Jan. 16, 1940. C. M. McCARTHY 2,187,134

BELT HANDLING DEVICE

Filed Feb. 27, 1939 3 Sheets-Sheet 1

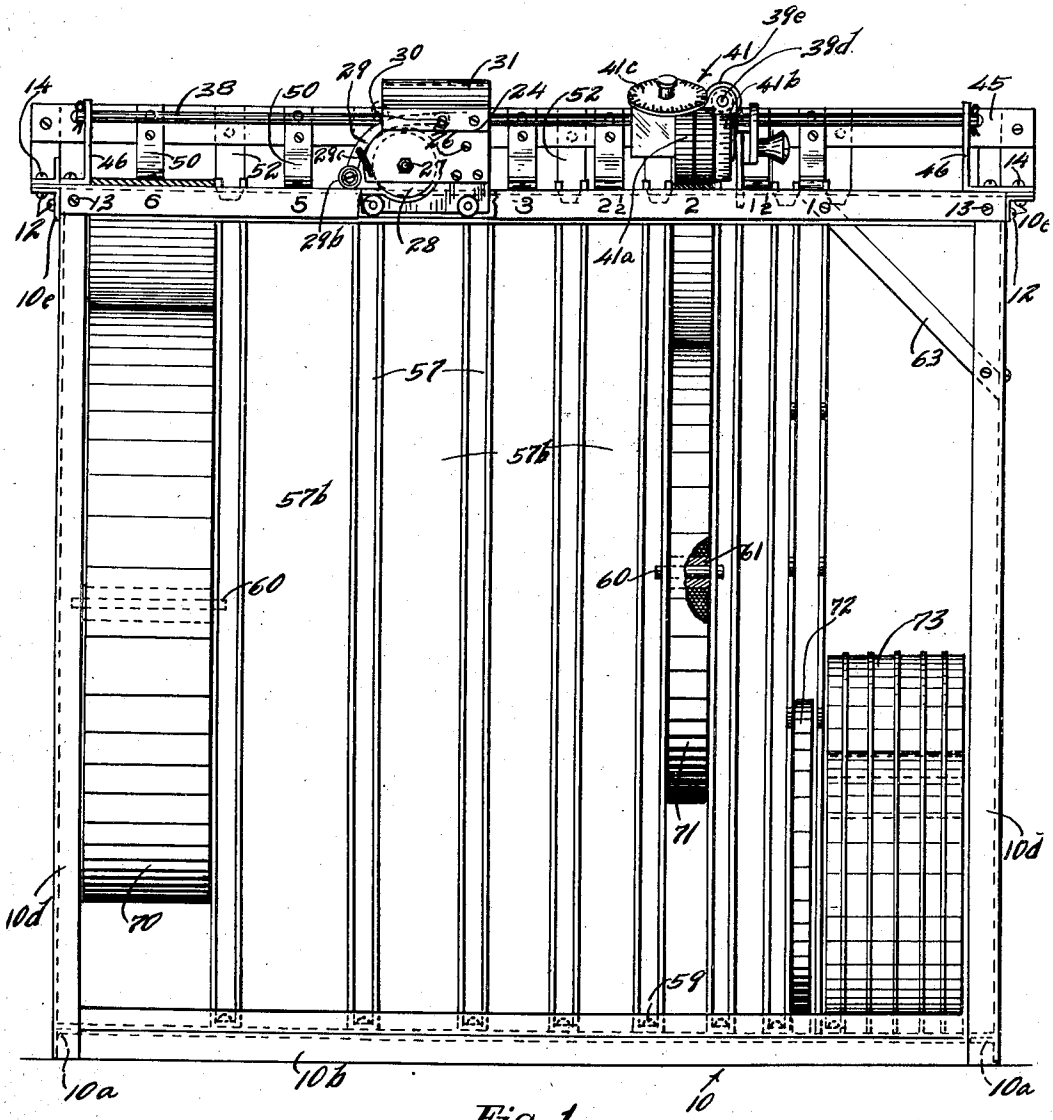


Fig. 1.

