July 26, 1949. W. H. HOPE, JR 2,477,128

STRIP TRIMMER FOR WRITING MACHINES

Original Filed July 25, 1940 3 Sheets-Sheet 1

Fig. 1.

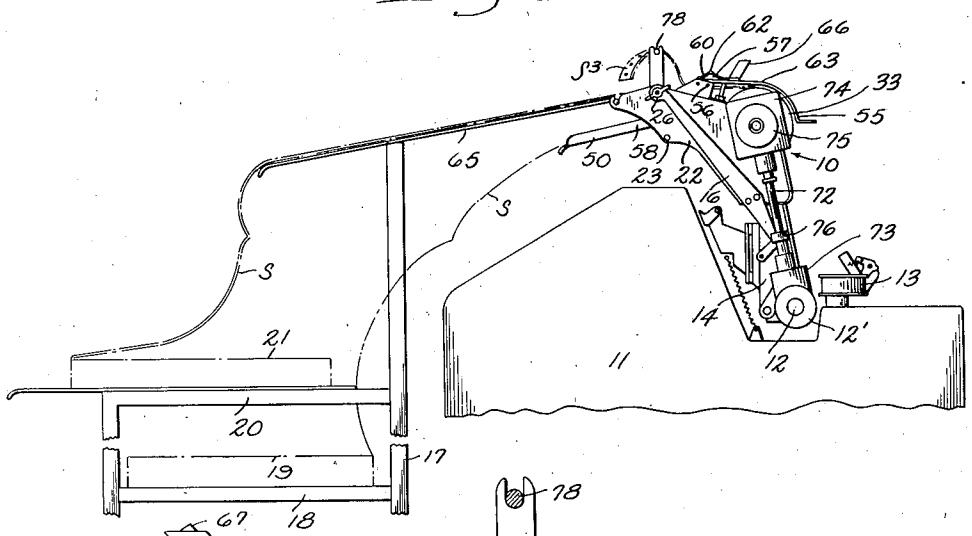

Fig. 2.

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Fig. 3.

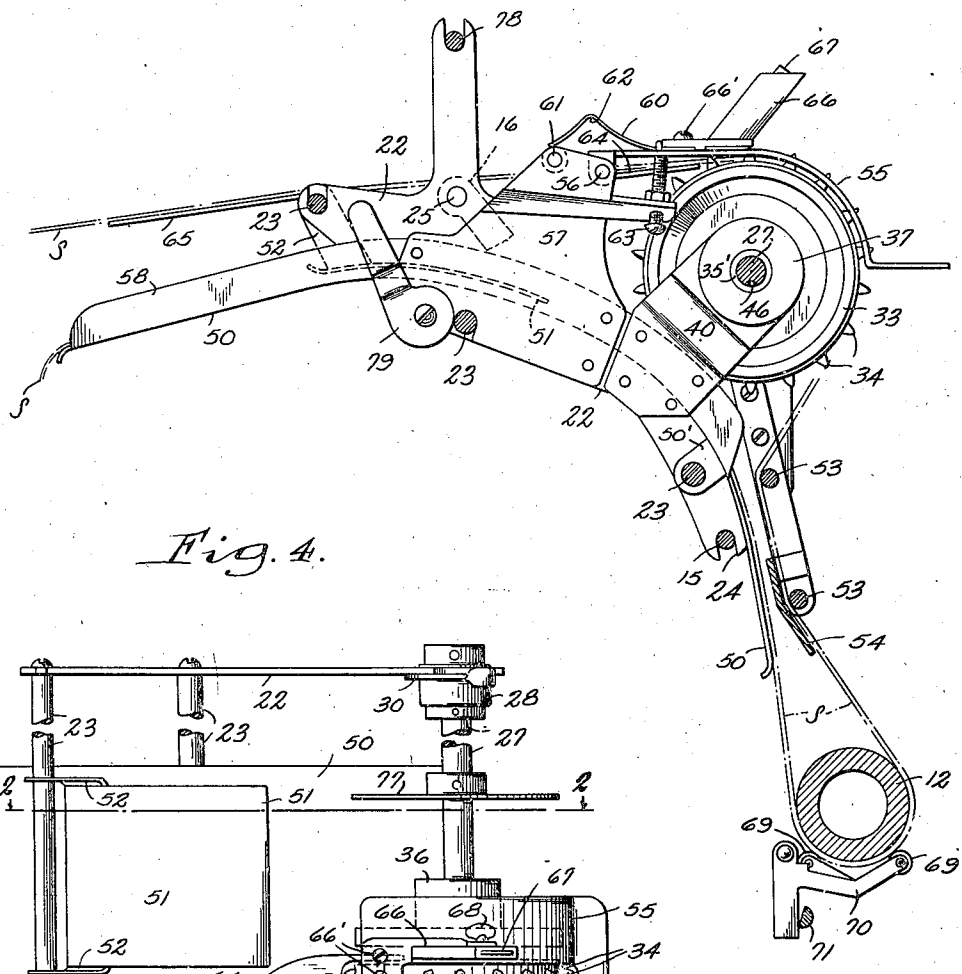

Fig. 4.

