Jan. 1, 1952 E. L. HODGES 2,581,190

TAPE DISPENSING REEL AND ANGLE CRIMPER

Filed May 10, 1948 2 SHEETS—SHEET 1

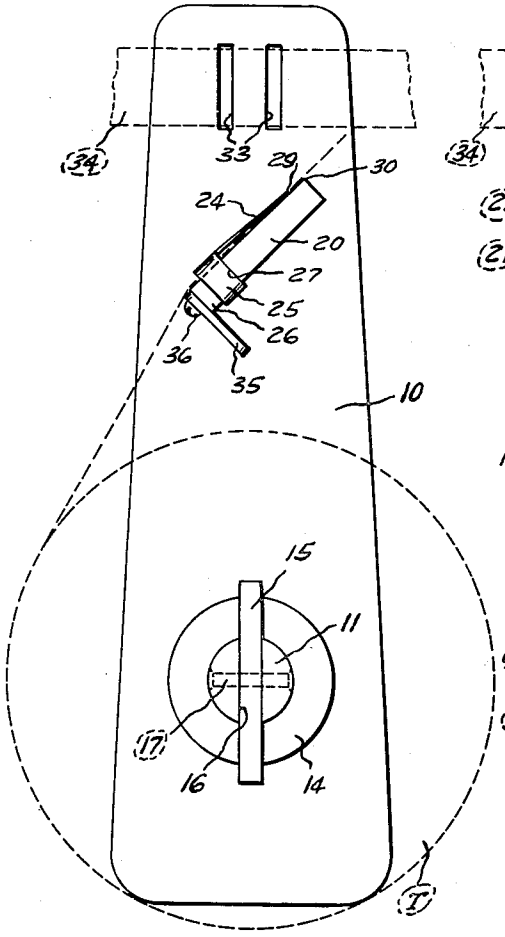


Fig. 1

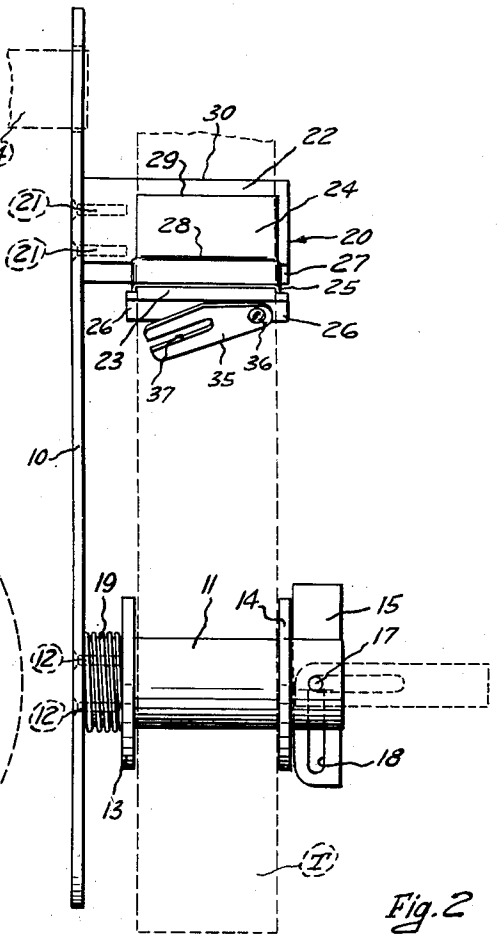


Fig. 2

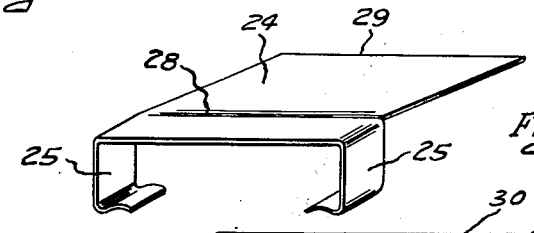


Fig. 4

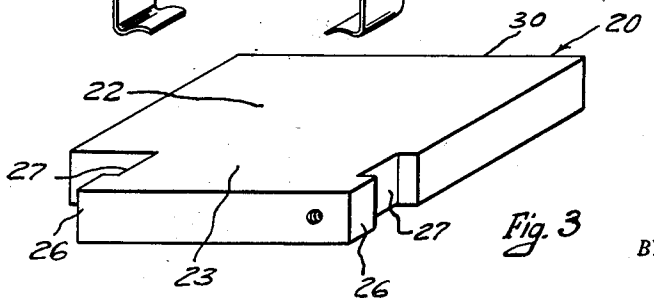


Fig. 3

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TAPE DISPENSING REEL AND ANGLE CRIMPER