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Filed Feb. 27, 1939 3 Sheets-Sheet 2

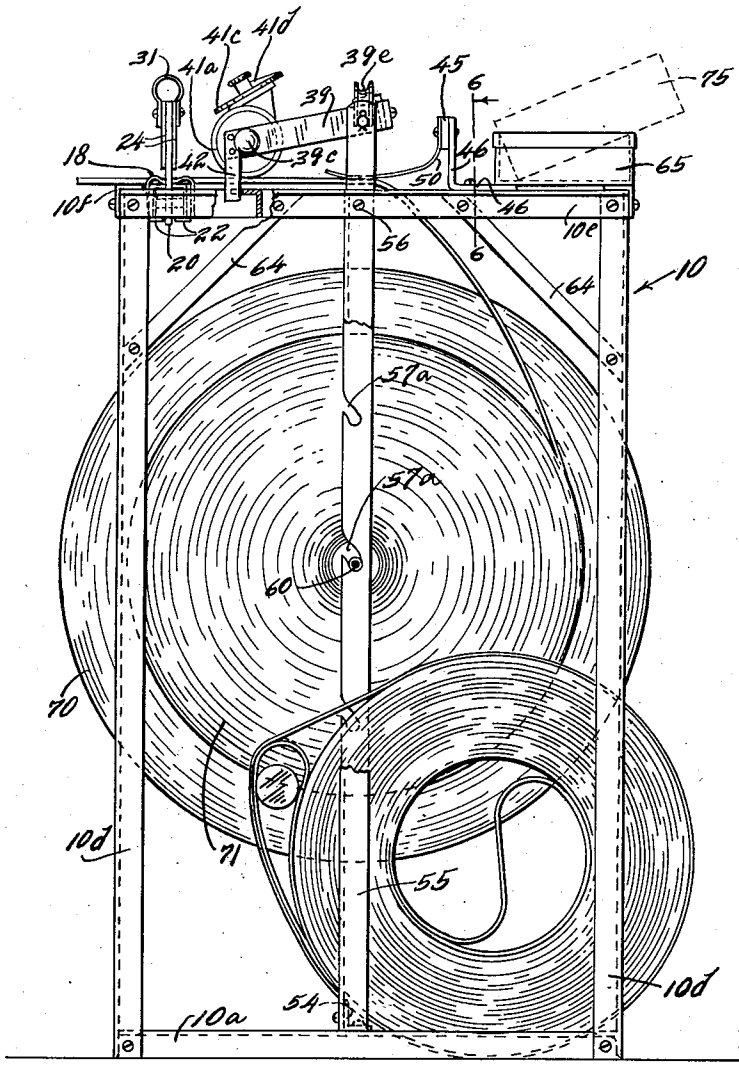


Fig. 2.

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Filed Feb. 27, 1939 3 Sheets-Sheet 3

