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L. JENSEN

AUTOGRAPHIC REGISTER

Filed July 29. 1926

2 Sheets-Sheet 1



Inventor:
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Fig. 5.

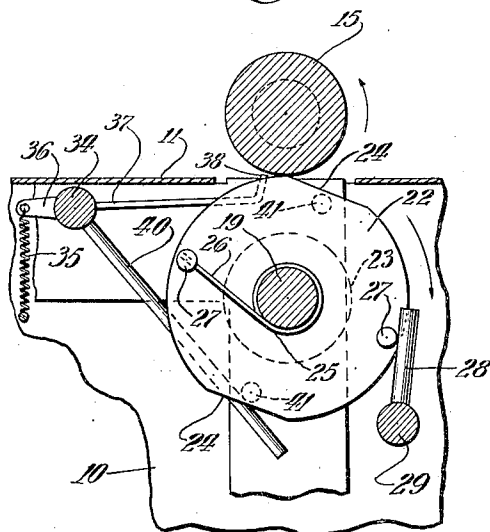


Fig. 6.

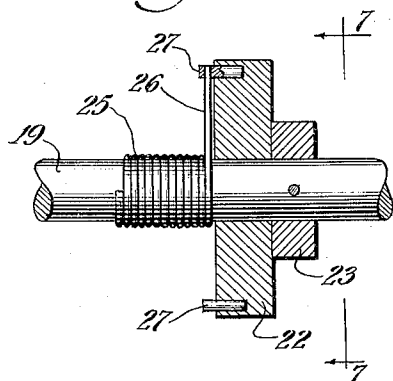


Fig. 7.

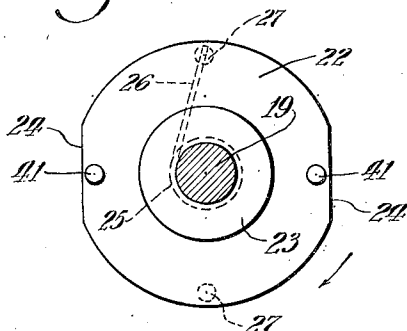
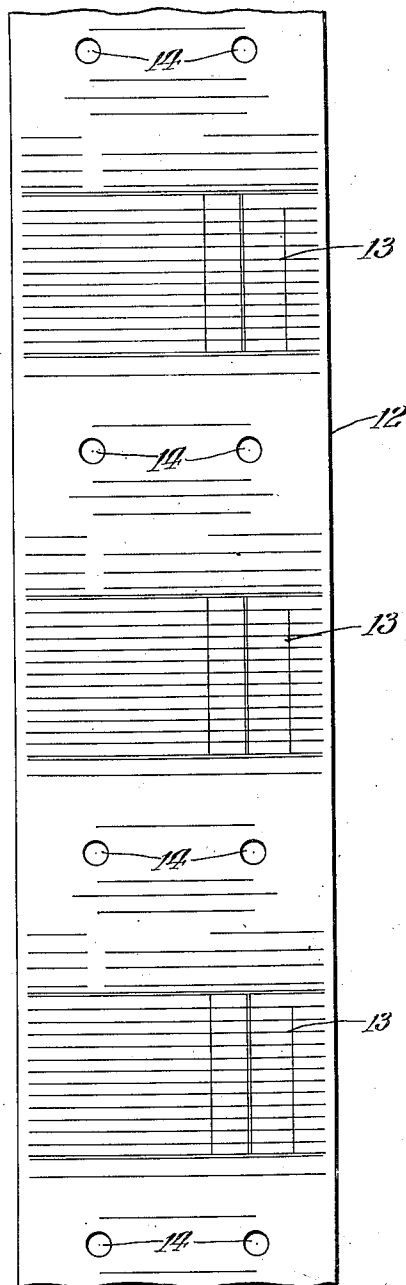


Fig. 8.



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UNITED STATES PATENT OFFICE.

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AUTOGRAPHIC REGISTER.