Filed May 10, 1948 2 SHEETS—SHEET 2

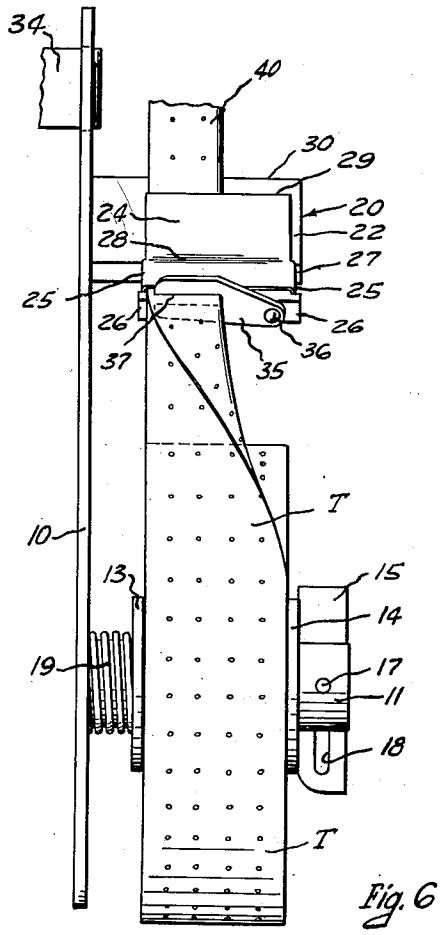


Fig. 6

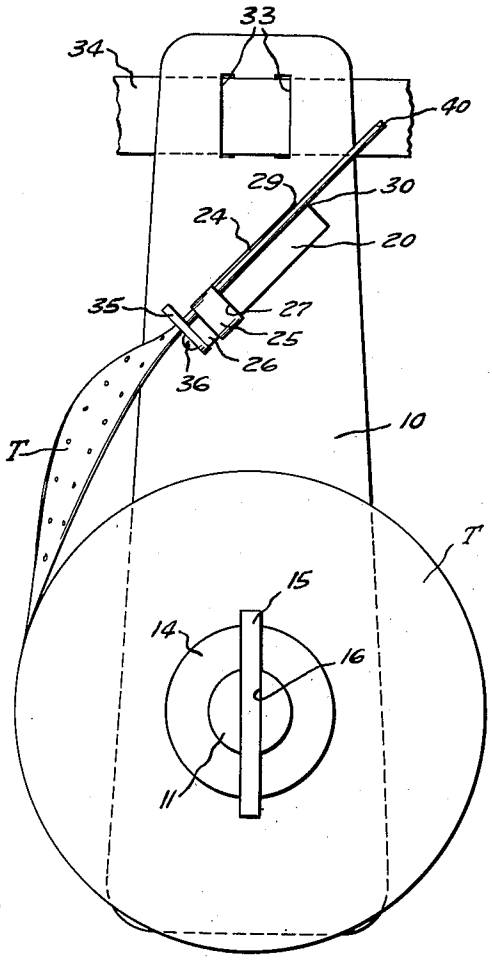


Fig. 7

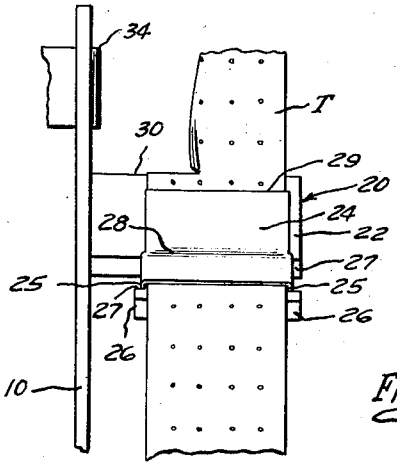


Fig. 5

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TAPE DISPENSING REEL AND ANGLE CRIMPER

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9 Claims. (Cl. 153—11)

1

This invention relates to new and useful improvements in tape dispensing reels and angle crimpers, and more particularly to such devices which are adapted to be used by painters and plasterers for holding and dispensing thin perforated metallic tape of the type which is used in bedding and sealing between joints of sheetrock and other plaster wall board.