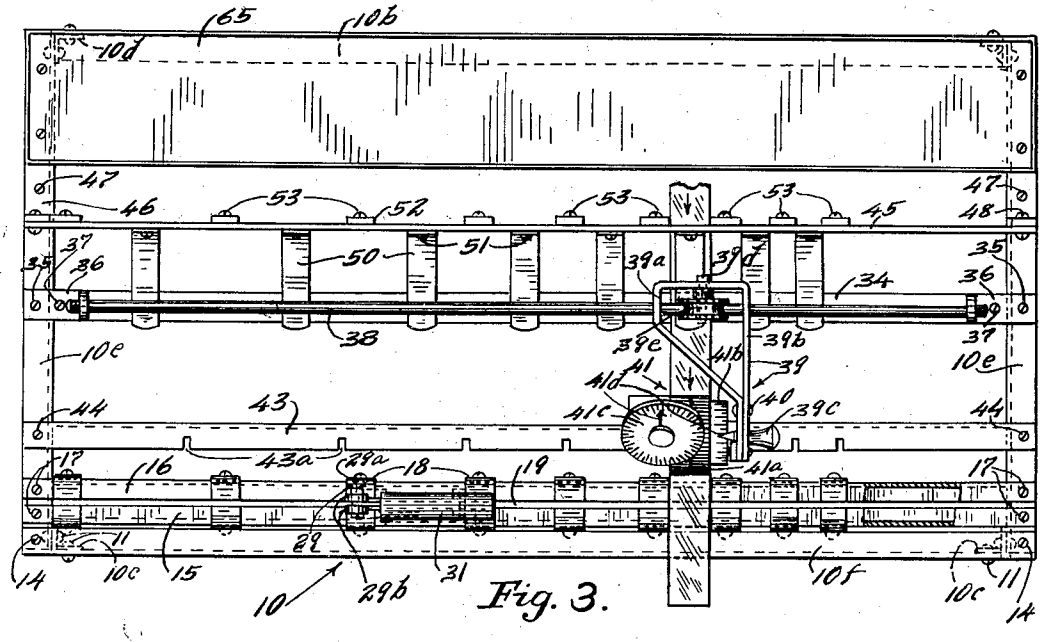


Fig. 3.

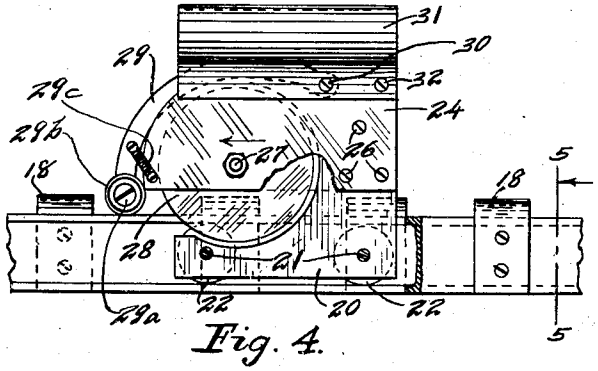


Fig. 4.

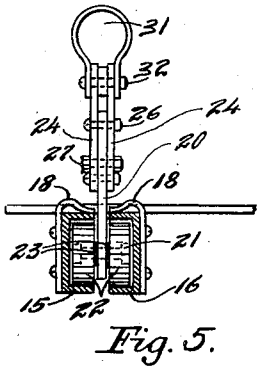


Fig. 5.

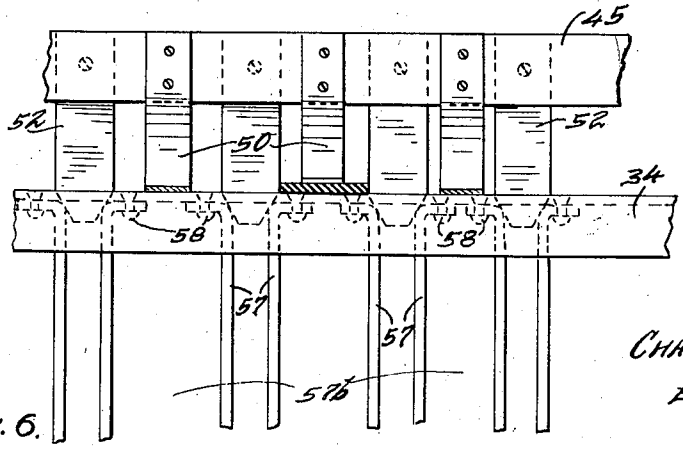


Fig. 6.