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My present invention relates to improvements in apparatus for feeding webs of material such as paper strips, and it has more particular reference to a machine of this character known as an autographic register. Specifically the present structure pertains to an autographic register that feeds out or moves paper strips that are provided with rows of spaced perforations or filing pin apertures that stop the feed of the strips when the normal feed devices are engaged therein, and my improvements have to do with the mechanism for initially feeding the strips, or re-starting the movement of the strips, in order to advance the apertured portions of the strips far enough to permit the normal feed devices to again become effective upon the strips. Such initial feed mechanism has become known as a "starter" or "re-starter", and such term is employed in the following description to designate the mechanism that initially advances the strips to move the apertured portion thereof out of registry with the normal feed rollers.

Among the objects of my invention is the provision of a "starter" mechanism that is adapted to be rendered operative to advance the strips by a simple operation of a key or lever and will be automatically rendered inoperative shortly after the normal feed devices have begun to advance the strips. Another object resides in providing a starter for autographic registers that is made from a few simple parts and is constructed so that it may be readily installed upon registers of divers types. Further objects are the provision of a structure of the character herein described that is dependable in operation, novel in construction, and economical to manufacture, so that it will not materially increase the production cost of the apparatus on which it is installed. Additional objects will be apparent after an understanding of my invention is had.

I prefer to carry out my invention and to accomplish the divers objects thereof in substantially the manner hereinafter fully described and as more particularly pointed out in the claims. Reference is herein made to the accompanying drawings that form a part of this specification in which;

Figure 1 is a vertical elevation of the upper portion of the discharge or delivery end

of an autographic register showing my improved starter device in connection therewith.

Figure 2 is a fragmentary vertical section taken on line 2—2, Figure 1, looking in the direction of the arrows, and diagrammatically illustrating the position of the starter when advancing the strip or strips.

Figure 3 is a diagrammatic view, similar to Figure 2, showing the position of the starter when inoperative during the advancement of the strip by the normal feed devices or when the latter are disengaged from the filing pin apertures of the strip.

Figure 4 is a diagrammatic view, similar to Figure 2, showing the manner of releasing the starter.

Figure 5 is a diagrammatic view, similar to Figure 2, showing the position of the starter immediately after it has been released and is ready to advance the strip.

Figure 6 is an axial section of the starter wheel in assembly with some of its associated parts.

Figure 7 is a face view of the structure in Figure 6 looking at the right side thereof.

Figure 8 is a face view of the portion of one of the strips that is used in the register herein disclosed.

The drawings accompanying this specification are in a sense schematic for the purpose of disclosing a typical or preferred embodiment of my invention, and in said drawings similar reference characters have been employed to designate the same parts wherever they appear throughout the several views.

The portion of the autographic register herein disclosed includes only the feed mechanism and consists of vertically disposed longitudinal side-walls 10 that are connected at their upper edges by a writing table or platen 11, said walls and platen forming the upper portion of a casing or housing in which the supply of webs is stored in either roll or folded pad form. The webs each comprise a strip 12 (Fig. 8) that usually has tickets 13 or other matter printed thereon and between the tickets the webs are punched to provide filing-pin apertures 14 for convenience in storing the tickets and the like when they have been severed from the strip. The apertures are arranged in

longitudinally disposed spaced rows so that there is preferably a pair of apertures for each ticket.

At the discharge end of the platen are located the normal feed devices in the form of upper and lower opposed rollers, the former being an elongated roller 15 the spindles at the ends of which are journaled in bearing-posts 16 that arise from the upper longitudinal corners of the register casing and one of said spindles has a gear 17 secured to it. The lower feed member is in the form of roller disks 18 mounted upon a drive spindle or shaft 19 that is journaled in the side-walls of the casing so that the same is in vertical alinement with and disposed below the roller 15, and said spindle or shaft 19 has a gear 20 secured to it that is larger than gear 17 and meshes therewith. The disks 18 are spaced apart a distance corresponding with the spacing of the longitudinal rows of apertures or perforations 14 in the strip, and as seen in the drawing the said disks are larger in diameter than the upper feed roller 15 in the same proportion as the large gear 20 is to the gear 17. Drive spindle or shaft 19 is rotated by means of a crank handle 21 secured to one of its ends that is extended through the casing wall and when said structure is operated the strips of paper will be advanced upon the platen 11 and discharged from the end of the apparatus until a set of perforations or apertures come into registry with the opposed peripheral portions of the upper and lower feed devices, whereupon the disks 18 will come into actual contact with the roller 15 through said apertures and further feed or advance of the strips will be stopped so that the discharged ticket or set of tickets may be torn off or severed from the strip or strips.