It is one object of the invention to provide a reel for holding and dispensing thin perforated metallic tape and which is so constructed and arranged that it may be worn on the belt or elsewhere upon the person of the user.

Another object of the invention is to provide a tape dispensing reel, of the character described, which is provided with means for holding and guiding the loose end of the roll of thin metallic perforated tape in such a position as to be readily accessible and easily gripped by the user.

Still another object of the invention is to provide a tape reel, of the character described, which is provided with means permitting the tape to be cut or torn at any desired point to separate portions of the tape from the spool or roll thereof for use as needed.

An important object of the invention is to provide, in a tape reel and dispensing device of the character described, means for crimping or bending the tape along its longitudinal axis as the tape is withdrawn from the roll carried by the reel, whereby the tape is formed to fit corners or angles.

A further object of the invention is to provide in a tape reel and crimping device, of the character described, means for frictionally holding the roll of tape against undesired rotation, whereby the roll does not become loose and interfere with the movements of the user.

A still further object of the invention is to provide in a tape reel and crimping device of the character described wherein the roll of tape may be readily installed upon and removed from the reel.

Still another object of the invention is to provide a tape reel and crimping device of the character described which is simple in structure and economical to manufacture, which is compact in form, which may be worn on the person of the user, and which will not interfere with the normal movements of the user.

Additional objects and advantages of the invention will readily be apparent from the reading of the following description of a device constructed in accordance with the invention, and

2

reference to the accompanying drawings thereof, wherein:

Figure 1 is a front elevation of a tape reel and crimping device constructed in accordance with the invention,

Figure 2 is a view in elevation of the rear side of the device,

Figure 3 is an enlarged isometric view of the guide and cutting block,

Figure 4 is an enlarged isometric view of the spring clip for holding the tape on the guide and cutting block,

Figure 5 is a fragmentary side view of the guide and cutting block of the reel illustrating the manner in which the tape is cut or torn when desired,

Figure 6 is a view, similar to Figure 2, showing the crimper in use for folding the tape along its longitudinal axis, and

Figure 7 is a view taken at right angles to Figure 5 and showing the front of the reel with the crimper in use.

In the drawings, the numeral 10 designates an elongate flat base plate, which is flared slightly from its upper end to its lower end. A cylindrical spindle or shaft 11 is secured by means of screws 12 substantially centrally of the lower portion of the base plate and projects vertically outward therefrom. This spindle or shaft is adapted to receive and support a roll of thin perforated metallic tape of the type which is used for bedding and sealing between joints of gypsum type wall board, such as sheetrock. An inner washer 13 and an outer washer 14 are positioned on the spindle on each side of the roll of tape, and are held in place thereon by means of an elongate flat latch plate 15 movably mounted in a notch 16 formed in the end of the spindle. The latch plate is held in place in the notch by a retaining pin 17 which extends transversely of the spindle 11 and through an elongate longitudinal slot 18 formed in the latch plate and extending from a point near one end to a point substantially centrally of the latch plate. The pin 17 is bradded on each end for securing it in place in the spindle.

The latch plate is smaller in width than the diameter of the spindle, whereby the latch plate may be moved to the position shown in dotted lines in Figure 2 to permit a roll of perforated metallic tape T to be slid over the latch plate and onto the spindle. After the roll of tape has been mounted on the spindle, the outer washer 14 is replaced and the latch plate is moved to the position shown in full lines in Figure 2, whereby

the washer and tape roll are prevented from outward displacement from the spindle. A helical coil spring 19 surrounds the inner end of the spindle and is disposed between the base plate 10 and the inner washer 13. This spring positively resiliently maintains the roll of tape in position for use and likewise frictionally restrains the roll against undesired rotation upon the spindle, whereby the roll will not of itself become loosened and must be positively moved to withdraw portions of the tape from the roll.