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UNITED STATES PATENT OFFICE

2,187,134

BELT HANDLING DEVICE

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10 Claims. (Cl. 33—130)

This invention relates to a device for storing, measuring and cutting belting. Heretofore it has largely been the practice to have rolls of belting piled about a salesroom or store room and when it was desired to cut a piece of belting for sale or use the same would be unwound from the roll to the desired length and the roll then moved to some cutting device. Alternately a knife might be used to cut the piece from the roll. All of such practice has been quite clumsy and inconvenient, the same also resulting in imperfect cutting and measuring of the desired piece of belting as well as requiring unnecessary room.

It is an object of this invention to provide a very simple and efficient device by means of which the rolls of belting can be kept in perfect order and by means of which a length of belting can easily and quickly be drawn from a roll, accurately measured and severed with a perfect and desired cut.

It is a further object of the invention to provide a machine having a plurality of vertically extending chambers with means for supporting rolls of belting therein, a table above said rolls over which belting from any one of said rolls may be passed together with easily operated means for measuring and cutting the belting.

It is still another object of the invention to provide a novel and efficient cutting means for belting.

These and other objects and advantages of the invention will be fully set forth in the following description made in connection with the accompanying drawings in which like reference characters refer to similar parts throughout the several views and in which:

Fig. 1 is a view in front elevation of the device, a small portion being broken away and another portion being shown in vertical section;

Fig. 2 is a view in end elevation of the device as seen from the right of Fig. 1;

Fig. 3 is a top plan view of the device;

Fig. 4 is a partial view similar to Fig. 1, shown on an enlarged scale;

Fig. 5 is a vertical section taken on line 5—5 of of Fig. 4 as indicated by the arrow; and

Fig. 6 is a vertical section taken substantially on line 6—6 of Fig. 2 as indicated by the arrow.

Referring to the drawings a device or machine is shown having a frame designated generally as 10, the same including parallel base end members 10*a*. While these might be variously formed, in the embodiment of the invention illustrated, they are shown as made of angle bars. Forward and rear base members 10*b* extend parallel to each other and respectively between the ends of members 10*a*. While members 10*b* could be variously formed, they are also shown as made of angle bars and are connected to members 10*a* by small angular brackets 10*c* and rivets 11. Corner members 10*d* extend vertically from the ends of members 10*c* and 10*d*, the same being thus disposed at the corners of a rectangle and said members 10*d* are also illustrated as made from angle bars. At the top of members 10*d*, members 10*e* extend between the same, being disposed vertically above members 10*d* and parallel thereto. Members 10*e* are connected to the members 10*d* by headed and nutted bolts 12. A top portion is provided for frame 10, the same forming in effect, an open-work table. This includes a member 10*f* extending at the front of said frame and between the forward members 10*d*. Member 10*f* is also shown as made from an angle bar having one web disposed in a vertical plane and connected to forward members 10*d* by the headed and nutted bolts 13 and having its other web horizontal, the same having extensions extending over members 10*e* and secured thereto by the headed and nutted bolts 14. Rearwardly of member 10*f* two channel members 15 and 16 are disposed with their open sides facing each other, the same having their top surfaces in the same plane as the top of member 10*f*. Said channels have the top portion thereof extending over members 10*e* and secured thereto by the headed and nutted bolts 17. Gage or guide members 18 are secured to the backs of channels 15 and 16 and extend a short distance above the same, said members having their ends reversely bent to engage the tops of said channels, the edges thereof being aligned with the sides of the slot 19 which separates the tops of channels 15 and 16.

A cutting device is associated with channels 15 and 16 and comprises a plate 20 extending downwardly, centrally through the slot 19, said plate having secured therein studs or axle members 21 having heads at their outer ends and on which are journalled rollers 23. Washers 23 separate plate 20 and rollers 22. As shown in Figs. 4 and 5, rollers 22 rest on the inner sides of the bottoms of channels 15 and 16 and are disposed within said channels. Above channels 15 and 16 plate 20 has secured at either side thereof plates 24 and 25, the same being secured by small headed and nutted bolts 26. Plates 24 and 25 extend beyond plate 20 at one end thereof and have secured therein the headed and nutted bolt 27 which forms the axle for a rotatable disk cutter 28 which is thus disposed between plates 24 and