The starter mechanism is preferably mounted upon the drive spindle or shaft 19, and includes a feed-wheel 22 that is loosely mounted on the shaft 19 and is maintained against lateral displacement or longitudinal movement upon said shaft by a collar 23 secured to said shaft alongside the roller. The diameter of the wheel 22 is such that its periphery, which is roughened, will engage or co-operate with the surface of the upper feed roller 15 and will feed or advance the strip or strips which may be between them, and as said wheel 22 is intermediate the normal feed roller disks 18 it is adapted to engage the material in a plane that is between the rows of apertures in the latter and will therefore advance said material at a time when the normal feed devices are registered with the apertures and inoperative to move the material. It is not, however, desirable to maintain a continuous co-operation between the wheel and the upper feed roller because of the fact that the strips should stop after each ticket or set of tickets has been

advanced, and for this purpose the operating surface of the wheel is provided with one or more flat portions 24 that will space that portion of the wheel away from the feed roller 15, when said portion 24 is below the same. The wheel 22 is adapted to be intermittently rotated, and it is stopped between its movement with a flat portion below or adjacent the lower segment of the top feed roller 15, which position is diagrammed in Figure 3. In order to operatively connect the wheel with the drive spindle or shaft 19, there is provided a coiled spring 25 that surrounds and frictionally engages the shaft between the hub of the left-hand feed roller disk 18 (Fig. 1) and the wheel and the end of the spring adjacent said wheel 22 has a straight portion 26 that extends away from or is tangent to the shaft and is secured to one of a pair of stop pins 27 projecting from the adjacent face of the wheel. As the coiling or convolutions of the spring 25 extend opposite to the direction of rotation of shaft 19 and said spring is frictionally engaged with said shaft, the rotation of the latter will rotate the wheel until the latter is stopped by other means and thereafter permit the further rotation of the shaft.

The means for intermittently stopping the rotation of the starter wheel and permitting the further and continued rotation of the shaft, consists of a lateral pawl or finger 28 secured radially to a rock-shaft 29 extending from wall to wall of the casing and journaled therein with one end projecting outside the wall next the crank-handle 21 where it is provided with a depressible key 30. This finger 28 is normally in the path traveled in the pin 27 on the side face of the wheel, and the rock-shaft 29 is rendered automatically returnable by means of a coiled spring 31 loosely surrounding said shaft and connected at its opposite ends respectively to said shaft and to the adjacent casing wall in any suitable manner. When the key 30 has been depressed to rock shaft 29 the finger 28 will be moved out of the path of the adjacent stop-pin 27 and thereafter a rotation of drive spindle or shaft 19 will also rotate the wheel 22 due to the frictional engagement of the spring 25 with said shaft and its connection with the starter wheel. It will be noted there are shown two flattened portions 24 on the wheel, but this may be varied, and said flattened portions are arranged diametrically opposite each other. There are two stop-pins 27 that are positioned intermediately of the flattened portions so as to insure a half revolution of the wheel each time the same is rendered operative by the depression or setting of the key 30. Upon releasing the key, the rock-shaft 29 returns to its normal position (Fig. 2) where the finger will be in the path of

the next pin 27 which will arrest the rotation of the wheel 22, and the shaft 19 will continue to rotate within the coiled spring 25 while the normal feed devices (the upper feed roller 15 and the lower feed roller disks 18) will coact upon the paper to advance the same to the next set of apertures. The rocking of shaft 29 is limited by means of a pair of stops 32 projecting outwardly from the casing wall adjacent the hub of the key 30, between which stops a lug 33 on said hub is moved. Due to the frictional engagement of spring 25 with the drive-shaft 19 and the anchoring of one end of the spring to the wheel 22 the stoppage of the wheel and the continued rotation of said shaft will cause a slight unwinding of the convolutions of the spring adjacent the wheel and therefore a tensioning of the spring, so that when the wheel is released by the depression of the key said wheel will have a slight forward movement as seen by comparison of the relative positions as seen in Figures 4 and 5 so that the true circumferential or curved portion of the wheel will come into opposition to the upper feed roller 15. It will be appreciated that when the flattened portions of the wheel are opposite feed roller 15, that is when the wheel is not rotated, the said wheel is ineffective to advance the strips and the continued rotation of the drive shaft feeds out the strips until the roller disks 18 register with the strip apertures. The discharged ticket or set of tickets is then severed in the usual manner and the strips upon the platen may not be advanced until the starter-wheel has been set to render the same operative upon the strip by its coaction with the upper feed roller 15 and the rotation of said wheel 22 is sufficient to advance the strips far enough to permit the roller disks 18 to again take hold and advance the strips in the normal manner.

