

March 8, 1938.

W. F. SIMONSON
RECORD STRIP REGULATOR

2,110,611

Filed June 18, 1929

2 Sheets-Sheet 1

Fig. 1.

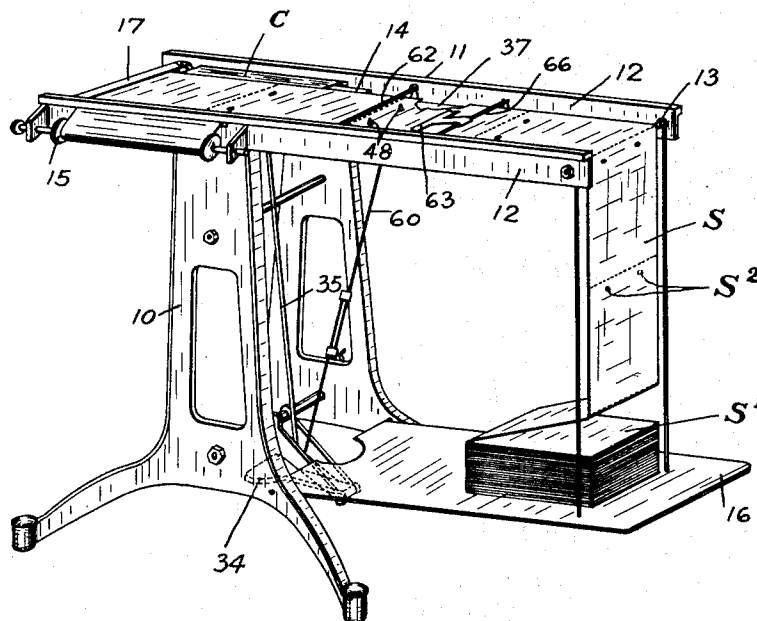


Fig. 3.

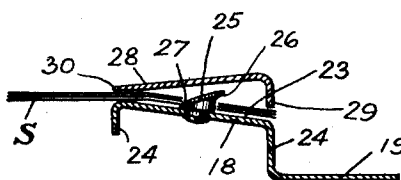


Fig. 2.

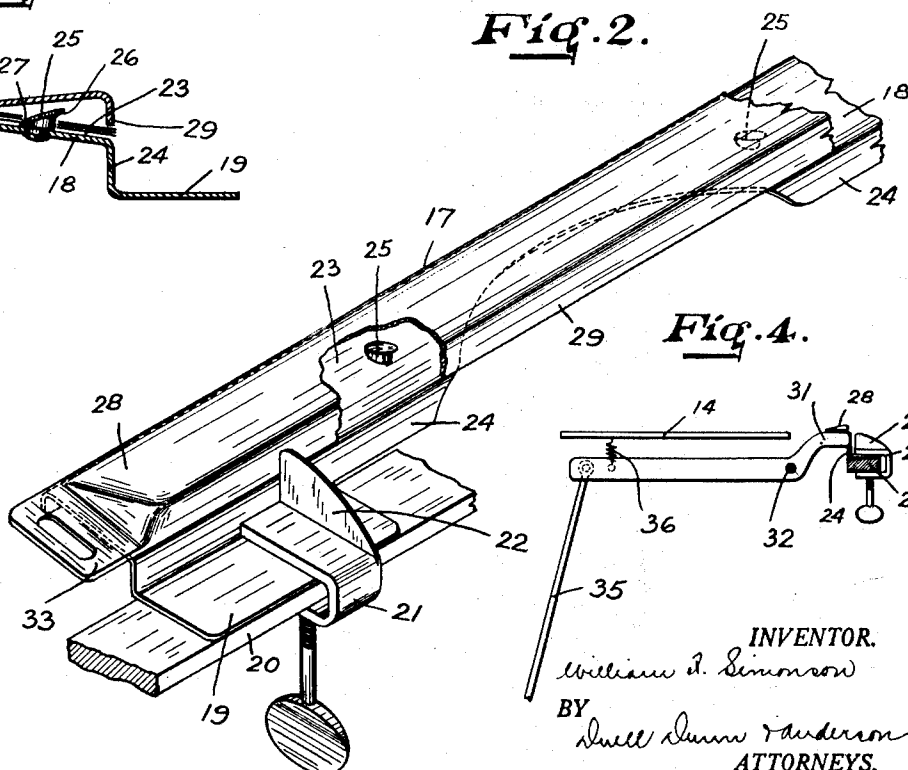
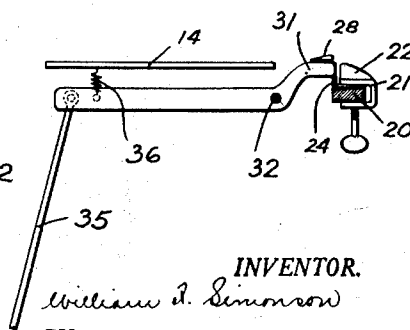


Fig. 4.