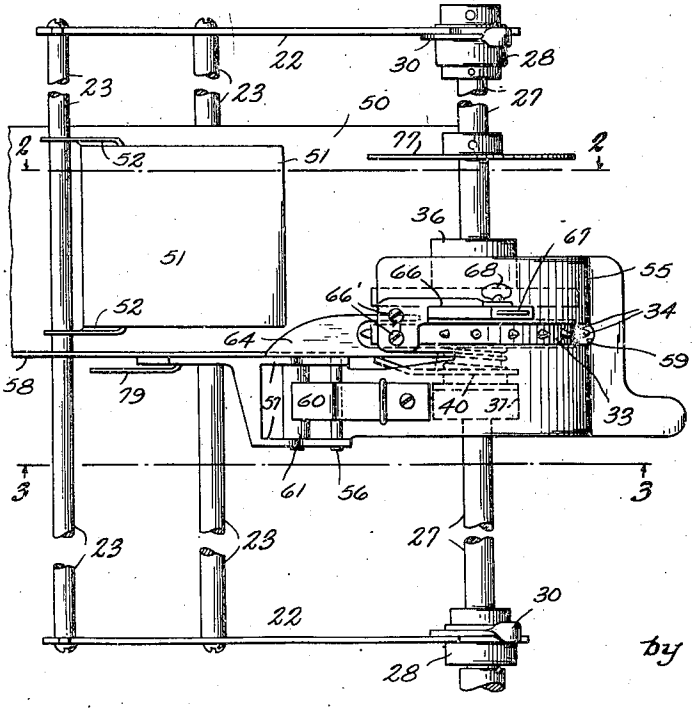

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Fig. 5.

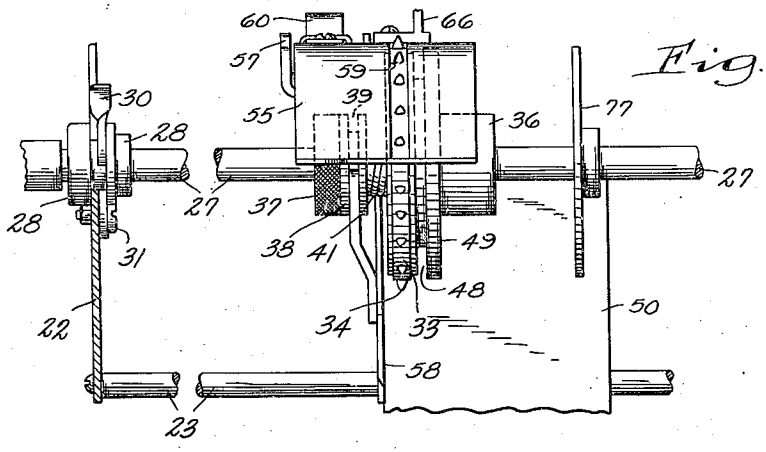


Fig. 6.

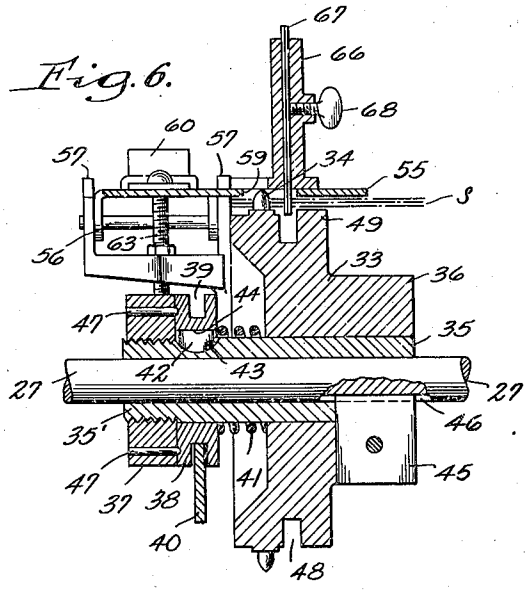


Fig. 8.

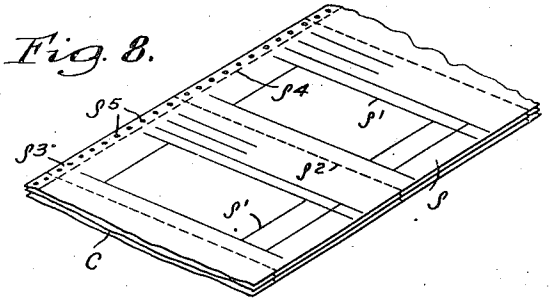
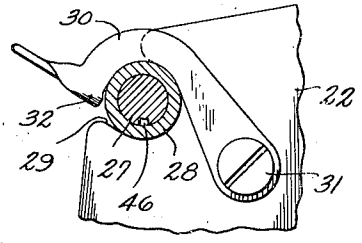


Fig. 7.



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Patented July 26, 1949 2,477,128

UNITED STATES PATENT OFFICE

2,477,128

STRIP TRIMMER FOR WRITING MACHINES

William H. Hope, Jr., Lewiston, N. Y., assignor to Moore Business Forms, Inc., a corporation of Delaware

Original application July 25, 1940, Serial No. 347,457. Divided and this application October 28, 1942, Serial No. 463,625

27 Claims. (Cl. 164—84.5)

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This invention relates to improvements of strip trimming mechanism, and more particularly to improvements in mechanism in the form of an attachment adapted for installation on writing machines, such as tabulators, typewriters and the like, for trimming the longitudinal edges or feed bands from record strips or assemblies of record and carbon strips of the long continuous traveler type during the feeding of such strips into writing position on the machine platen.