In the operation of a device of this character it is sometimes desirable to provide other means than the roller disks 18 to cooperate with the strip apertures to insure the stoppage of the strips and for this purpose there is provided a rod 34 that extends transversely from wall to wall of the register and is yieldably urged in one direction by a spring 35 that is connected at one end to the register casing wall and at its opposite end to an arm 36 on the adjacent end of said rod, as seen in Figure 5. Laterally disposed wires 37 project from rod 34 toward the feed mechanism and have upturned ends 38 that register with grooves or channels 39 formed in the upper feed roller 15. When the strips are being moved the upturned ends 38 of these wires are below the paper and press upwardly against the same until the strip apertures reach the roller disks 18 at which time the said upturned ends enter these apertures and pass upwardly into the

grooves 39 of the upper feed roller and assist in preventing of further movement or slippage of the strips. The upturned ends 38 are automatically withdrawn from the strip apertures upon a depression of the key, 70 which as before explained, will cause a slight forward rotation movement of the wheel. This withdrawal is accomplished by providing an oblique downwardly extending lever arm 40 on the rod 34 that is positioned 75 so that its free end portion is in the path of a pair of cam or eccentric pins 41 carried by the wheel 22 upon its face opposite its stop pins 27. When the wheel is stopped and inoperative upon the strips, one of the cam-pins 41 will be in a position to engage and depress the lever arm 40 upon the initial or set movement of the wheel and when said wheel is initially moved from its position in Fig. 4 to the position in Fig. 5 the respective cam-pin 41 will move the lever arm 80 down and cause the withdrawal of the upturned ends 38 of the wires from the strip apertures so that the strip or strips will be free to be moved or advanced in the manner hereinbefore explained. It may be added that reverse movement of the drive spindle or shaft 19 is prevented by providing a ratchet disk 42 upon one end of said shaft that is engaged by a suitable pawl 43 pivotally mounted upon the adjacent portion of 85 the casing wall.

What I claim is:—

1. Feed devices of strip material having longitudinal spaced apertures, comprising 100 normal feed members that become inoperative to advance the material when engaged in the apertures, and starter mechanism normally inoperative to advance the strip and consisting of a rotatable wheel having peripheral portions that intermittently disengage the wheel from the material, said wheel being actuated by the devices that 105 actuate said normal feed members, yieldable means secured to said wheel for effecting an operative relation between said wheel and certain of said normal feed members, and pins adapted to enter the apertures in the strip at the end of each feeding cycle, and means having operative connection with said 110 wheel for withdrawing the pins at the start of each feeding cycle.

2. Devices for feeding strip material having longitudinal spaced apertures, comprising 120 normal feed members that become inoperative to advance the material when engaged in the apertures, and starter mechanism consisting of a rotatable wheel the periphery of which is provided with active and inactive portions, and yieldable means secured to said wheel for effecting an operative relation between the active peripheral portion of said wheel and certain of the normal feed members, and pins adapted to enter the apertures in the strip at the end of each 125 130

feeding cycle, and means having operative connection with said wheel for withdrawing the pins at the start of each feeding cycle.

3. Devices for feeding strip material having longitudinal spaced apertures, comprising normal feed members that become inoperative to advance the material when engaged in the apertures, and starter mechanism consisting of a rotatable wheel the periphery of which is provided with a plurality of alternately arranged active and inactive portions, and yieldable means secured to said wheel for effecting an operative relation between one of the active peripheral portions of said wheel and certain of the normal feed members, and pins adapted to enter the apertures in the strip at the end of each feeding cycle, and means having operative connection with said wheel for withdrawing the pins at the start of each feeding cycle.