25, said cutter extending downwardly into slot 19. As shown in Fig. 4, plate 20 is cut away on a radius somewhat larger than that of cutter 28. A curved arm 29 is pivoted between plates 24 and 25, the same having at its lower end a headed and nutted bolt 29a in which are journalled rollers 29b spaced so as to travel at each side of slot 19. Tensile coil springs 29c are secured to each side of arm 29 secured to plates 24 and 25 respectively. A handle is provided for the cutter mechanism, the same comprising a plate 31 bent into semi-cylindrical shape and having its free ends disposed along the sides of plates 24 and 25 at their top portions and secured thereto by the headed and nutted bolts 32. It will be seen that the cutter may be moved freely longitudinally of channels 15 and 16, rollers 22 substantially filling said channels.

A bar 34 extends between members 10e some distance in the rear of channels 15 and 16, the same extending across the tops of members 10e and being secured thereto by headed and nutted bolts 35. Right angle brackets 36 are secured to the ends of bar 34 by bolts 35 and other similar bolts 37, the same having their inner sides extending vertically and supporting a cylindrical rod 38 which extends therebetween. A flat bar 39 has a portion disposed in the rear of rod 38 and parallel portions 39a and 39b extending at right angles thereto through which rod 38 passes. The rear portion of bar 39 has secured therein a stud 39d carrying a roller 39e running on rod 38 and forming a support for bar 39 and measuring device 41. The portion 39a has its terminal bent laterally to engage portion 39 and extend in engagement therewith to the end of the latter, said parts being secured together by rivets 40. Member 39 thus forms a frame movable on rod 38 and said frame supports a measuring device 41 which comprises a friction wheel 41a, a graduated cylindrical member 41b and a graduated disk 41c. Members 41b and 41c are appropriately geared to wheel 41a to accurately register the amount of belting which passes beneath wheel 41a. Appropriate pointers 41d are associated with members 41b and 41c respectively. A handle 39c is secured to frame member 39 by which the measuring device can be moved. Said device can be raised to swing about rod 38 and the same has secured to the forward portion of frame 39, a vertical strip 42, the edge of which is adapted to move into any one of a plurality of slots 43a formed in the forward edge of the top web of an angle member 43 extending between members 10e and having its top surface in the same plane as the tops of members 15, 16 and 10b. The top web of angle member 43 extends over members 10e and is secured theretob by headed and nutted bolts 44. A bar 45 is disposed in a vertical plane above and rearwardly of bar 34 and is carried by a pair of angular brackets 46 secured to the tops of members 10e by headed and nutted bolts 47. Bar 45 is secured to brackets 47 by headed and nutted bolts 48. Members 50 made of comparatively thin somewhat flexible strips are secured to the front of bar 45 in spaced relation therealong by small screws 51. Members 50 extend downwardly into substantial engagement with bar 34 and have their terminal ends bent slightly upwardly. Members 52 formed of small flat bars are secured to the rear of bar 45 by small bolts 53 and extend downwardly vertically therefrom for a short distance having their lower ends somewhat tapered as shown in Fig. 6.

An angle bar 54 extends between base members 10a and is secured to the tops thereof. Angle bars 55 are secured to the ends of bar 54 and extend therefrom and from the tops of members 10a to the members 10e, being secured to the latter by bolts 56. A plurality of pairs of spaced bars 57 are provided, the same having their upper ends bent at right angles away from each other and secured to the bottom of bar 34 by the rivets 58. The ends of members 52 are aligned with the spaces between the pairs of bars 57 respectively. Bars 57 extend downwardly to and are secured to the bar 54. As shown in Fig. 1, the bars 57 are joined at their lower ends by short horizontal portions engaging bar 54, being secured thereto by the rivets 59. It will be seen that the bars 57 define a plurality of vertical spaces or chambers 57b of varying widths. The spaces between the pairs of bars 57 are transversely aligned with the spaces between the guide members 18 on the channel members 15 and 16. The sides of some or all of the bars 57 are provided with a plurality of downwardly extending slots 57a as shown in Fig. 2. These slots are adapted to receive the pins 60 which project from the ends of the core 61 on which the rolls of belting are wound.