It is a general object of the invention to provide an improved strip slitting or trimming device for the feeding mechanism of machines of the class mentioned that may be quickly and easily applied in operative position upon the machine and to effect accurate and smooth trimming of the feed bands from the record strips during feeding movement thereof and requiring very little power for its operation.

A further object of the invention is to provide an improved severing device, whereby the feed bands of record strips having feed apertures can be severed or trimmed from the strips while they are supported and steadied by the pin feed mechanism, thus avoiding irregularities and mutilation in the severed strip edges, and promoting accurate strip feed, line spacing, and positioning of the strips on the platen of the writing machine.

Another object is to provide an improved mounting for the strip severing or slitting element whereby it can be easily moved to operative or inoperative positions facilitating threading of the strips in position and providing for ready adjustment with reference to a peripherally grooved rotary strip support so as to assure smooth and unobstructed strip severance.

Other objects 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 comprehensive disclosure of the nature, objects and advantages of the invention reference is had to the following description of the illustrative embodiment, and to the accompanying drawings, in which:

Fig. 1 is a fragmentary side elevation, partially diagrammatic, of the improved strip trimming and feeding mechanism as applied to a tabulating machine of known construction.

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Fig. 2 is an enlarged vertical longitudinal section of the improved strip trimming and feeding mechanism taken approximately on the line 2—2 of Fig. 4, looking in the direction of the arrows, parts being in elevation.

Fig. 3 is a vertical sectional view similar to Fig. 2 taken on the line 3—3 of Fig. 4, looking in the direction of the arrows.

Fig. 4 is a fragmentary plan view.

Fig. 5 is a fragmentary elevation showing details of the strip trimming device together with the strip feeding pin wheel, parts being in section.

Fig. 6 is a detailed vertical sectional view showing the construction and arrangement of the improved strip trimming or slitting attachment.

Fig. 7 is a detailed section and elevation showing the mounting of the drive shaft for the pin wheel; and

Fig. 8 is a fragmentary perspective view showing one form of record assembly with which the improved trimming and feeding mechanism is adapted to cooperate.

The subject matter of this application is fully disclosed in applicant's prior copending application Serial No. 347,457, filed July 25, 1940, now Patent No. 2,311,051 issued February 16, 1943. Therefore, the present application is a division of said prior application.

Referring to the drawing for a full detailed description of the invention, the improved strip trimming and feeding attachment generally indicated at 10 is shown in Fig. 1 as being applied to a tabulating machine 11 of known construction having a cylindrical platen 12 mounted for rotation on the tabulator. Type bars (not shown) are mounted in known manner on the tabulator for impressing the written characters upon the paper supported on the platen surface, such as the record strips S of the long continuous traveler type, as shown. An inking ribbon is used for inscribing the characters on the top or original record strip being mounted on supply spools in the usual manner, one of which is shown at 13. Frame or end plates 14 are mounted upon the tabulator adjacent to opposite ends of the platen 12 for supporting certain operative parts, and a transverse shaft or bar 15 is attached permanently in position on the tabulator. Supporting arms 16 are attached in position on the tabulator, extending upwardly and rearwardly and being ordinarily utilized for supporting a transverse shaft or rod for carrying a supply roll of paper.

When the improved strip trimming and feeding attachment is applied to the tabulator the supply of record strips S is ordinarily carried by a support or stand 17 having a lower shelf 18 upon which the supply of strips rests. The supply shown is in the form of a supply pack 19 in which the strips S are zigzag folded to form a compact package. The upper shelf 20 of the supply stand is arranged to receive the strips S as they emerge from the writing machine after inscription thereof. These inscribed strips will be refolded again on the shelf 20 in the form of a zigzag folded pack 21.

While strip assemblies of different forms or single strips may be utilized, for illustrative purposes a record strip assembly S is shown having two or more record strips of the long continuous traveler type in superposed relation, each strip being preferably provided with blank forms S^1 in longitudinal series therealong and having transverse lines or spaces in which the inscriptions are to be received. Each of the record strips is ordinarily provided with transverse weakened severance lines S^2 dividing it into form sheets, and a longitudinal feed band S^3 separated from the body of the strip by weakened severance lines S^4 formed by perforating or slitting the strips or by other known means. Each of the feed bands S^3 has a series of pin feed apertures S^5, the apertures of the different bands being in respective depthwise alignment for the reception of the feed pins. In some cases the longitudinal weakened lines S^4 may be omitted. A long continuous carbon strip C is positioned in transfer relation between each two adjacent record strips S so as to transfer the inscriptions to the lower or copy record strips. The carbon strips C may have longitudinal marginal portions interposed between the feed bands S^3 and be similarly provided with feed apertures, or the adjacent edges of the carbons may terminate inside of the feed bands. The assembly strips are usually connected together at various points along the assembly by suitable securing devices, or the record strips may be connected together by longitudinal marginal folds as in the well known fanfold structure.