A guide and cutting block 20 is secured to the base plate near its upper end by means of screws 21. The guide block extends perpendicularly outward from the base plate and is disposed at an angle to the longitudinal axis of said base plate so that the tape which is being unrolled from the roll T carried by the spindle 11 may be directed and will readily pass over the upper surface 22 of the guide block. A downwardly and rearwardly projecting neck portion 23 is formed integral with the guide block, said neck portion having a width less than the width of the guide block but substantially equal to the width of the thin metallic tape. A substantially rectangular spring friction clip or plate 24, having a pair of opposed downwardly then inwardly turned catches or wings 25 at its lower end, is mounted on the guide block with the wings 25 engaging around the neck portion 23 at the lower end of the block. Outwardly extending lugs 26 formed on opposite sides of the lower end of the neck portion 23 of the block provide notches 27 on each side of the neck for receiving the catch wings 25 whereby the spring clip 24 is retained in position on the guide block. The spring clip plate 24 is bent downwardly at an angle along a line 28 just above the wings 25, whereby the spring plate will engage firmly and resiliently against the upper surface 22 of the guide block and will positively frictionally restrain the tape, which is threaded between said spring clip and the upper surface of the guide block, against undesired movement. The upper end 29 of the spring clip terminates short of the upper edge 30 of the guide and cutting block, whereby the user may readily grasp tape extending beyond the end of the clip in a manner which will be hereinafter described.

A pair of spaced vertical slots 33 are provided at the upper end of the base plate 10 for receiving a belt 34 or other supporting means, whereby the reel assembly may be releasably secured to the waist or other parts of the person of the user.

In use, the thin metallic tape is mounted on the spindle 11, in the manner already described, and is threaded over the upper surface 22 of the guide block and beneath the spring clip 24, in the manner illustrated in dotted lines in Figure 1. The end of the tape will extend beyond the spring clip 24 and may readily be gripped between the finger and thumb of the user to permit unrolling lengths of tape from the roll. When a desired length of tape has been unreeled and pulled past the guide block, and it is desired to separate that portion of the tape from the remainder on the spool, the user will grip the spring clip 24 to press the tape downwardly against the upper surface 22 of the guide block and will bend the edge of the free end of the tape downwardly along the upper edge 30 of the guide block to part the tape along a line determined by such upper edge of the guide and cutting block, in the manner illustrated in Figure 5. The upper edge of the guide block thus serves as a cutting edge for parting the tape at desired points. The exposed end of the tape extending beyond the upper end of the spring clip plate on the upper surface of the guide block may then be engaged by the thumb or finger of the user to withdraw an additional length of tape from the roll.

When the tape is used for sealing or closing the joint between adjacent sections of wall board at corners or angles in the wall, the tape is folded upon itself along its longitudinal axis to form the tape in an angular shaped strip. This operation is called crimping the tape, and has heretofore been done manually by one operator installing the tape. Manual crimping or folding of the tape is a slow process and does not always produce a uniform angular or crimped strip, with the result that the joint closure may be irregular.

In order to facilitate the crimping or folding of the thin perforated metallic strip along its longitudinal axis, the crimping device illustrated in Figures 6 and 7 has been provided for automatically folding or crimping the tape as the same is withdrawn from the roll carried on the spindle of the reel and crimping device. An elongate flat crimper arm 35 is pivotally secured by means of a screw 36 to the lower end of the neck portion 23 of the guide block at a point near the outer edge thereof, as clearly shown in Figures 1 and 2, but the arm may readily be swung upwardly to the position illustrated in Figures 6 and 7 when it is desired to crimp or fold the tape along its longitudinal axis. The free end of the crimper arm 35 has an elongate crimping slot 37 formed therein, and the slot is so positioned that it extends parallel to the upper surface 22 of the guide block when the arm is raised to crimping position. The length of the slot is such that it terminates at a point substantially centrally of the neck portion of the guide block.

When the user of the device desires to crimp or fold the tape along its longitudinal axis, the free end of the tape is withdrawn from between the spring clip plate 24 and the upper surface of the guide block, and is bent or crimped along its longitudinal axis by hand for a short distance. The bent or crimped portion of the tape is then inserted in the slot 37 of the crimper arm with the bend at the inner end of the slot, and is then threaded between the spring clip plate and the upper surface of the guide block, as clearly shown in Figures 6 and 7. The user then grips the free end 40 of the tape and pulls the same upwardly, whereupon the tape withdrawn from the roll is automatically bent or folded or crimped along its longitudinal axis as it is drawn through the crimper slot. The inner end of the crimper slot, being located substantially centrally of the neck portion of the guide block and centrally of the flat tape strip, will positively cause the flat tape to be bent upon itself along its central longitudinal axis as the tape is withdrawn from the roll carried on the spindle of the reel. When the desired length of folded or crimped tape has been withdrawn, it may be parted or torn along the upper edge 30 of the guide block in the manner already described to cut off the desired length or portion thereof. The exposed end of the crimped or folded tape remaining in the device and etxending beyond the upper end of the spring clip plate on the upper surface of the guide block may then be engaged by the thumb or finger of the user to withdraw an additional length of crimped or folded tape from the reel.