Suitable brace members 63 and 64 made of small flat bars extend diagonally between the tops of members 10d and the members 10e and 10b respectively. The rear portion of members 10e have supported thereon an elongated box 65 rectangular in plan and transverse vertical cross section.

In the operation of the device rolls of belting of various widths may be disposed in the spaces 60 between the pairs of bars 57. In Fig. 1 three of such rolls are shown as 70, 71 and 72. The rolls 70 and 71 are supported upon pins 60 in the slots 57a. The rolls 72 and another roll 73 are supported upon bar 54 and the rear base bar of the frame. Roll 73 is disposed between the end members and one pair of the bars 57. Roll 73 is shown as having its end turned inwardly around a cylindrical block and being tied by a plurality of strands of cord 74. The block 65 can be used to support small bundles of round belting or boxes of various kinds of merchandise used in connection with belting as indicated by the box 75 shown in dotted lines in Fig. 2. When a piece of belting is to be measured and cut it will be placed in position as shown by rolls 70 and 71 and within the proper space 60 according to its width. The end of the belting can then be brought upwardly from the rear side of the roll as shown in Fig. 2 and passed over bar 34 under one of the resilient strips 50. This member presses the belting against the bar 34 so that it will not pass backwardly and it also holds the belting in the plane of the table formed by bars 43, channels 15 and 16 and the front bar 10f. The belting is moved forwardly under the friction rolls 71a of the measuring device. The disk 41c and cylinder 41b, one of which is graduated in feet and the other in inches, will be set at the zero mark and the belt can then be drawn forwardly under the roll 41a and the length of belt moved will be accurately registered on the members 41b and 41c. It will, of course, be understood that the frame 39 will be moved along on its guide bar 38 and that the measuring device will be brought in central position over the particular belt being measured and held in this position by the bar 42 engaging in one of the slots 43a. As shown in Fig. 3, the belt will move forwardly between a pair of the guiding members 18, which guiding members are secured to the chan-

nels 15 and 16 at either side of the belt. When the desired length of belt has been unwound from the roll the operator will grasp the top handle 31 of the cutting device. The cutting device will be moved some distance to the right of the piece of belt as shown in Fig. 3 and the operator will then move the cutting device quickly to the left and the belt will be cleanly and quickly severed by the cutting disk 28. The cutter is held down by the rollers 22 engaging the tops of the channels 15 and 16. Rollers 29b will roll up on the belting against the tension of springs 29c and will be held down in firm engagement with the belt so as to press thereon with great pressure due to the tension of springs 29c. The adjacent edges of rollers 29b are spaced a small distance just about the width of cutter 28. With this pressure on the surface of the material and the cutter 28 following closely adjacent rollers 29b, the surface of the material is very cleanly cut without any layer or portions of the surface being raised. The rollers roll a slight groove into the material causing a rib therebetween. Without the rollers 29b it has been found with some material the top surface of the material is apt to be raised. As stated, this is entirely prevented by rollers 29b and a very clean cut is secured.

From the above description it will be seen that I have provided a belt storing, measuring and cutting device of extremely simple form and yet one which is compact and by means of which the belting can be easily, quickly and conveniently handled, measured and cut. The structure is conveniently made of iron or steel stock of standard form and can be produced at comparatively small expense. The device has been amply demonstrated in actual practice, found to be very successful and efficient and is being commercially made.