The improved strip trimming and feeding attachment has a unitary supporting frame so that the complete attachment can be quickly and easily installed as a unit upon the writing machine and can be similarly removed therefrom. This supporting frame includes end brackets or plates 22 and transverse connecting or tie rods 23 to the opposite ends of which the end plates 22 are connected. The lower edges or extensions of the end plates 22 are formed with supporting pockets or seats 24 for receiving the transverse rod 15 of the writing machine for supporting the attachment in operative position. Additional supports for the attachment are provided by the upwardly and rearwardly extending supporting arms 16 having at their upper ends attaching devices or bolts 25 that are received in apertures in the end brackets 22 and provided with threaded wing nuts 26 for securing the attachment firmly in operative position. The attachment 10 can thus be quickly and easily installed in operative position upon the writing machine by placing the supporting seats 24 upon the supporting rod 15 and tightening the attaching bolts 25 in attaching position.

The main drive shaft 27 for the trimming and feeding mechanism is rotatably mounted in bearings 28 that are detachably supported in operative position in seats 29 formed in the edge portions of the end plates 22. These bearings 28 are clamped or supported in position by clamping levers 30 pivoted at 31 to the end plates 22 and each having a projection or overhanging lip 32 adapted to engage with the bearing periphery when the clamping lever is forced downwardly into clamping position as shown in Fig. 7. When the levers are in their holding positions the lips 32 function to hold the levers in clamping position and to prevent accidental release thereof. However, the clamping levers can be easily moved to releasing position by exerting upward pressure thereon, whereupon the drive shaft 27 with attached parts can be lifted as a unit from the supporting seats 29.

The strip feeding wheel 33 is mounted upon the drive shaft 27 for rotation therewith but may be slidably adjusted along the shaft. This feed wheel is provided with a series of feed pins 34 arranged in equally spaced relation peripherally of the wheel so as to engage in feeding relation in the feed apertures of the strips S. Mounted also upon the shaft 27 is a sleeve 35 extending into the hub 36 of the feed wheel and firmly attached to the latter by any appropriate means, such as by means of a set screw or by shrinking the hub into tightly contacting relation with the sleeve. The sleeve has an extension 35' at one side of the feed wheel threaded to receive a threaded adjusting nut 37. An anchoring collar 38 is mounted upon the sleeve 35 just inside of the adjusting nut 37, forming an abutment for the latter and having a peripheral groove 39 in which an anchoring plate 40 is slidably received and firmly attached in stationary position upon the frame. A coiled compression spring 41 is interposed between the stationary collar 38 and the adjacent face of the feed wheel 33. The sleeve 35 extends through a centrally disposed aperture in the collar 38 and the collar is constrained for rotation with the sleeve by means of a key 42 seated at its inner surface in a concave depression 43 in the sleeve, and seated at its outer surface in a groove or keyway 44 in the collar. In this manner the collar is constrained for rotation with the sleeve but the sleeve may slide longitudinally in either direction through the collar. The feed wheel 33 and sleeve 35 are anchored for rotation with the feed shaft 27 by means of a key 45 pinned in a seat or slot to the hub 36 of the feed wheel and extending through a slot in the sleeve into an elongated groove or keyway 46 in the feed shaft. Thus the feed wheel with assembled parts is constrained for rotation with the feed shaft 27 but may be adjusted longitudinally thereof, that is transversely of the path of strip feed. Adjustments of the pin wheel transversely of the strip path are effected by turning the adjusting nut 37 in one direction or another, and the wheel is retained in adjusted position by means of detents or pins 47 mounted in the nut and projecting at their inner end portions into seats or depressions in the adjacent abutting surface of the collar 38.

Adjacent to the series of pins 34 the feed wheel 33 is formed with a peripheral groove 48 and inside of this groove is an annular support 49 for the strips. The strips are thus supported on one side of the groove 48 by the wheel and pins and on the other side thereof by the annular support 49. The purpose and function of this arrangement are set forth below.

Strip guiding means is provided for guiding the

strips from the supply 19 to the platen, including a guide plate 50 attached by means of lugs or brackets 50' to the tie rods 23. Also, a guide plate 51 overlies the plate 50 and is mounted for upward swinging movement by means of supporting arms 52 upon one of the transverse tie rods 23 and rests by gravity upon the upper surface of the advancing strips. The guide plate 50 is curved to guide the strips in a smooth even path to the rear side of the platen 12. Also, transverse guide bars 53 and a transverse guide plate 54 are mounted upon the frame for guiding the strips in their movement away from the platen to the feed wheel 33. The guides 53 and 54 are positioned inwardly to increase the arc of contact of the strips with the platen 12 and also to increase the arc of contact with the feeding periphery of the feed wheel.

For guiding and holding the strips in feeding engagement with the feed pins and the periphery of the feed wheel there is a guide plate 55 pivoted at 56 at a point spaced from the shaft 27 to a supporting bracket 57 attached to one of the longitudinal strip guiding end flanges 58 of the guide 50. The guide plate 55 is curved to conform to the periphery of the feed wheel and is provided with an elongated slot 59 in which the feed pins run. A positioning and retaining leaf spring 60 is attached to the guide plate 55 engaging with a transverse retaining roller 61 to the rearward of the pivot 56 tensioned to urge the guide plate toward the feed wheel in strip guiding relation. The spring 60 is provided with a pocket or stop formation 62 adapted to engage with the roller 61 carried by the bracket 57 when the guide plate is lifted on its pivot away from the feed wheel so as to hold it in raised position when the strips are being placed in operative position upon the feed pins. An adjusting screw 63 is threaded to an arm or support of the bracket 57, having its upper free end engaging with the lower surface of the guide plate 55 at the right of the pivot 56 in Fig. 3, whereby the position of the guide plate may be adjusted and maintained in adjusted position with reference to the periphery of the feed wheel.