After the desired amount of crimped or folded

tape has been used and it is desired to use the flat tape again, the operator may withdraw the folded or crimped portion of the tape from between the spring clip plate and the guide block and unfold the short crimped or folded section. The unfolded flattened end of the tape may then be reinserted or theraded between the spring clip plate and the upper surface of the guide block, whereupon the flat tape is again ready for use.

From the foregoing, it will be seen that an improved tape dispensing reel and angle crimper has been provided which is adapted to be used by painters and plasterers for holding and dispensing thin perforated metallic tape of the type which is used in bedding and sealing between joints of gypsum or plaster type wall board; and that the dispensing reel is provided with means for holding and guiding the loose end of the roll of tape in such position as to be readily accessible and easily gripped by the user. It will further be noted that the dispensing reel is provided with means permitting the tape to be cut or torn at any desired point to separate portions of the tape from the roll thereof as needed.

It will particularly be noted that the tape reel and dispensing device is provided with means for automatically crimping or folding the tape along its longitudinal axis as the tape is withdrawn from the roll carried by the reel, whereby the tape is automatically formed for fitting corners or angles as it is withdrawn. Furthermore, it will be seen that the tape reel is provided with means for holding the roll of tape against undesired rotation, whereby the roll does not become loose and interfere with movements of the user. Also, it is apparent that the tape reel is simple in structure and economical to manufacture, compact in form, may be worn on the person of the user and will not interfere with the normal movements of the user.

The foregoing description of the invention is explanatory only, and changes in the details of the construction illustrated may be made by those skilled in the art, within the scope of the appended claims, without departing from the spirit of the invention.

What I claim and desire to secure by Letters Patent is:

1. A tape dispensing reel including, a flat base plate, a spindle fixed at one end to and projecting perpendicularly from the base plate for supporting a roll of tape, a guide block carried by the base plate at a point spaced from the spindle and having a flat tape guiding surface extending perpendicular to the base plate, a resilient restraining clip detachably mounted on the guide block and having a resilient plate biased toward the guiding surface of the guide block for yieldably maintaining the free end of the tape in place on the guiding surface, and a tape cutting edge on the guide block at the edge of the guiding surface.

2. A tape dispensing reel and crimping device including, a base member, a spindle carried by the base member for supporting a roll of tape, a guide block carried by the base member and having a tape guiding surface, restraining means associated with the guide block for yieldably maintaining the free end of the tape in place on the guiding surface of the guide block, and a crimper member movably mounted on the guide block below the tape guiding surface, said crimper member being so constructed and positioned that it will automatically crimp the tape longitudinally as it is withdrawn from the roll, the restraining means associated with the guide block being constructed and arranged to guide and restrain the crimped tape, and a tape cutting edge on the guide block spaced from the crimper member.

3. A tape dispensing reel including, a flat plate base member, a spindle fixed at one end to and projecting perpendicularly from the base member for supporting a roll of tape, roll supporting washers carried by the spindle on each side of the roll of tape for supporting the tape in dispensing position, a pivotally mounted locking bar on the outer end of the spindle for releasably maintaining the roll of tape in position on the spindle, a guide block carried by the base member at a point spaced from the spindle and having a flat tape guiding surface extending perpendicular to the base member and a tape cutting edge at the edge of the guiding surface, and resilient tape holding means detachably carried by the guide block and having a resilient tape restraining plate biased toward the guiding surface and terminating short of the cutting edge on said guide block for yieldably maintaining the free end of the tape in place on the flat tape guiding surface of the guide block.

4. In a tape dispensing reel of the character set forth in claim 3, a helical coiled spring confined on the spindle between the base member and the supporting washer on the inner side of the roll of tape on the spindle for restraining the roll of tape against undesired rotation.