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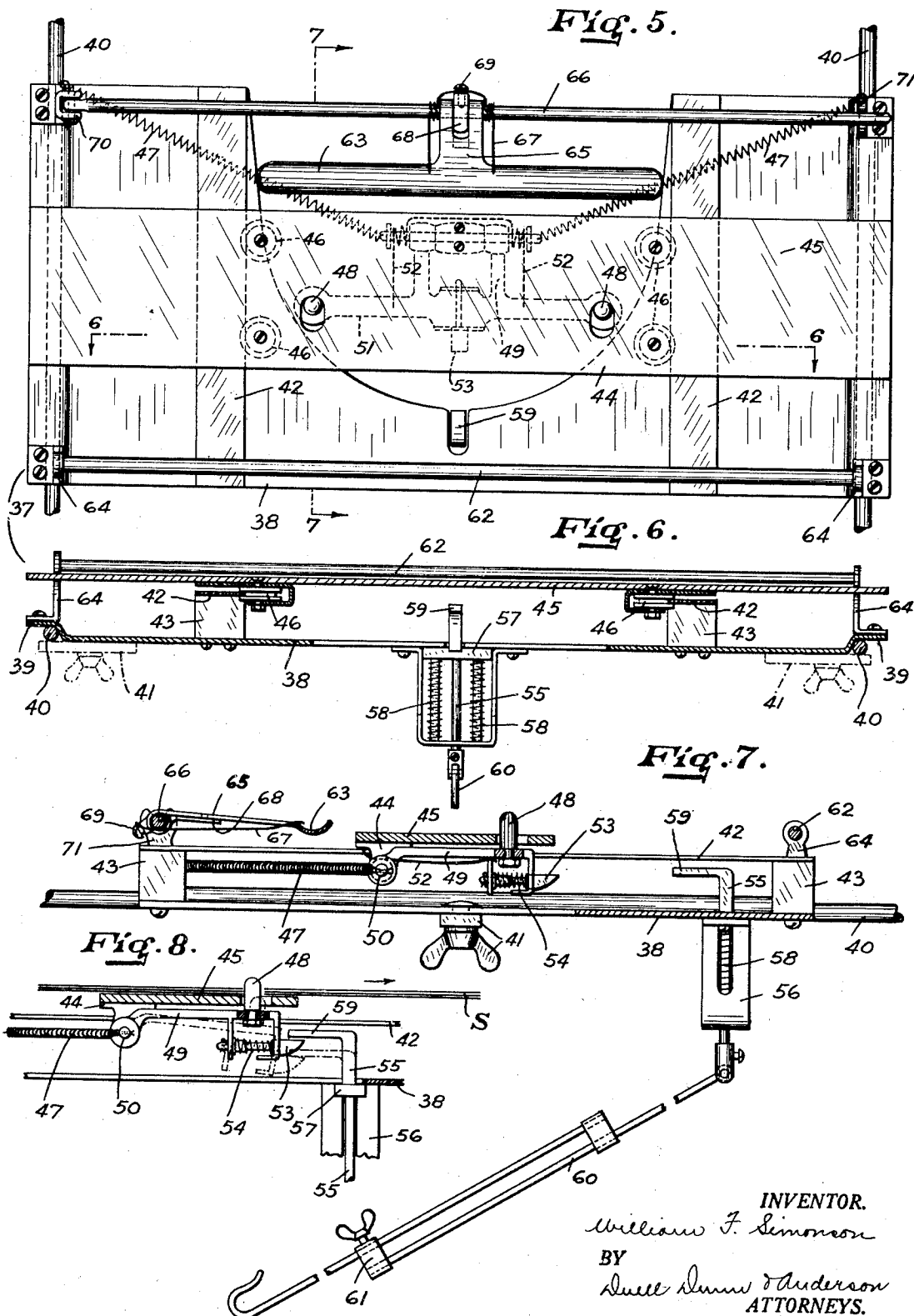
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2 Sheets-Sheet 2



UNITED STATES PATENT OFFICE

2,110,611

RECORD STRIP REGULATOR

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Application June 18, 1929, Serial No. 371,747

28 Claims. (Cl. 197—133)

This invention relates to improvements in billing or like manifolding machines wherein a plurality of relatively superposed record strips are usually employed and supported in position for the reception of inscriptions made, for example, by means of a typewriting machine. In some of its aspects the invention deals more particularly with improvements in mechanism for positioning and smoothing the record strips in the writing position thereof upon the platen of billing machines of the flat platen type.

It is a general object of the invention to provide, in machines of the class mentioned, an improved strip positioning and smoothing mechanism of simple construction and arrangement whereby a number of superposed record strips of the continuous traveler type having successive blank forms therealong, may be continuously maintained in correct position upon the writing platen and in smooth flat condition thereon avoiding creases, wrinkles, bulges, etc. in the paper record strips, and assuring clear, legible, manifold inscription upon all of the strips.

Another object of the invention is to provide, in machines of the class mentioned, strip positioning and smoothing mechanism having improved operating means whereby the record strips may be adjusted from one inscription-receiving position to another to bring fresh writing forms into position upon the writing platen with a minimum of effort and with little probability of failure to correctly position and smooth the strips, and to maintain them in such condition during the writing operation.

A further object is to provide, in machines of the class mentioned, an improved record strip positioning and smoothing mechanism whereby a yielding tension is exerted upon the strips in writing position, and embodying an improved and novel device for shifting the mechanism from one strip engaging position to another without the danger of displacing the record strips rearwardly or otherwise disaligning them.

Another object is to provide, in machines of the class mentioned, an improved strip positioning and smoothing mechanism including strip engaging pins yieldingly urged to effect strip smoothing action and being operable to disengage the strips by an improved operating mechanism, only when set in operative strip smoothing position.

Another object is to provide, in machines of the class mentioned, improved strip positioning and smoothing mechanism embodying strip engaging pins mounted in a novel and advantageous man-

ner, whereby they may be adjusted into strip disengaging position without binding in the strip apertures and with little danger of tearing or marring the paper.

A further object is to provide, in machines of the class mentioned, an improved mounting arrangement for the strip engaging, positioning pins whereby the latter may be operated into strip engaging and disengaging positions with certainty and with little effort on the part of the operator.

A further object is to provide, in machines of the class mentioned, an improved automatic operating means for the strip positioning and retaining mechanism which may be automatically set into operative position by adjustment of the strip, and automatically operated to disengage the strip upon operation of the strip releasing mechanism.

Another object is to provide an improved strip engaging pin and clamping arrangement whereby retrograde movement of the record strips is avoided.

Another object is to provide for billing machines or the like of existing construction, an improved strip positioning and smoothing attachment which can be applied to the machine with little effort and with little or no alteration thereof, and when so applied functions in combination with elements of the machine to effect smoothing and positioning of the record strip.

Other objects 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 in connection therewith.

The invention accordingly comprises the features of construction combinations 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 and objects of the invention, reference is had to the following detailed description and to the accompanying drawings, in which:

Figure 1 is a perspective view of a billing machine of the flat platen type embodying the invention;

Fig. 2 is an enlarged perspective view with parts broken away of an improved record strip restraining means or clamp positioned at the forward end of the billing machine;

Fig. 3 is a transverse vertical section through 55

the clamp or restraining means of Fig. 2 showing one of the strip engaging pins;

Fig. 4 is a fragmentary view of the operating connections for the clamping bar;

5 Fig. 5 is an enlarged plan view showing a detail of the improved strip positioning and smoothing mechanism positioned rearwardly of the platen;

Fig. 6 is a sectional view on the line 6—6 of Fig. 5 looking in the direction of the arrows;

10 Fig. 7 is a section on the line 7—7 of Fig. 5, and

Fig. 8 is a fragmentary sectional elevation showing the mounting and operation of the strip engaging pins.