It will, of course, be understood that various changes may be made in the form, details, arrangement and proportions of the parts, without departing from the scope of applicant's invention, which generally stated, consists in a device capable of carrying out the objects above set forth, in the parts and combinations of parts disclosed and defined in the appended claims.

What is claimed is:

1. A machine for measuring and cutting belting having in combination, a frame, means forming in said frame a plurality of chambers having much greater heighth than width, means for supporting rolls of belting in said chambers respectively, a table supported above said frame, a member extending across said frame in the rear of said table over which different lengths of belting may be passed to extend forwardly on said table, means engaging said belting to press the same against said member to prevent retrograde movement thereof, a measuring device connected to said frame, movable into alinement with any one of said chambers and past which one of said lengths of belting may be moved, said device being adapted to be engaged and operated by said belting to measure the same and means movable longitudinally of said table for cutting off the piece of belting measured.

2. The structure set forth in claim 1, a guiding means extending along the rear of said table and means on said measuring device engaging said guiding means to guide said measuring device in its movement into alinement with said chambers respectively.

3. The structure set forth in claim 1, a guiding means extending along the rear of said table, means on said measuring device engaging said guiding means movable longitudinally thereof and swingable about the same as an axis, a member extending longitudinally of said frame beneath said measuring means, said last mentioned member having slots therein and means on said measuring device receivable in any one of said slots to properly locate said measuring device in alinement with any one of said chambers.

4. A machine for measuring and cutting belting having in combination, a frame, means forming in said frame a plurality of chambers defined between vertical planes, means in said chambers for supporting rolls of belting, a table supported by and above said frame over which belting from said rolls may be forwardly moved and supported thereon, a pair of guide members extending longitudinally of said table having flat top surfaces and having a narrow slot extending therebetween, a carriage, rollers journalled in said carriage movable in said guide members and longitudinally of said table, a disk cutter revolubly mounted in said carriage and extending into said slot between said longitudinally spaced rollers, and means by which said carriage may be manually moved to move said cutter through a piece of belting overlying said slot.

5. A belt handling machine having in combination, a pair of channel members having their open sides facing each other, the tops of said channels being in the same horizontal plane and the same having a narrow slot extending therebetween, a plate extending into said slot, rollers secured at both sides of said plate and disposed respectively in said channels, the same having a diameter substantially equal to the width of said channels, plates secured to either side of said plate above said channels, a disk cutter carried between said latter plates and extending downwardly between said channels and means secured to the top of said plates for propelling said plates and cutter along said channels on said rollers.

6. The structure set forth in claim 5, said rollers comprising pairs of rollers, spaced longitudinally of said plate and channels, each pair having a common axis and the axis of said disk being disposed between the axes of said spaced pairs of rollers.

7. A belt handling and cutting machine having in combination, means for supporting a plurality of rolls of belting of different widths, a member over which belting can be passed from any one of said rolls, means engaging said belting and pressing the same against said member, a pair of slightly spaced members across which said belt moves substantially at right angles, guide members on said last mentioned members for engaging respectively opposite edges of said belt and means guided by said last mentioned members and comprising a rotatable cutting disk movable between said spaced members for severing said belt between said guide members.

8. A machine of the class described having in combination, a table having a narrow slot extending longitudinally therein, a cutter frame having guide means in said table below the top thereof, a rotatable disk carried by said frame and extending through said slot, rollers running on said table at each side of said slot ahead of said disk and carried by said frame and means for pressing said rollers against said table or the material to be cut thereon.

9. A machine of the class described having in combination, a table having a narrow slot there-

in; a cutter frame movable above said slot, pairs of rollers carried by said frame and spaced longitudinally of said table and slot, guides beneath the top of said table in which said rollers run, a rotatable disk cutter carried in said frame having its axis above said table and extending into said slot and a handle on said frame by means of which it may be grasped and moved longitudinally of said table and slot.

10. The structure set forth in claim 9, one roller of each of said pairs of rollers being disposed at each side of said slot.

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