5. A tape dispensing reel and crimping device including, a base member, a support member carried by the base member for rotatably supporting a roll of tape, a guide member carried by the base spaced from the support member and having a tape guiding surface constructed and arranged to hold and guide the tape as it is withdrawn from the roll, a crimper arm movably mounted on the guide member and having an elongate slot formed therein arranged to lie parallel to the surface of the guide member when the crimper arm is in elevated position, said crimper arm slot being so constructed and arranged that when the strip of tape from the roll carried by the support member is initially folded along its longitudinal axis and inserted therein said slot will automatically crimp the tape longitudinally of its axis as the tape is withdrawn from the roll, said crimper arm being movable from crimping position to permit withdrawal of tape without crimping.

6. A tape dispensing reel and crimping device including, a base member, a spindle carried by the base member for supporting a roll of tape, a guide block carried by the base member spaced from the spindle and having a tape guiding surface, a resilient clip plate carried by the guide block and disposed to engage against the guiding surface of said block for yieldably maintaining the free end of the tape in place on such guiding surface, an elongate crimper arm swingably mounted on the guide block below the tape guiding surface, said crimper arm having an elongate slot therein so disposed that when the arm is elevated the slot is disposed parallel to the guiding surface of the guide block, the inner end of said slot terminating substantially centrally of the guiding surface, said crimper arm being swingable below the plane of the guiding surface of the guide block.

7. A tape dispensing reel and crimping device including, an elongate flat base plate, a cylindrical spindle disposed in the lower portion of the base plate and projecting vertically therefrom,

said spindle being constructed and arranged for rotatably supporting a roll of tape, guide washers movably mounted on the spindle and disposed on each side of the roll of tape, a helical coil spring surrounding the spindle and confined between the inner washer and the base plate, an elongate tape roll latch bar having an elongate slot extending from a point near one end to a point near the center thereof and mounted on a transverse retaining pin in a notch provided in the outer end of the spindle whereby the latch bar may be moved into and out of tape retaining position on the spindle, a guide block carried by the base member near its upper end and disposed at an angle to the longitudinal axis of the base plate whereby the strip of tape unrolled from the roll on the spindle will travel over the upper tape guiding surface of the guide block, a spring clip plate removably carried by the guide block and positioned to press the strip of tape against the tape guiding surface of the guide block for restraining the free end of such tape against undesired movement from said guide block, said clip plate terminating short of the upper end of the guide block, the upper edge of said guide block being sharpened to form a cutting edge for parting or cutting off sections of the free end of the tape.

8. A tape dispensing reel and crimping device including, an elongate flat base plate, a cylindrical spindle disposed in the lower portion of the base plate and projecting vertically therefrom, said spindle being constructed and arranged for rotatably supporting a roll of tape, guide washers movably mounted on the spindle and disposed on each side of the roll of tape, a helical coil spring surrounding the spindle and confined between the inner washer and the base plate, an elongate tape roll latch bar having an elongate slot extending from a point near one end to a point near the center thereof and mounted on a transverse retaining pin in a notch provided in the outer end of the spindle whereby the latch bar may be moved into and out of tape retaining position on the spindle, a guide block carried by the base member near its upper end and disposed at an angle to the longitudinal axis of the base plate whereby the strip of tape unrolled from the roll on the spindle will travel over the upper tape guiding surface of the guide block, a spring clip plate removably carried by the guide block and positioned to press the strip of tape against the tape guiding surface of the guide block for restraining the free end of such tape against undesired movement from said guide block, said clip plate terminating short of the upper end of the guide block, the upper edge of said guide block being sharpened to form a cutting edge for parting or cutting off sections of the free end of the tape, an elongate crimper arm pivotally mounted on the lower end of the guide block and having an elongate slot open at one end formed in the free end portion of said arm, said slot being so positioned as to extend parallel to the upper tape guiding surface of the guide block when the arm is in elevated position, said arm being retractable from elevated position to a point below the plane of the upper tape guiding surface of the guide block, the inner end of the crimper slot being rounded and terminating substantially centrally of the tape guiding surface of the guide block, whereby the strip of tape being withdrawn from the roll on the spindle may be folded along its longitudinal axis and inserted in the slot with the fold positioned at the inner rounded end of the slot so that upon continued withdrawal of tape from the roll the crimper arm slot will automatically crimp the tape longitudinally of its axis as it is withdrawn, said spring clip plate also being arranged to hold the crimped tape strip against undesired movement on the tape guiding surface of the guide block.

9. In a tape dispensing reel and crimping device of the character set forth in claim 8, a pair of spaced longitudinally extending slots formed in the upper end of the base plate for receiving a supporting belt, whereby the dispensing reel and crimping device may be secured to the person of the user.

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