It will be observed that the invention is disclosed as being applied to a billing machine of the flat platen type and it is especially well adapted for handling the class of work to which billing machines of this type are usually applied. Billing machines of this general type are well known in the art and need not be described in detail herein except to show the construction and cooperation of the improvements. Billing machines of this type are well adapted for heavy billing work particularly where relatively large numbers of continuous traveler record strips or work sheets, arranged in relatively superposed manifolded relation, are employed. The invention, as applied to such machines, greatly facilitates the handling and positioning of the record strips in correct, smooth, flat condition for the reception of the inscriptions. The invention, in the embodiment thereof herein disclosed, is capable of application to billing machines of existing construction to which it may be readily applied with little effort and with little alteration of the structure of the machine.

Referring to the drawings for a detailed description of the illustrative embodiment of the invention, a base or supporting framework is indicated generally at 10, at the upper part of which is arranged, in horizontal position, a supporting frame 11 including two parallel longitudinal frame members providing supporting rails 12. Suitable tie rods or bars, one of which is shown at 13, extend between the rails 12. These supporting rails constitute a track upon which a typewriting machine of known construction (not shown) may be mounted so as to move forwardly and rearwardly in line-spacing direction over the platen 14. It will be observed that the platen 14 is flat and provides a smooth surface for supporting the record strips S in relatively superposed position for receiving the inscriptions. By means of this arrangement, the type of the typewriting machine is enabled to strike upon the surface of the top record strip.

In order to duplicate the inscription upon the underlying record strips, suitable transfer sheets, such as the carbon sheets C, may be mounted in any preferred manner upon the machine such as by means of rolls or spools 15 mounted at the outside of the track rails 12. A relatively large number of record strips and carbon sheets may be accommodated in this manner. The record strips S are preferably, as shown, of the continuous traveler type fed from a zigzag supply pad S¹ carried by a supporting bracket or table 16 from which the strips are led into position upon the platen. The strips are preferably provided with longitudinal series of blank forms for receiving the inscriptions and are provided with apertures S² definitely positioned with reference to the blank forms forming the writing areas. Weakened severance lines between the successive sheets may be provided.

At the forward part of the machine relatively forwardly of the platen 14 is a strip retaining mechanism indicated generally at 17. This mechanism is of special improved construction and so arranged that it may be readily substituted for other strip holding means in machines of existing construction. To this end, a transverse strip guiding plate 18 is preferably provided with forwardly disposed clamping lugs 19, serving for attachment of the plate to a transverse member 20, or other part of the frame work, by means of screw clamps 21. Strip guiding lugs or flanges 22 may be attached to these clamps upstanding therefrom so as to engage with the edges of the record strips. The clamps may be adjusted toward or away from each other to accommodate strips of different width. The web of the guiding plate 18 may be inclined downwardly and forwardly forming an inclined guiding surface 23 for the strips. Forward and rearward flanges 24 serve to stiffen the guiding plate.

Strip engaging pins 25 are spaced to correspond to the spacing of the apertures S² and are mounted upon the guiding plate 18 so as to enter the strip apertures. These pins are preferably stationary and may be riveted or otherwise appropriately attached to the plate 18. As shown in Figs. 2 and 3, they are preferably mounted intermediate the limits of the inclined guiding surface 23. The forward or strip engaging faces of the pins are preferably hooked or similarly shaped to provide strip retaining lugs adapted to cooperate with the strips to prevent accidental disengagement from the pins. This may be effected by providing the upper forward projection or lip 26 overlying the strip engaging face of the pin. Thus, it will be seen that provision is made for preventing accidental disengagement with the pins when the walls of the apertures are pressed against the supporting surface of the pins.

The rearwardly disposed surface of each pin 25 may be upwardly and forwardly inclined as at 27 for facilitating strip disengagement when the strips are pulled forwardly. This inclined surface preferably begins near the base of the pin adjacent the surface 23 and is continued smoothly at an upward inclination over the forwardly projecting lip 26. Thus, when the strips are fed forwardly from the position shown in Fig. 3, they will be carried upwardly to disengaged position as the rearward walls of the apertures ride up the inclined surface, the clamping bar 28 being raised.

The clamp or strip restraining bar 28 co-operates in conjunction with the pins 25 to restrain the forwardly fed ends of the strips S against displacement. This clamping bar is preferably flanged downwardly at its forward edge as at 29, whereas the rear edge 30 thereof may be positioned to contact with the adjacent face of the record strips rearwardly of the pins. This construction provides a chamber for housing the pins 25 while forming a rigid construction for the bar itself. The lower edge of the flange 29 is positioned to engage the record strips to hold them in position forwardly of the pins. This edge also may function as a tearing edge across which the forwardly fed ends of the strips may be severed and to this end it is preferably positioned so as to register with the weakened severance lines when the strip apertures engage the pins.

For moving the bar 28 to strip releasing posi-

tions, swingable supporting arms 31 may be provided, pivoted as indicated at 32 to the frame of the machine, and attached to slotted supporting extensions 33 of the bar. These supporting arms may form a part of the standard construction of the billing machine, and the clamping bar is so formed as to be easily attached thereto. Operating movement may be transmitted to rock the arms 31 and the clamping bar 28 by means of the operating pedal 34, through a link 35, or any suitable operating connections which may form a part of the regular equipment of the billing machine. A tension spring 36 is preferably provided for returning the pedal and operating connections to normal strip clamping position following depression of the pedal for releasing the clamping bar and operating other parts of the mechanism.