4. Devices for feeding strip material having longitudinal spaced apertures, comprising normal feed members that become inoperative to advance the material when engaged in the apertures, and starter mechanism consisting of a rotatable wheel the periphery of which is provided with active and inactive portions the former of which is positioned adjacent the material during normal advance thereof and yieldable means secured to said wheel whereby the active portion of the wheel is adapted to become operatively related to one of said normal feed members to advance the material when the normal feed members are engaged in the apertures, and pins adapted to enter the apertures in the strip at the end of each feeding cycle, and means having operative connection with said wheel for withdrawing the pins at the start of each feeding cycle.

5. Devices for feeding strip material having longitudinal spaced apertures, comprising normal feed mechanism that becomes inoperative to advance the material when engaged in the apertures, a rotatable wheel coactable with said feed mechanism to advance apertured portions of the material beyond the feed mechanism, said wheel having a flattened peripheral portion whereby to render said wheel inactive to advance the material, and yieldable means secured to said wheel for bringing the non-flattened portion of said wheel into active relation with respect to the material, and pins adapted to enter the apertures in the strip at the end of each feeding cycle, and means having operative connection with said wheel for withdrawing the pins at the start of each feeding cycle.

6. An initial feed or starter mechanism for autographic registers, comprising a feed roller, a rotatable shaft, a wheel loose on said shaft and the periphery of which is provided with portions that are active and

inactive with respect to said roller, means for imparting an initial rotative movement to said wheel independent of the rotation of said shaft, said means frictionally connecting said wheel to said shaft, and devices for stopping the rotation of said wheel with its inactive portion in opposition to said roller.

7. In an autographic register connecting normal feed roller members, a drive shaft for one of said members, a wheel loose on said shaft and the periphery of which is provided with portions that are active and inactive with respect to one of said normal feed members, means frictionally connecting said wheel to said shaft and adapted to impart initial movement to the wheel, and devices for stopping the rotation of said wheel with its inactive portion in opposition to said normal feed members whereby said normal feed members will continue to advance the material after the stoppage of said wheel.

8. In an autographic register coacting normal feed roller members, a drive shaft for one of said members, a wheel loose on said shaft and the periphery of which is provided with portions that are active and inactive with respect to one of said normal feed members, a spring frictionally coiled upon said shaft and having one end fixed to said wheel and adapted to impart initial movement to the wheel, and devices for stopping the rotation of said wheel with its inactive portion in opposition to said normal feed member, whereby said normal feed members will continue to advance the material after the stoppage of said wheel.

9. In an autographic register coacting normal feed roller members, a drive shaft for one of said members a wheel loose on said shaft and the periphery of which is provided with portions that are active and inactive with respect to one of said normal feed members, means frictionally connecting said wheel to said shaft, a stop on said wheel and adapted to impart initial movement to the wheel, and an element adapted to be projected into the path of movement of said stop whereby to discontinue the rotation of said wheel with its inactive portion in opposition to said normal feed members and permit said feed member to thereafter continue to advance the material.

10. An initial feed or starter mechanism for autographic registers, comprising a feed roller, a rotatable shaft, a wheel loose on said shaft and the periphery of which is provided with portions that are active and inactive with respect to said roller, and means connected with said shaft for imparting a rotative movement to said wheel independently of said shaft.

11. An initial feed or starter mechanism for autographic registers, comprising a feed roller, a rotatable shaft, a wheel loose on

said shaft and the periphery of which is provided with portions that are active and inactive with respect to said roller, means connected with said shaft for imparting a
5 rotative movement to said wheel independently of said shaft, and devices for stopping the rotation of said wheel by said shaft with its inactive portion in opposition to said roller.
10 12. A device for feeding strip material having longitudinal spaced apertures, comprising normal feed members that become inoperative to advance the material when engaged in the apertures, and a starter mechanism consisting of a rotatable wheel the
15 periphery of which is provided with active and inactive portions, and devices connecting one of said normal feed members with said wheel for effecting an operative relation between the active peripheral portion of said
20 wheel with another normal feed member, and including means whereby a rotative movement is imparted to said wheel independently of the normal feed member to which the latter is connected.
25 Signed at Chicago, in the county of Cook, and State of Illinois, this 25 day of June, 1926.

LOUIS JENSEN.