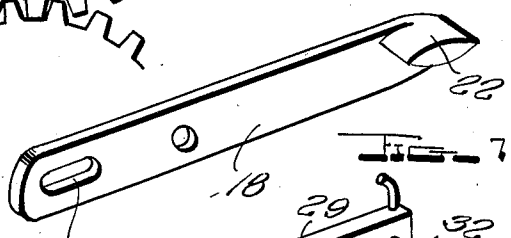


FIG. 7

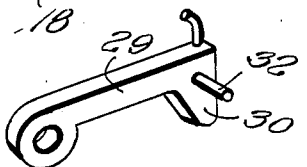


FIG. 8

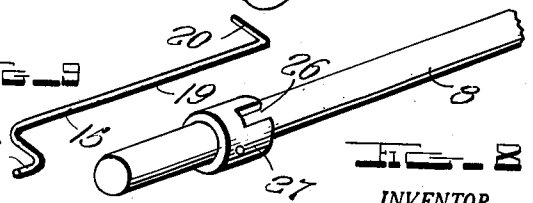


FIG. 9

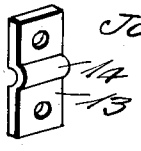


FIG. 10

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UNITED STATES PATENT OFFICE

2,224,714

AUTOMATIC PRINTING ROLL CONTROL

James C. Walker, New Orleans, La.

Application July 1, 1940, Serial No. 343,467

2 Claims. (Cl. 101—47)

My invention relates to addressing or combination addressing and printing machines, and particularly to the type wherein addresses and data to be printed is contained on a series of printing plates or devices, for instance, stencils, single message printing plates or stencils for repeat printing.

Ordinarily, in the operation of addressing machines of the above described character, it is necessary for the operator to closely and continuously observe the forms being fed into addressing position, during operation of the machine, so that when the automatic form feeding mechanism for feeding forms, such as envelopes, cards, notices, tags, statements, advertising matter, or the like fails to perform a feeding operation, the operator immediately stops the machine to preclude any stencils or plates from skipping a printing position. Thus, when the automatic form feeding mechanism fails to perform a feeding operation as stated above it becomes necessary for the operator to stop the machine and disengage the printing roll or platen by manual operation, and then cause the machine to operate one time in order to advance a form to printing position.

In some cases, for instance, large electric models, which are equipped with electric contact points for disengaging the clutch in the event that the machine fails to feed a form, the contact points operate to disengage the clutch. However, it is still necessary for the operator to actuate the printing roller or platen out of operation by some manual means, thus, allowing the electric motor to continue to operate the other parts of the machine one revolution to advance a form to printing position.

Furthermore, in other instances, the automatic form feeding device and printing roll is controlled by electrical or mechanical devices which function, through the medium of holes or other flag signals, in the addressing device as stencils or plates. However, so far as I am aware, the printing roll has never been controlled by the form to be printed.

Therefore, in view of the foregoing, it is one of the principal objects of my invention to provide a device for automatically causing the form to control the printing operation, whether the same be used in connection with manual, mechanical, or semi-automatically fed forms.

An important object of my invention is to provide means of the character described which is simple in construction, durable in use, efficient in operation and economical in manufacture.

Other objects and advantages will be apparent from the following description, appended claims and annexed drawings.

Referring to the drawings wherein like reference characters designate like parts throughout the several views:

Figure 1 is a perspective view of an addressing machine equipped with my invention.

Figure 2 is a side elevation, partly in section, of the mechanism which effects driving connection between the drive shaft and the driving sleeve.

Figure 3 is a view similar to Figure 2 and illustrating the drive shaft and driving sleeve in connected relation.

Figure 4 is a side elevation of one of the gears and illustrating the drive sleeve connected thereto.

Figure 5 is a top plan view, partly in section, of the parts illustrated in Figure 4.

Figure 6 is a perspective view of the lever.

Figure 7 is a perspective view of the pawl.

Figure 8 is a fragmentary perspective view of one end of the drive shaft.

Figure 9 is a perspective view of the feeler arm.

Figure 10 is a perspective view of the bracket in which the feeler arm is mounted.

In practising my invention, as illustrated in the drawings, I employ an addressing machine 5 of ordinary construction and which is equipped with a printing roller or platen 6 adjacent a bed 7 over which forms to be printed are fed in the usual manner. The printing roller 6 is fixed to a drive shaft 8, one end of which extends through a bearing housing 9 and has loosely mounted thereon a gear 10 meshing with a similar gear 11 for operating other parts of the machine in the usual manner.