Spaced from the forward strip controlling means 17, and positioned relatively rearwardly of the platen 14, is a second strip restraining and controlling mechanism indicated as a whole at 37. The strip control 37 is also preferably in the form of an attachment which may be applied in operative position to machines of existing construction with very little labor and effort, and with very little changes in the machine itself. The control mechanism 37, as shown, includes a lower frame or base plate 38 having off-set flanged lateral edges 39 providing grooves or channels for the reception of supporting rods or bars 40 which may form a part of the original machine and extend longitudinally and parallel to the rails 12. Screw clamps 41 may be attached to the base plate 38 so as to clamp the controlling mechanism in operative position. The strip controlling or restraining mechanism may thus be applied as a unit in operative position and it may be readily adjusted longitudinally so as to accommodate blank forms of different lengths or strips having different longitudinally spaced controlling apertures S². It will be noticed that the supporting rods 40 are positioned between the side frame members or rails 12 extending parallel to the latter and that the strip controlling unit 37 is thus disposed, when in operative relation, between said rails 12. It lies, therefore, in the path of the advancing strips S with the aligning pins 48 aligned respectively with the two series of control apertures S².

Spaced parallel guiding track rails or bars 42 are supported above the base plate 38 by means of supporting blocks 43, secured to the base plate. These tracks are shown in the form of flat, horizontal bars extending longitudinally of the machine and in parallel relation with the rails 12. They support a carriage 44 for reciprocation longitudinally of the machine. For this purpose, the top plate 45 of the carriage is provided on its underside with grooved rollers 46 with the grooves thereof engaging the edges of the guide rails 42. The carriage is thus restrained for longitudinal reciprocation adjacent to and substantially parallel to the path of the strip.

The carriage 44 is yieldingly urged rearwardly toward its rear terminal by means of tension springs 47 arranged in any preferred manner and attached to the carriage and to one or more stationary points of the strip controller 37. A convenient way of attaching these tension springs is to position them diagonally as shown, whereby the pressure thereof upon the carriage decreases rapidly as the latter moves toward the anchored ends of the springs. In this connection, it should be observed that the rearward

edge of the strip controlling unit 37 is disposed at the top of Fig. 5, and at the left of Fig. 7. The tension spring 47 therefore tends constantly to urge the carriage 44 toward the rear of the machine, thus exerting a yielding rearwardly directed stress upon the strips when the pins 48 are engaged in the strip apertures.

Strip engaging pins 48 adapted to engage in strip apertures S², are mounted upon the carriage 44 for longitudinal reciprocating movement therewith. There are preferably two of these strip engaging pins, or a different number may be utilized, if desired, and they are spaced to correspond with the lateral spacing of the strip apertures S². They may be mounted, as shown, at the underside of plate 45 extending upwardly through elongated apertures therein.

The pins 48 are also mounted for movement relatively to the carriage 44 as, for example, by means of a support 49. This support is preferably pivoted to the carriage as at 50 through a bracket attached to the carriage. This pivotal point is preferably positioned rearwardly of the pins 48 with reference to the direction of strip advancement, or forwardly of the pins with reference to the direction of the strip tensioning action under the influence of springs 47. The object of this positioning of the pivot 50 is more fully described below.

A transversely disposed supporting arm 51 forming a part of the support 49, carries the pins 48, and this arm and the pins are urged by means of a spring 52 to yieldingly move the pins upwardly into operative position, as shown in Fig. 7 and in full lines in Fig. 8.

A retractible pin operating lug or latch 53 is carried by a bracket on the underside of the pin support 49, being urged to extended or operative position, as shown in Fig. 7, by means of a compression spring 54 engaging a shoulder at the rear of the latch. This is a relatively light spring but of sufficient strength to thrust the latch forwardly after retraction thereof. The operating lug or latch 53 is provided with an inclined face at its underside but the top side thereof is flat, as shown.

An operating plunger or rod 55 for the pins 48 is slidably carried by a supporting bracket 57, mounted upon the underface of the base plate 38, being provided with a lug or cross-head 57, fixed thereto against which compression springs 58 engage so as to urge the operating plunger into upward operative position, as shown in Figs. 6 and 7. An angularly extending lug 59 is positioned at the upper end of the plunger 55 and is adapted to cooperate with the latch member 53 for effecting control of the pins 48. An operating link 60 having a sliding adjustment 61 for varying its length, connects the operating plunger 55 with the pedal 34.

Strip guides 62 and 63 are supported upon the base plate 38 of the strip controlling unit 37, lying below the plane of the upper ends of the pins 48 when in extended position, Figure 7, so as to guide the record strips into engagement with said pins. As shown, these guides are preferably positioned so that the lower surfaces thereof lie close to the upper surface of the plate 45 when the carriage 44 is adjacent the respective guides. The guide 62 is shown in the form of a transverse rod supported at its opposite ends by posts 64 spaced apart so as to admit the strips therebetween.

The guide 63 is preferably in the form of an elongated guide plate having a supporting arm 75

65 by means of which it is pivotally supported upon a transverse supporting rod 66. A spring 67 urges the guide 63 into its strip guiding position, as shown in Figs. 5 and 7, but excessive movement toward the strip is prevented by a stop lug 68 which may be anchored as by a screw 69 to the supporting rod 66. This arrangement limits its movement of the guide plate 63 toward the strip but permits retraction thereof against the resistance of spring 67.

The supporting rod 66 is pivotally supported at one end by a channel bracket 70 by means of a pin extending through an eye at the end of the rod. This not only supports the supporting rod 15 for pivotal movement but prevents rotation thereof whereby the guide plate 63 may be correctly positioned by action of the spring 67. The opposite end of the supporting rod 66 is supported in a bifurcated bracket 71 and a spring 20 catch may be provided for holding it in engaged position. This arrangement permits the supporting rod and guide plate 63 to be swung upwardly during threading of the record strips in position. A similar arrangement may be provided for the 25 guide rod 62, if desired.

The bracket supports 70 and 71 are arranged similarly to the supporting posts 64 and provide limiting stops for the carriage 44 so as to limit movement thereof in rearward direction. Suitable resilient bumpers may be provided on these 30 stops to cushion the impact of the carriage.