As best seen in Fig. 2, there is a stripping plate 64 secured in position to the bracket 57 and having its free end adjacent to the periphery of the feed wheel near the point where the record strips emerge from engagement with the wheel and feed pins. This plate 64 functions as a stripper or separator to separate the record strips from engagement with the feed pins during the strip feeding action. A strip guiding and supporting plate 65 conducts the record strips emerging from the feed wheel into position to be refolded on the shelf 20 into the zigzag folded pack 21.

Also, mounted upon the pivoted guide plate 55 and secured thereto by screws 66' is a feed band separator or slitter 66 that is adapted to sever or separate the feed bands S^3 from the strips as soon as they have performed their strip feeding function. The guide plate 55 with its mountings thus provides a movable carrier or support for the strip separator which is movable with the guide plate into and away from its operative position.

As best shown in Fig. 6, the strip separator 66 includes a separator element 67 shown in the form of a blade having a sharp cutting edge directed against the advancing record strips so as to cut or slit the feed bands from the main bodies of the strips. This slitter blade is received in a supporting slot or pocket and clamped in appropriately adjusted position by a set screw 68. The lower end of the slitter blade runs in the peripheral groove 48 of the feed wheel and its cutting edge is inclined forwardly against the moving strips so that the strips are directed against the cutting edge with a wiping action to facilitate the severance. Also, at the point that the severance takes place the strips are supported and steadied at the opposite sides of the peripheral groove 48 by the surface of the feed wheel at the bases of the feed pins and by the annular support 49. The pins also assist in supporting and steadying the strips during the trimming action of the blade. By these means the severance of the feed bands is facilitated and a clean smooth severed strip edge is assured. Although the record strips are shown as having longitudinal weakened severance lines along the feed bands S^3, for some purposes where a sharp edged slitter blade is used these weakened lines may be omitted so that the slitting action occurs along unweakened parts of the strips. In cases where the separator 67 has a blunt or rounded severing edge the weakened lines S^4 are needed.

During initial threading of the record strip assembly into feeding position, the strips are led forwardly from the supply 19 over the guide plate 50 and beneath the gravity guide plate 51 which may be raised for this purpose. The strips are then advanced downwardly around the platen 12 and upwardly over the front surface thereof and into guiding relation with the guide rods 53 and guide plate 54. If it is desired to write on the forward end portions of the strips before they reach feeding engagement with the feed wheel 33, the preliminary strip feed may be effected by rotating the platen 12 by means of the knob or handle 12'. Pressure rolls 69 mounted upon a suitable carrier 70 with a manual control 71 are provided for pressing the strips against the platen during this initial feeding. As soon as the forward ends of the strips reach the feed wheel 33 the feed pins are engaged with the apertures in the strips and the guide plate 55 moved into guiding relation with the strips. Subsequent feeding of the strips will be by means of the feed wheel 33, the pressure rolls 69 being released.

As shown in Fig. 1, the main drive shaft 27 for the feeding mechanism is coupled by driving connections including a driving shaft 72 with the rotary platen 12 of the writing machine. These driving connections are diagrammatically shown and include the driving shaft 72 connected at its lower end with a bevelled toothed gear meshing with a similar gear on the platen shaft and mounted in the housing 73. At its upper end the drive shaft is connected to another toothed bevelled gear meshing with a similar gear on the main drive shaft 27, these bevelled gears being mounted in the housing 74. A micromatic adjustment controlled through a knurled head 75 may be mounted in the housing 74 for adjusting the feed shaft 27 angularly through small increments independently of movement of the platen. The drive shaft 72 is connected to the bevelled gear in the housing 73 by means of a coupling 76.

After the strips have been engaged with the pins of the feed wheel 33, strip feed is continued through action of this feed wheel which is driven step by step by the driving connections with the platen. The strips, at points spaced laterally from the feed wheel, are supported in line with the feed wheel periphery by means of circular supporting disks 77 mounted upon the drive shaft 27. As the strips are advanced by the feed wheel the feed bands are separated or cut from the

strips by action of the feed band separator 66, the severed bands S^3 being conducted to one side by a guide rod 78. During the slitting or cutting action, the strips are supported and steadied by engagement with the feed pins and also by means of the periphery of the feed wheel at the bases of the pins, and by the annular support 49 as described. Clean, even severance is thus assured, and tearing and mutilation of the strips avoided. The slitting action occurs substantially at the point at which the feed pins have completed their strip feeding action.

The trimming and feeding mechanism can be adjusted laterally upon the supporting rods 23 and is maintained in adjusted position by means of pivoted clamping levers 79 having eccentric clamping surfaces engaging with the rods 23.

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 severing device, in combination, a rotary feed wheel having a series of feed pins for engagement with strip apertures to effect strip feed, a strip guiding unit movably mounted adjacent to said feed wheel and including a strip guide mounted for movement into strip guiding position adjacent to said feed pins, and a strip slitting member mounted on and carried by said movable unit for movement therewith and positioned in adjacent laterally offset relation with reference to said feed pins to slit the moving strips along a longitudinal line adjacent to said pins, whereby the pins support and steady the strips during the slitting action.