I provide the bearing housing 9 with a bracket 13 formed with a bearing 14 in which is rotatably mounted one end of a feeler arm 15. Said end of the arm 15 is provided with an offset section 16 which is slidably mounted in a slot 17 formed in the lower end of a lever 18. The opposite end 19 of the arm 15 is provided with a right angular disposed section 20 which engages the forms as they are fed into printing position. Secured to the outer face of the gear 10 is a plate 23 provided with a sleeve 24 fashioned with a slot 25 for registry with a similar slot 26 formed in a collar 27, the latter being rotatably disposed within the sleeve 24 and fixed to the shaft 8 by means of a key 28.

Pivoted on the plate 23 is a pawl 29 formed with a detent 30 for seating within the slots 25 and 26 whereby to connect the sleeve 24 and

collar 27 together for unitary rotation. The pawl has connected thereto one end of a coil spring 31, the opposite end of said spring being connected to the plate. The spring 31 functions to normally maintain the pawl in connected relation with the sleeve 24 and collar 27 as clearly illustrated in Figure 3 of the drawings. Superjacent the detent 30, the pawl 29 has extending therefrom a pin 32 for engagement with the lug 22 on the upper end of the lever 18.

As illustrated in Figure 1 of the drawings, a crank 33 is connected to the sleeve 24 adjacent the gear 10 whereby the sleeve 24 is manually operated. However, it is to be distinctly understood that other means, for instance a motor or the like, may be connected to the sleeve 24 for automatically driving the same.

From the foregoing, it will be apparent that when forms are fed into printing position over the bed 7 they engage the section 20 of the arm 15 and actuate the latter in a manner to operate the upper end of the lever 18 to dispose the lug 22 above the pin 32 thus permitting seating of the detent within the slots 25 and 26 of the sleeve 24 and collar 27 as clearly illustrated in Figure 3 of the drawings. However, upon failure of a form to be fed over the bed, the arm 15 remains stationary causing the lug 22 to remain in position under the pin 32 whereby upon rotation of the gear 10 the detent of the pawl 29 is raised out of the slots 25 and 26 by said lug thus causing the gear 10 to rotate with respect to the shaft, as illustrated in Figure 2. Thus when the shaft 8 remains stationary no printing operation is performed by the printing roller 6.

From the foregoing, it will be apparent that I have provided a simple and efficient device capable of being easily applied to addressing machines and which functions to preclude "inking up" or smudging of the printing anvil and the skipping of stencils or plates. It will also be apparent that my invention lends itself to the increase in production speed of addressing machines, simplifies their operations, improves the quality of work produced, and makes it possible to utilize automatic form feeding devices on work that requires a high degree of accuracy for the reason that no stencil or plate is skipped when it should have addressed a form.

Without further elaboration the foregoing will so fully explain the invention that others may, by applying current knowledge, readily adapt the same for use under various conditions of service. Moreover, it is not indispensable that all the features of the invention be used conjointly since they may be employed advantageously in various combinations.

It is obvious that the invention is not confined to the herein described use therefor as it may be utilized for any purpose to which it is adaptable. It is therefore to be understood that the invention is not limited to the specific construction as illustrated and described as the same is only illustrative of the principles of operation, which are capable of extended application in various forms, and that the invention comprehends all construction within the scope of the appended claims.

What I claim is:

1. In combination with an addressing machine equipped with a printing device and a drive shaft for operating said device, a collar fixed on said shaft and formed with a slot, a plate having a sleeve rotatably mounted on said collar for driving the latter and formed with a slot, for registry with said first mentioned slot, a spring-pressed pawl pivotally carried by said plate and formed with a detent disposable within both of said slots for connecting said sleeve and collar together for unitary rotation, a lever pivotally mounted on said machine and having one end engageable with said pawl for maintaining said detent out of said slots to effect rotation of said sleeve with respect to said collar, and a feeler arm carried by said machine and movable solely by forms to be printed when fed to said device, said arm pivotally and slidably connected to the opposite end of said lever for actuating the first mentioned end of said lever out of engagement with said pawl and thus permit said detent to be disposed within said slot for connecting said collar and sleeve together for said unitary rotation.

2. The structure of claim 1 as set forth and defined therein including, power means connected to said sleeve for rotating the latter.

JAMES C. WALKER.