The objects and nature of the invention having been set forth, and an illustrative embodiment thereof disclosed in detail, the operation will now 35 be understood by those skilled in the art. For clearness and emphasis the operation may be summarized as follows:

As many relatively superposed record strips as desired may be loaded into the machine being 40 placed over the top plate 45 of the carriage and beneath the guides 62 and 63, and then led forwardly over the platen to the forward strip controlling device 17.

As the strips are thus fed forwardly they slide 45 over the tops of the pins 48, being guided into engaging position therewith by means of the forward and rearward strip guides 63 and 62. When the strip apertures come into alignment with the pins they are entered by the latter, continued advancement of the strips moving the carriage forwardly upon the rails 42 and placing the springs 47 under tension. When forwardly disposed strip apertures come into alignment with the forward pins 25, said pins are caused to enter the apertures. At this time the pedal 34 is depressed raising the retaining bar 28, but the pins 48 will not be retracted as will be made clearer later on. In entering the pins 25 in the strip apertures, the strips will usually be pulled forwardly 60 far enough and cause said apertures to pass forwardly slightly beyond the pins; the strips are then permitted to retract slightly under the action of the tension spring 47, thus causing the pins to enter the apertures and causing the strips to settle backwardly with the walls of the apertures against the forward hooked faces of the pins. This action causes the strips to be engaged with the pins 25 so as to prevent accidental removal and also places the portions of the record 70 strips, over the platen 14, under tension due to the action of springs 47. This causes the strips to be properly positioned over the platen and also smooths out any irregularities such as bulges, folds, wrinkles, and the like, causing the strips 75 to lie flat and smooth on the platen and against

the inter-leaved carbon sheet C. Clear, legible, manifold writing is thus assured. When the strips are positioned as just described, the pedal is released and the spring 36 causes the clamping bar 28 to descend. The operating plunger 55 and operating lug 59 are at the same time caused to rise by action of the springs 58.

At this time it will be observed that the carriage 44 is moved forwardly approximately to the position indicated in Fig. 8. Therefore, as the operating lug 59 rises it engages with the lower inclined face of the latch lug 53, causing the latter to retract against the resistance of spring 54. When the operating lug reaches its final upward position, as shown in full lines in Fig. 8, 15 the latch will be projected forwardly therebeneath. This is the normal writing position of the machine, the pedal being raised, the forward and rearward pins engaging the strip apertures, thus maintaining the record strip in correct writing position during writing operation which, in the form shown, may be done by means of the typewriter mounted upon the rails 12.

When the writing is completed and it is desired to sever the completed bills or the like from the record strips, the pedal 34 is depressed raising the retaining bar 28 and depressing the operating plunger 55, at this time overlying the latch 53, as described. The first result of this action is that the pins 48 are moved downwardly about the pivotal point 50 to the dot and dash line position shown in Fig. 8, thus withdrawing them from the strip apertures. The carriage 44 being thus relieved of restraint by the record strips moves rearwardly to initial position quickly under the action of springs 47 and may be checked in such position by the brackets 70 and 71. However, this rearward movement is not sufficient to bring the pins 48 into alignment with the next succeeding strip apertures. 40

The second result of pedal depression is that the clamping bar 28 is raised sufficiently to permit the strips to be disengaged from the pins 25 but the strips are not released by this movement due to the fact that they are held in engagement with the pins by means of the hooked engaging faces thereof. Thus, the strips cannot be displaced rearwardly by action of the springs 47. In other words, each pin 25 provides a primary strip restraining device and the clamping bar 28 50 provides a secondary strip restraining device. The secondary restraining device is thus released while the primary restraining device continues to hold the strips from becoming displaced or disaligned with each other during the rearward movement of the carriage 44 under the action of the springs 47, as above described. Release of the strips from the pins 25 may be effected after the carriage 44 is moved rearwardly by grasping the forward ends thereof and pulling them forwardly whereupon the apertures ride upwardly over the inclined surfaces 27 to disengaged position. Advancement of the strips is continued until the prepared bills project forwardly beyond the clamping bar 28 with the weakened lines 65 substantially in registry with the flange 29, and severance may be effected across the edge of said flange. During the last mentioned forward movement of the strips, the pins 48 will become engaged in the next succeeding strip apertures and the strip positioning and tensioning action already described, is repeated.

It will be observed that the carriage 44 is moved forwardly during depression of the pedal 34 and consequently the operating lug 59 is moved down- 75

wardly from the position of Fig. 7. In the final position of this forward movement of the carriage the latch 53 will overlie the lug 59 so that when the pedal is released the lug moves upwardly into operative position with reference to the latch, as already described. The latch 53 and lug 59 thus provide a coupling in the pin operating mechanism which is automatically set in operative position. Only in this position can the pins 48 be retracted by depression of the pedal. If, for example, the pedal be depressed when the parts are positioned as shown in Fig. 7, there will be no resulting retraction of the pins. The operating connections for controlling the pins are therefore normally inoperative but are set in operative condition when the carriage is moved forwardly as described into its operative position wherein it functions to tension and position the strips. The strip positioning unit 37 can be adjusted longitudinally on the supporting rods 40 to accommodate forms of different lengths and differently longitudinally spaced strip apertures. The parts may be thus positioned so as to bring the latch 53 and operating lug 59 in correct operative relation when the strips are in correct writing position on the platen, no matter what may be the length of form employed.

As stated, the pins are mounted upon the carriage for swinging movement with the pivotal point spaced longitudinally from the pins. With this relation, referring particularly to Figure 8, it will be noticed that the pins swing or are moved forwardly slightly in the direction of strip advancement during movement of pin retraction. This movement results in a freeing action of the pins with reference to the apertures, it being remembered that the pins are, at this time, yieldingly pressed against the walls of the apertures. Retraction of the pins is usually effected with a quick movement as the pedal is depressed, and this forward movement or freeing action of the pins thus takes place quickly and before corresponding opposing movement of the carriage can take place due to inertia of the latter. The result is that the pins free themselves more readily from the apertures and marring or tearing of the paper is effectively avoided.

In the foregoing disclosure the record strips S are stated to be separated from each other but arranged in relatively superposed formation. The improved strip controller or feeder, however, is equally well adapted for regulating and controlling fan folded record strips, that is, where the superposed strips are attached by folds along the longitudinal edges thereof in a manner well known in the art. If the fanfolded record strip is to be used, all that will be necessary to accommodate it is to provide a different form of support for the carbon transfer sheets arranged to support said sheets between the folds of the fanfolded strip, as well understood in the art.