2. In a strip severing device, in combination, a rotary feed wheel having a series of feed pins for engagement with strip apertures to effect strip feed, a strip guiding unit movably mounted adjacent to said feed wheel and including a strip guide mounted for movement into strip guiding position adjacent to said feed pins, a strip slitting member mounted on and carried by said movable unit for movement therewith and positioned in adjacent laterally offset relation with reference to said feed pins to slit the moving strips along a longitudinal line adjacent to said pins, whereby the pins support and steady the strips during the slitting action, said feed wheel having a peripheral groove adjacent to said pin series in which said slitting member runs, a cylindrical strip support on said feed wheel adjacent to said slitting member and opposite to said groove from said pin series, an adjustable limiting device for said movable unit for positioning said severing element and said guide in operative position, and separate adjustable supporting means for supporting said severing element for independent adjustment into operative position.

3. In a strip severing device, in combination, a feed wheel having a series of feed pins for engagement with apertures of strip feed bands to effect strip feed and having a peripheral groove adjacent to the pin series, a feed band separator running in said groove for separating said feed bands from the strips being fed, a movably mounted strip guide adjacent to said feed wheel and movable for adjustment with reference thereto, and adjustable supporting means mounted on said strip guide for adjustably supporting said feed band separator on said strip guide for movement to and from operative position.

4. In a strip severing device in combination, strip feeding mechanism including a part adapted to engage and feed a strip, said feeding mechanism including a rotary part having a peripheral groove laterally spaced from said strip engaging part, a movably mounted support, a strip guide connected to said support so as to be moved thereby to and from strip guiding relation with reference to said strip engaging strip feeding part of the feeding mechanism, and a strip severing element mounted upon and carried by said movable support and movable therewith to and from strip severing relation in said peripheral groove.

5. In a strip severing device in combination, strip feeding mechanism including a part adapted to engage and feed a strip, said feeding mechanism including a rotary part having a peripheral groove spaced from said strip engaging part, a movably mounted support, a strip guide connected to said support so as to be moved thereby to and from strip guiding relation with reference to said strip engaging strip feeding part of the feeding mechanism, a strip severing element carried by said movable support and movable therewith to and from strip severing relation in said peripheral groove, means for holding said movable support in adjusted operative positions, means for adjusting said severing element into different operative positions relative to said groove on said movable support, and a latching device for holding said movable support in position to retain said strip guide away from strip guiding position.

6. In a strip severing device in combination, strip feeding mechanism including a part adapted to engage and feed a strip, said feeding mechanism including a rotary part having a peripheral groove spaced from said strip engaging part, a movably mounted support, a strip guide connected to said support so as to be moved thereby to and from strip guiding relation with reference to said strip engaging strip feeding part of the feeding mechanism, a strip severing element carried by said movable support and movable therewith to and from strip severing relation in said peripheral groove, a latching lug, and a latch spring connected to said movable support and having a seat engageable in latching relation with said latch lug.

7. In a strip severing device, in combination, strip feeding mechanism including a part adapted to engage and feed a strip, said feeding mechanism including a rotary part having a peripheral groove spaced from said strip engaging part, a movably mounted support, a strip guide connected to said support so as to be moved thereby to and from strip guiding relation with reference to said strip engaging strip feeding part of the feeding mechanism, and a strip severing element adjustable into and out of strip severing relation in said peripheral groove.

8. In a strip severing device in combination, strip feeding mechanism including a part adapted to engage and feed a strip, said feeding mechanism including a rotary part having a peripheral groove spaced from said strip engaging part, a movably mounted support, a strip guide connected to said support so as to be moved thereby to and from strip guiding relation with reference to said strip engaging strip feeding part of the feeding mechanism, a strip severing element mounted for adjustment to and from strip severing relation in said peripheral groove, means for holding said movable support in adjusted operative positions,

means for adjusting said severing element into different operative positions relative to said groove on said movable support, and a holding device for holding said movable support in position to retain said strip guide away from strip guiding position.

9. In a strip severing device, in combination, strip feeding mechanism including a part adapted to engage and feed a strip, said feeding mechanism including a rotary part having a peripheral groove spaced from said strip engaging part, a movably mounted support, a strip guide connected to said support so as to be moved thereby to and from strip guiding relation with reference to said strip engaging strip feeding part of the feeding mechanism, a strip severing element adjustable into and out of strip severing relation in said peripheral groove, and a holding device for said movably mounted support for holding said strip guide away from its strip guiding position.

10. In a strip severing device, in combination, strip feeding mechanism including a part adapted to engage and feed a strip, said feeding mechanism including a rotary part having a peripheral groove spaced from said strip engaging part, a movably mounted support, a strip guide connected to said support so as to be moved thereby to and from strip guiding relation with reference to said strip engaging strip feeding part of the feeding mechanism, a strip severing element adjustable into and out of strip severing relation in said peripheral groove, a holding device for said movably mounted support for holding said strip guide away from its strip guiding position, and an adjustable positioning device for positioning and holding said strip guide in adjusted guiding position with reference to said feeding mechanism.

11. In a strip severing device, in combination, strip feeding mechanism including a part adapted to engage and feed a strip, said feeding mechanism including a rotary part having a peripheral groove laterally spaced from said strip engaging part, a movably mounted support, a strip guide connected to said support so as to be moved thereby to and from strip guiding relation with reference to said strip engaging strip feeding part of the feeding mechanism, a strip severing element adjustable into and out of strip severing relation in said peripheral groove, and resilient means urging said strip severing element into operative position in said peripheral groove.