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 drawings shall be interpreted as illustrative and not in a limiting sense.

It is also to be understood that the following claims are intended to cover all of the generic and specific features of the invention herein described, and all statements of the scope of the

invention which, as a matter of language, might be said to fall therebetween.

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

1. In a machine of the character described, in combination, a writing platen over which record strips may be fed and supported for reception of an inscription, strip restraining means positioned relatively forwardly of said platen, strip restraining means positioned relatively rearwardly of said platen, and mounted for forward and rearward adjustment, a single operating means for operating both of said forward and rearward strip restraining means into strip restraining position, or into strip releasing position so as to terminate strip restraint by said rearward restraining means while maintaining strip restraint by said forward restraining means, and means operatively connected for control by said single operating means only in a forward adjusted position of said rearward restraining means for adjusting the latter restraining means rearwardly of strip feed upon said termination of strip restraint thereby, while strip restraint is still exerted by said forward restraining means.

2. In a machine of the character described, in combination, a writing platen over which record strips may be fed and supported for reception of an inscription, strip restraining means positioned relatively forwardly of said platen, strip restraining means positioned relatively rearwardly of said platen, means yieldingly urging one of said strip restraining means away from the other when both means are in strip restraining position so as to smooth and tension the strips over the platen, a single operating means for operating both of said forward and rearward strip restraining means into strip restraining position, or into strip releasing position so as to terminate strip restraint by said rearward restraining means while maintaining strip restraint by said forward restraining means, and means whereby said operating means may operate one of said restraining means only in a predetermined position of the latter.

3. In a machine of the character described, in combination, a writing platen over which record strips may be fed and supported for reception of an inscription, strip restraining means positioned relatively forwardly of said platen, strip restraining means positioned relatively rearwardly of said platen, means yieldingly urging one of said strip restraining means away from the other when both means are in strip restraining position so as to smooth and tension the strips over the platen, a single operating means for operating both of said forward and rearward strip restraining means into strip restraining position, or into strip releasing position so as to terminate strip restraint by said rearward restraining means while maintaining strip restraint by said forward restraining means, means whereby said yielding means adjusts the respective restraining means away from the other upon said termination of strip restraint thereby, while strip restraint is being exerted by the other restraining means, and means embodied in said operating means for operating one of said restraining means only in a predetermined position of the latter.

4. In a machine of the character described, in combination, a writing platen over which record strips may be fed and supported for reception of an inscription, strip restraining means positioned relatively forwardly of said platen, strip restrain-

ing means positioned relatively rearwardly of said platen, means mounting said rearward restraining means for movement longitudinally of the strip path, yielding means tending to urge
 5 said rearward strip restraining means reversely of strip feed so as to smooth and tension the strip over the platen, a single operating means for operating both of said forward and rearward strip restraining means into strip restrain-
 10 ing position, or into strip-releasing position, said rearward restraining means being free for rearward movement independently of corresponding movement of said operating means, said forward
 15 restraining means including a primary restraining device and a secondary restraining device, means whereby said single operating means simultaneously releases said secondary restraining
 20 device and said rearward restraining means, while maintaining strip restraint by said forward primary restraining device, and means whereby said yielding means thereupon causes rearward
 25 adjustment of said rearward restraining means while said secondary restraining device is held released by said operating means and the strip is held by said primary device.

5. In a machine of the character described, in combination, a writing platen over which record strips may be fed and supported for reception of
 30 an inscription, strip restraining means positioned relatively forwardly of said platen, strip restraining means positioned relatively rearwardly of said platen, a carriage mounting said rearward
 35 restraining means for movement longitudinally of the strip path and for pivotal movement transversely thereof, yielding means tending to
 40 urge said rearward strip restraining means reversely of strip feed so as to smooth and tension the strip over the platen, and means for terminating strip restraint by said rearward restraining
 45 means while maintaining strip restraint by said forward restraining means.

6. In a machine of the character described, in combination, a writing platen over which record strips having positioning apertures may be fed
 45 and supported for reception of an inscription, strip restraining means positioned relatively rearwardly of said platen and including strip aligning pins, a support for said pins, mounting
 50 means mounting said support for angular movement into strip disengaging position and for translatory movement to effect strip alignment, yielding means opposing the angular movement
 55 of said pins, and yielding means opposing the translatory movement of said pins.

7. In a machine of the character described, in combination, a writing platen over which record strips may be fed and supported for reception of
 60 an inscription, strip restraining means positioned relatively forwardly of said platen, strip restraining means positioned relatively rearwardly of said platen, means resiliently urging said forward
 65 and rearward restraining means apart when both are in strip restraining position so as to smooth and tension the strip over the platen, means whereby forward strip movement moves one of
 70 said strip restraining means in opposition to said resilient means, common operating means for both of said forward and rearward strip restraining means including normally inoperative means
 75 for terminating strip restraint by said last mentioned strip restraining means, and means controlled by said opposing movement of the restraining means for setting said normally inoperative operating means in operative position.

8. In a machine of the character described, a

writing platen over which record strips having inscription areas and positioning apertures definitely related to said areas may be fed and supported for reception of an inscription, strip restraining means positioned relatively forwardly
 5 of said platen, strip restraining means including aperture engaging pins positioned relatively rearwardly of said platen, yielding means urging said pins when engaging the strip apertures away from
 10 said forward restraining means so as to smooth the strips over the platen, means whereby forward strip movement moves said pins in opposition to said yielding means, common operating
 15 means for both of said forward and rearward strip restraining means including normally inoperative means for withdrawing said pins from strip engagement, and means controlled by said
 20 opposing movement of the pins for setting said normally inoperative operating means in operative position for withdrawing the pins from strip engagement.

9. In a machine of the character described, in combination, a writing platen over which record strips may be fed and supported for inscription
 25 reception, strip restraining means positioned relatively forwardly of said platen, strip restraining means positioned relatively rearwardly of said platen, means for operating said strip restraining means in coordination with each other, means
 30 whereby one of said strip restraining means is yieldingly urged to effect tensioning and smoothing of the strip, and means whereby said last mentioned strip restraining means may be released from strip engagement by said operating
 35 means only when the latter strip restraining means is in a predetermined strip tensioning and smoothing position.

10. In a machine of the character described, in combination, a writing platen over which record strips having inscription forms therealong
 40 may be fed and supported for inscription reception, strip restraining means positioned relatively forwardly of said platen, strip restraining means positioned relatively rearwardly of said platen, means for operating said strip restraining means
 45 in coordination with each other, means whereby one of said strip restraining means is yieldingly urged to effect tensioning and smoothing of the strip, means whereby said last mentioned strip restraining means may be released from strip
 50 engagement by said operating means only when the latter strip restraining means is in a predetermined strip tensioning and smoothing position, and means for mounting said last mentioned strip restraining means for longitudinal movement
 55 relative to the other restraining means for the accommodation of forms of different lengths.

11. In a machine of the character described, in combination, a writing platen over which record strips having inscription areas and positioning
 60 apertures definitely related to said areas may be fed and supported for inscription reception, a pin positioned relatively forwardly of the platen and adapted to enter strip apertures, a pin positioned relatively rearwardly of the platen and adapted
 65 to enter strip apertures, a strip restraining bar movably mounted near said forward pin for controlling strip engagement with the latter, means for mounting said rear pin for yieldingly resisted movement and to exert yielding tension and
 70 smoothing action upon the strip, and operating means for controlling said restraining bar and said movable rear pin in coordinated relation.

12. In a machine of the character described, in combination, a writing platen over which

record strips having positioning apertures may be fed and supported for inscription reception, a pin positioned relatively forwardly of the platen and adapted to enter strip apertures, a pin positioned relatively rearwardly of the platen and adapted to enter strip apertures, a strip restraining bar movably mounted near said forward pin for controlling strip engagement with the latter, means for mounting said rear pin for yieldingly resisted movement and to exert yielding tension and smoothing action upon the strip, operating means for controlling said restraining bar and said movable rear pin in coordinated relation, and means whereby said operating means may withdraw said movable rear pin from aperture engaging position only when the pin is in predetermined strip tensioning position.

13. In a machine of the character described, in combination, a writing platen over which record strips having positioning apertures may be fed and supported for inscription reception, a pin positioned relatively forwardly of the platen and adapted to enter strip apertures, a pin positioned relatively rearwardly of the platen and adapted to enter strip apertures, a strip restraining bar movably mounted near said forward pin for controlling strip engagement with the latter, means for mounting said rear pin for yieldingly resisted movement and to exert yielding tension and smoothing action upon the strip, operating means for controlling said restraining bar and said movable rear pin in coordinated relation, and means whereby said operating means may withdraw said movable rear pin from aperture engaging position only when the pin is in predetermined strip tensioning position, one of said pins being mounted for longitudinal movement whereby it may be secured in different relative longitudinal positions so as to accommodate forms of different length.

14. In a machine of the character described, in combination, a writing platen over which writing strips having positioning apertures may be fed and supported for reception of an inscription, a pin positioned relatively forwardly of said platen and adapted to enter strip apertures, and being hooked at the strip engaging side thereof for retaining the strip in engagement therewith, a pin positioned relatively rearwardly of the platen and adapted to enter strip apertures, a strip restraining bar movably mounted near said forward pin for controlling strip engagement with the latter, means for mounting said rear pin for yieldingly resisted movement and to exert yielding tension upon the strip, and operating means for controlling said restraining bar and said movable rear pin in coordinated relation so as to release the rear pin from strip engagement while the hooked side of the forward pin still engages the strip.

15. In a machine of the character described, in combination, a writing platen over which record strips having positioning apertures may be fed and supported for inscription reception, a pin positioned relatively forwardly of the platen and adapted to enter strip apertures, a pin positioned relatively rearwardly of the platen and adapted to enter strip apertures, a strip restraining bar movably mounted near said forward pin for controlling strip engagement with the latter, a supporting carriage for said rearward pin movable longitudinally of the strip path, means for mounting the rearward pin on said carriage for movement into strip engaging and disengaging positions, means yieldingly urging

said supporting carriage to exert tensioning and smoothing action on the strip, means whereby the pin engages an aperture when the strip is fed forwardly thus moving the carriage forwardly against said yielding means, normally inoperative operating means for disengaging said movable pin from the strip apertures, and means controlled by forward movement of said carriage to set said operating means in operative position.

16. In a machine of the character described, in combination, a writing platen over which a record strip having apertures may be fed and supported for the reception of an inscription, a pair of strip aligning pins positioned relatively forwardly of the platen for engagement with strip apertures and having hooked strip retaining faces, strip retaining means for holding the record strip adjacent said aligning pins, rearwardly positioned pins mounted for yielding movement longitudinally of the strip path and adapted to engage strip apertures when said first mentioned pins are in engagement with other apertures so as to hold said strip in engagement with said hooked faces, common operating means for releasing said strip retaining means from retaining position and for releasing said yielding pins from strip engagement, and means whereby said operating means can release said pins only when the latter are in a predetermined operative strip tensioning position.

17. In a machine of the character described, in combination, a writing platen over which a record strip having apertures may be fed and supported for the reception of an inscription, strip restraining means positioned relatively forwardly of the platen, pins adapted to engage said strip apertures, a support mounted for yielding movement longitudinally and rearwardly of the strip path so as to tension said strip, and means for mounting said pins upon said support for movement to disengage said apertures with a freeing action forwardly with reference to strip advancement.

18. In a machine of the character described, in combination, a writing platen over which a record strip having apertures may be fed and supported for the reception of an inscription, strip restraining means positioned relatively forwardly of the platen, pins adapted to engage strip apertures, a support mounted for yielding movement longitudinally of the strip path, and means for mounting said pins upon said support for forward swinging movement relatively to strip advancement so as to impart a freeing strip disengaging action.