12. In a strip severing device, in combination, strip feeding mechanism including a part adapted to engage and feed a strip, said feeding mechanism including a rotary part having a peripheral groove spaced from said strip engaging part, a movably mounted support, a strip guide connected to said support so as to be moved thereby to and from strip guiding relation with reference to said strip engaging strip feeding part of the feeding mechanism, a strip severing element adjustable into and out of strip severing relation in said peripheral groove, resilient means urging said strip severing element into operative position in said peripheral groove, and adjustable limiting means for limiting the positioning of said severing element in adjusted operative position in said peripheral groove.

13. In a strip severing device, in combination, strip feeding mechanism including a part adapted to engage and feed a strip, said feeding mechanism including a rotary part having a peripheral groove spaced from said strip engaging part, a movably mounted support, a strip guide connected to said support so as to be moved thereby to and from strip guiding relation with reference to said strip engaging strip feeding part of the feeding mechanism, a strip severing element adjustable into and out of strip severing relation in said peripheral groove, a holding device for said movably mounted support for holding said strip guide away from its strip guiding position, an adjustable positioning device for positioning and holding said strip guide in adjusted guiding position with reference to said feeding mechanism, and separate adjustable holding means for said severing element to position the same with reference to said peripheral groove.

14. In a strip severing device, in combination, strip feeding mechanism including a part adapted to engage and feed a strip, said feeding mechanism including a rotary part having a peripheral groove laterally spaced from said strip engaging part, a movably mounted support, a strip guide connected to said support so as to be moved thereby to and from strip guiding relation with reference to said strip engaging strip feeding part of the feeding mechanism, a strip severing element adjustable into and out of strip severing relation in said peripheral groove, said severing element being operatively connected for movement by and with said movably mounted support and being mounted for adjustment into strip severing relation independently of said movably mounted support.

15. In a strip severing device, in combination, strip feeding mechanism including a part adapted to engage and feed a strip, said feeding mechanism including a rotary part having a peripheral groove laterally spaced from said strip engaging part, a movably mounted support, a strip guide connected to said support so as to be moved thereby to and from strip guiding relation with reference to said strip engaging strip feeding part of the feeding mechanism, a strip severing element adjustable into and out of strip severing relation in said peripheral groove, and a holding device for said movably mounted support for holding said strip guide away from its strip guiding position, said severing element being operatively connected for movement by and with said movably mounted support and being mounted for adjustment into strip severing relation independently of said movably mounted support.

16. In a strip severing device, in combination, strip feeding mechanism including a part adapted to engage and feed a strip, said feeding mechanism including a rotary part having a peripheral groove spaced from said strip engaging part, a movably mounted support, a strip guide connected to said support so as to be moved thereby to and from strip guiding relation with reference to said strip engaging strip feeding part of the feeding mechanism, a strip severing element adjustable into and out of strip severing relation in said peripheral groove, resilient means urging said strip severing element into operative position in said peripheral groove, and adjustable limiting means for limiting the positioning of said severing element in adjusted operative position in said peripheral groove, said severing element being operatively connected for movement by and with said movably mounted support and being mounted for adjustment into strip severing relation independently of said movably mounted support.

17. In a strip severing device, in combination, strip feeding mechanism including a part adapted to engage and feed a strip, said feed-mechanism including a rotary part having a peripheral groove spaced from said strip engaging part, a

movably mounted support, a strip guide connected to said support so as to be moved thereby to and from strip guiding relation with reference to said strip engaging strip feeding part of the feeding mechanism, a strip severing element adjustable into and out of strip severing relation in said peripheral groove, adjustable holding means for holding said movable support in different adjusted positions, and means for adjusting said severing element into different operative positions relative to said peripheral groove.

18. In a strip severing device, in combination, rotary strip feeding mechanism including a rotary feed member having feed pins for engagement with strips to effect strip feed, said feeding mechanism including a cylindrical strip support laterally adjacent to said feed pins, a movably mounted support, a strip guide connected to said support so as to be moved thereby to and from strip guiding relation with reference to said feed pins, and a swingably mounted strip severing element cooperating with said rotary feeding mechanism to sever the advancing strips along a longitudinal line and being adjustable into and out of strip severing relation with reference to parts of the strips positioned at said rotary feeding mechanism, and resilient means urging said strip severing element into operative strip severing position with reference to said rotary feeding mechanism.

19. In a strip severing device, in combination, rotary strip feeding mechanism including a rotary feed member having feed pins for engagement with strips to effect strip feed, said feeding mechanism including a cylindrical strip support laterally adjacent to said feed pins, a movably mounted support, a strip guide connected to said support so as to be moved thereby to and from strip guiding relation with reference to said feed pins, a swingably mounted strip severing element cooperating with said rotary feeding mechanism to sever the advancing strips along a longitudinal line and being adjustable into and out of strip severing relation with reference to parts of the strip positioned at said rotary feeding mechanism, resilient means urging said strip severing element into operative strip severing position with reference to said rotary feeding mechanism, and adjustable limiting means for limiting the positioning of said severing element with reference to said rotary feeding mechanism.