19. In a strip tensioning and positioning device, in combination, a strip positioning pin positioned adjacent the path of a record strip and adapted to enter apertures formed in said strip, means yieldingly urging said pin when engaging an aperture to tension the strip, and a pivoted support for said pin with its pivotal point disposed in advance of the longitudinal axis of the pin with reference to the direction of strip tensioning so as to swing said pin reversely of tensioning direction during a strip disengaging movement.

20. In a machine of the character described, in combination, a strip positioning pin positioned adjacent the path of a record strip and adapted to enter apertures formed in said strip, means yieldingly urging said pin when engaging an aperture to tension the strip, means holding the

strip in opposition to said pin urging means, a pivoted support for said pin with its pivotal point disposed in advance of the pin with reference to the direction of strip tensioning thereof so as to swing said pin rearwardly of tensioning direction during a strip disengaging movement, and a supporting carriage movable longitudinally of the strip path to which said support is pivoted.

21. In a machine of the character described, in combination, a strip positioning pin positioned adjacent the path of a record strip and adapted to enter apertures formed in said strip, means yieldingly urging said pin when engaging an aperture to tension the strip, a pivoted support for said pin with its pivotal point disposed rearwardly of the pin with reference to strip advancement so as to swing the latter forwardly of the strip path during a strip disengaging movement, means for causing the pin to automatically enter strip apertures when the strip is fed forwardly thus to move the pin forwardly, normally inoperative operating means for retracting said pivoted support to cause strip disengagement by said pin, and means controlled by the forward movement of the pin for setting said operating means in operative position.

22. In a machine of the character described, in combination, a strip positioning pin positioned adjacent the path of a record strip and adapted to enter apertures formed in said strip, means yieldingly urging said pin when engaging an aperture to tension the strip, a pivoted support for said pin with its pivotal point disposed rearwardly of the pin with reference to strip advancement so as to swing the latter rearwardly of the strip path during a strip disengaging movement, a supporting carriage movable longitudinally of the strip path to which said support is pivoted, means for causing the pin to enter an aperture when the strip is fed forwardly and thus to move said carriage forwardly against said yielding means into strip tensioning position, normally inoperative operating means for retracting said pivoted support to effect strip disengagement by the pin, and means for setting said operating means in operative position after said carriage has reached final strip tensioning position.

23. In a machine of the character described, in combination, a platen, a supporting carriage positioned relatively rearwardly of said platen mounted for movement longitudinally of a record strip path and adjacent thereto, a strip aperture engaging strip positioning pin, a supporting arm for said pin angularly disposed with reference to the latter and having a pivotal support to said carriage disposed relatively rearwardly of the pin with reference to strip feed, whereby the pin is pivotally movable into strip engaging and strip disengaging positions, and means for tensioning the strip against the side of said pin adjacent to its pivotal mounting.

24. In a machine of the character described, in combination, a supporting carriage mounted for movement longitudinally of a record strip path and adjacent thereto, a strip positioning pin pivoted to said carriage and movable into strip engaging and strip disengaging position, means yieldingly urging said pin for movement on its pivot into strip engaging position, means yieldingly urging said carriage for movement to effect strip tensioning when the pin is engaged in a strip aperture, means for causing the pin to enter a strip aperture when the strip is fed forwardly, thus to move said carriage forwardly

against said yielding means into strip tensioning position, operating means moving said pin on its pivot to withdraw it from strip engagement, and an automatic connecting and disconnecting coupling included in said operating means and automatically set into operative position when said carriage and pin are in operative strip tensioning position.

25. In a machine of the character described, in combination, a supporting carriage mounted for oscillatory movement longitudinally of a record strip path and adjacent thereto, a strip positioning pin pivoted to said carriage and movable into strip engaging and strip disengaging positions, and strip guides positioned forwardly and rearwardly of said pin to urge the strip into pin engaging position, said carriage being positioned between said strip guides and longitudinally oscillatable therebetween, one of said guides being pivotally mounted and yieldingly urged to press the record strip against said carriage adjacent said pin.

26. In a machine of the character described, in combination, a writing platen over which record strips having positioning apertures may be fed and supported for inscription reception, a pin positioned relatively forwardly of the platen for entering strip apertures, a supporting carriage positioned at the rear of said platen and mounted for oscillatory movements longitudinally of the record path and having a strip guide past which the strips travel, a strip aligning pin on said carriage positioned for engagement in the strip apertures adjacent said strip guide, a pin support carrying said strip aligning pin and swingably connected to the carriage at a point spaced to the rearward of the pin so as to provide for swinging movement of the latter toward and away from the strip to engage and disengage the latter, means yieldingly urging said strip aligning pin into strip engaging position, and means yieldingly urging said carriage away from said platen to tension and align the strips.

27. In a machine of the character described, in combination, a strip positioning pin adapted to engage strip apertures and having a hooked strip engaging face, a mounting plate for said pin detachably mounted transversely of the forward end of the machine and having an attaching flange projecting from an edge thereof for securing the mounting plate in operative position, said detachable mounting plate when in operative position having a downwardly forwardly inclined strip guiding surface at which the said pin is positioned, the hooked face of said pin facing forwardly and the top thereof having a strip guiding surface inclining upwardly and forwardly substantially from said guiding surface to the hooked face thereof, and a movably mounted strip clamping plate positioned over said pin and having a forwardly positioned depending marginal flange so as to provide with said inclined surface a housing for said pin.

28. In a machine of the character described, in combination, a writing platen over which record strips may be fed and supported for reception of an inscription, strip restraining means positioned relatively forwardly of said platen, strip restraining means positioned relatively rearwardly of said platen, and including a member movable to engage or disengage the strip, means mounting said rearward restraining means for movement longitudinally of the strip path, yielding means tending to urge said rearward strip restraining means reversely of strip

feed so as to smooth and tension the strip over the platen, a single operating means for operating both of said forward and rearward strip restraining means into strip restraining position, or into strip releasing position, said rearward restraining means being free for rearward movement independently of corresponding movement of said operating means, said forward restraining means including a primary restraining device and a secondary restraining device, and means whereby said single operating means simultaneously releases said secondary restraining device, and moves said movable member of the rearward restraining means into strip-disengaging position, whereupon said yielding means effects rearward adjustment of said rearward restraining means without corresponding movement of said operating means.

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