20. In a strip severing device, in combination, rotary strip feeding mechanism including a rotary feed member having feed pins for engagement with strips to effect strip feed, said feeding mechanism including a cylindrical strip support laterally adjacent to said feed pins, a movably mounted support, a strip guide connected to said support so as to be moved thereby to and from strip guiding relation with reference to said feed pins, a strip severing element cooperating with said rotary feeding mechanism to sever the advancing strips along a longitudinal line and being adjustable into and out of strip severing relation with reference to parts of the strip positioned at said rotary feeding mechanism, resilient means urging said strip severing element into operative strip severing position with reference to said rotary feeding mechanism, and a holding device for said movably mounted support for holding said strip guide away from its strip guiding position.

21. In a strip severing device, in combination, rotary strip feeding mechanism including a rotary feed member having feed pins for engagement with strips to effect strip feed, said feeding mechanism including a cylindrical strip supporting surface laterally adjacent to said feed pins, a movably mounted support, a strip guide connected to said support so as to be moved thereby to and from strip guiding relation with reference to said feed pins, a strip severing element cooperating with said rotary feeding mechanism to sever the advancing strips along a longitudinal line and being adjustable into and out of strip severing relation with reference to said rotary feeding mechanism, resilient means urging said strip severing element into operative strip severing position with reference to said rotary feeding mechanism, and an adjustable device for positioning and holding said severing element in adjusted severing position with reference to said feeding mechanism.

22. In a strip severing device, in combination, rotary strip feeding mechanism including a rotary feed member having feed pins for engagement with strips to effect strip feed, said feeding mechanism including a cylindrical strip support laterally adjacent to said feed pins, a movably mounted support, a strip guide connected to said support so as to be moved thereby to and from strip guiding relation with reference to said feed pins, a strip severing element cooperating with said rotary feeding mechanism to sever the advancing strips along a longitudinal line and being adjustable into and out of strip severing relation with reference to said rotary feeding mechanism, and resilient means urging said strip severing element into operative strip severing position with reference to said rotary feeding mechanism, said strip severing element being operatively connected for movement by and with said movably mounted support and being mounted for adjustment into strip severing relation independently of said movably mounted support.

23. In a strip severing device, in combination, strip feeding mechanism including a rotary feed member having feed pins for engagement with strips to effect strip feed, said feeding mechanism including a cylindrical strip support laterally adjacent to said feed pins, a supporting arm swingably mounted eccentric to said rotary feed member and carrying a strip severing element positioned for cooperation with parts of the strips supported on said cylindrical support to sever the traveling strips along a longitudinal line, and resilient means cooperating with said swingable supporting arm to urge said severing element into cooperative strip severing position with reference to said feeding mechanism.

24. In a strip severing device, in combination, rotary strip feeding mechanism including a rotary feed member having feed pins for engagement with strips to effect strip feed, said feeding mechanism including a cylindrical strip support laterally adjacent to said feed pins, a supporting arm swingably mounted eccentric to said rotary feed member and carrying a strip severing element positioned for cooperation with parts of the strips supported on said cylindrical support to sever the traveling strips along a longitudinal line, resilient means cooperating with said swingable supporting arm to urge said severing element into cooperative strip severing position with reference to said feeding mechanism, and adjustable limiting means for cooperating with said swingable supporting arm for limiting the positioning of said severing element with reference to said rotary feeding mechanism.

25. In a strip severing device, in combination,

strip feeding mechanism including a rotary feed member having feed pins for engagement with strips to effect strip feed, said feeding mechanism including a cylindrical strip support laterally adjacent to said feed pins and having a peripheral groove laterally spaced from the pins, a supporting arm swingably mounted eccentric to said rotary feed member and carrying a strip severing element positioned for cooperating with parts of the strips substantially aligned with said peripheral groove and engageable in said groove to sever the traveling strips along a longitudinal line, resilient means cooperating with said swingable supporting arm to urge said severing element into operative strip severing position in said peripheral groove, and adjustable limiting means cooperating with said swinging arm to limit the positioning of said severing element in adjusted operative position in said peripheral groove.

26. In a strip severing device, in combination, strip feeding mechanism including a rotary feed member having feed pins for engagement with strips to effect strip feed, said feeding mechanism including a cylindrical strip support laterally adjacent to said feed pins, a movably mounted strip guide for guiding the strips at said rotary feed member, holding means adjustable for holding the strip guide either in operative strip guiding position or in retracted inoperative position, an adjustably mounted strip severing element positioned for cooperation with the part of the strips supported by said cylindrical surface to sever the traveling strips along a longitudinal

line, means for adjusting said severing element into operative strip severing position, and adjustable holding means for holding the said severing element in its adjusted operative position.

27. In a strip severing device, in combination, strip feeding mechanism including a rotary feed member having feed pins for engagement with strips to effect strip feed, said feeding mechanism including a cylindrical strip support laterally adjacent to said feed pins, a movable strip guide for guiding the strips at said rotary feed member, holding means adjustable for holding the strip guide either in operative strip guiding position or in retracted inoperative position, a strip severing element swingably mounted eccentric to said rotary feed member and positioned for cooperation with the part of the strips supported by said cylindrical surface to sever the traveling strips along a longitudinal line, means for adjusting said severing element into operative strip severing position, and adjustable holding means for holding said swingable severing element in adjusted operative position.

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The following references are of record in the file of this patent:

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Number	Name	Date
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