PASPARTOUTING MACHINE FOR LAMP SHADES, BASKETS, AND THE LIKE

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The word "paspartout" comes from the French and in the commercial field means "to affix" tape upon the lamp shade or the like for ornamental as well as for reinforcing purposes.

Herein is described a method of making lamp shades, or paper baskets, pictures, frames, and the like, the tape, which is generally of ornamental design, has been affixed upon the shade by hand. The tape has glue or some adhesive material on one side, and this side is brought into contact with the area to be paspartouted. First the tape is cut the proper length, then the adhesive side of the tape is dabbed with water by a brush or sponge, and finally the tape is properly placed on the desired edge of the shade so that a small portion of the tape width will encircle the wire frame and adhere to the under side of the shade, and the larger portion of the tape width will adhere to the outer side of the shade along the desired edge. The top edge of the tape may be cut in an ornamental design, such as the familiar scalloped edge formation. The tape is generally cut on the bias, but it may also be cut transversely with the tape and it may be obtained in various colors to suit the design of the shade. Girls working at a low rate of compensation are generally employed to paspartout or to affix the tape upon the shade. The following disadvantages of the above method will readily be noted:—The method is slow and inefficient and considerable difficulty is encountered to accurately and uniformly affix the tape to the shade over its entire circumference, the operators' handling of the dabbed tape results in soiled hands which are very apt to soil or dirty the shade, and dabbing the tape with a brush, sponge or the like has the effect of wiping off part of the glue and not properly moistening the remainder of the glue so that a low degree of adhesiveness is obtained between the tape and the shade. Due to the above defects, it is conservatively estimated that 25% of the lamp shade manufactured are defective either at the place of manufacture or by the trade in the form of returned goods.

Our invention will be described for use on lamp shades only, but it will be understood that it is equally applicable to waste-paper baskets, pictures and all other devices requiring the affixation of tape or the like.

The principal object of the invention is to provide simple, efficient, durable and fast operating apparatus for paspartouting the tape upon the shade without soiling the shade or even the operator's hands.

A further object of the invention is to provide a machine of the class described which will accurately and uniformly affix the tape upon the edges of the shade.

A further object is to provide a novel and highly efficient method of moistening the glue on the tape so that the entire layer of glue is used to secure a very high degree of adhesiveness. This is accomplished by the use of steam vapor under pressure to moisten the glue and by the pressure of several cooperating drums on both sides of the tape and shade to firmly affix the tape while it is under tension when being affixed upon the shade. It will be noted that none of the glue is wiped off and that all the glue, including the tape becomes very flexible because of the action of the hot steam vapor under pressure upon the tape.

A further object of the invention is to provide a novel method for paspartouting the tape tautly around the frame of the shade and also over any irregularities in the diameter of the frame due to staples and the like. This is accomplished by the use of a split drum under proper spring tension.

A further object of the invention is to provide a tape cutting mechanism which cuts the tape at any predetermined length as desired for the particular circumference of shade being paspartouted.

A further object of the invention is to provide a novel and highly efficient method for carrying out the paspartouting of the tape upon the edges of the shade by operating at a high speed, and in an economical and efficient manner so as to minimize the number of defective shades.

A further object of the invention is to provide a machine for the above described purposes and one which will render very few defective shades, if any, so that after the general inspection, no shades will be returned by the trade because of unsatisfactory paspartouting of the tape upon the shade.

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 top plan view of the machine with a section of the cover for the tape holding disk cut away to show the roll of tape;

Fig. 2 is a front side view of the machine without any tape on the holding disk or in the guide;
Fig. 3 is a rear side view of the same, but with tape in the guide and with a portion of the water container below the water jar cut away to show the passage for the water to the steam boiler and with the lower right corner of the base cut away to show the lever mechanism; Fig. 4 is a front end view of a portion of the machine with the scalloped edge tape being passed upon the lamp shade which is held in proper position by its adjustable holder; Fig. 5 shows an electrical connection diagram of the motor, the electromagnet for operating the tape cutting mechanism and the heating element for the electric steam boiler; Fig. 6 shows an enlarged front end view of the electromagnet and lever mechanism therewith for operating the tape cutter with a hammer blow; Figs. 7 and 8 showed cross-sectional views of the tape guiding mechanism taken along the lines 7-7 and 8-8 of Fig. 3 respectively; Fig. 9 shows an enlarged cross-sectional view of the guide and its support taken along the line 9-9 of Fig. 3; Fig. 10 shows an enlarged cross-sectional view of the upper and lower drums taken along the line 10-10 of Fig. 3, but with the addition of a portion of the shade in the process of being pastaptout; Fig. 11 shows an enlarged top plan view of the lever mechanism for engaging the upper drum under spring tension and thereafter closing the electrical contact for energization of the motor. This may be understood by referring to the top plan view along the line 11-11 of Fig. 3; Fig. 12 shows an enlarged front side view of the same lever mechanism and electrical contacts; Fig. 13 shows an enlarged front end view of the electrical contact with part of the lever mechanism, and Fig. 14 shows an enlarged side view of the float and valve for the steam boiler taken along the line 14-14 of Fig. 1.

In the drawings B represents the base with a hollow interior section and upon which is mounted a source of mechanical power, preferably a fractional horse-power motor M suitable for the frequency and voltage of the source of electric power supply. A universal single-phase series motor for energization by 115 volts and from one-tenth to one-fiftieth horse-power rating and having a suitable speed reducer will be satisfactory. Other sources of mechanical power may equally well be used to drive the machine, including a crank for manual operation. The motor M through its speed reducing system which is integral with the motor M has a slow speed shaft 15 upon which is affixed the driving gear 16. The driving gear 16 engages the idling gear 17 which in turn drives both the lower drum gear 18 and 19. With the operating lever L in engaging position as clearly shown in Figs. 1, 2 and 4, the upper drum gear 20 is in the lowered position under spring tension so that the upper drum gear 20 meshes with the lower drum gear 19. Thus with the slow speed shaft 15 of the motor M rotating in clockwise direction when looking at the slow speed shaft 15, it will be apparent that both lower drum gears 18 and 19 will rotate in the same direction while the upper drum gear 20 will rotate in counter-clockwise direction. For convenience, all gears have the same diameter and number of teeth in the drawings, but variations may be made in the two gears 16 and 17 to obtain other operating speeds.

An upright supporting member 21, preferably a casting, is rigidly affixed to the base B at its lower end by means of several screws 22. The upper end has three bearings properly located and machined for shafts 23, 24 and 25. Shaft 23 is affixed to the idling gear 17. The head of shafts 24 and 25 are constructed in the form of a drum or roll 26 and 27 respectively to form a pulley for the belt 28 to travel over. The shafts 24 and 25 are each provided with a shoulder or collar 29 to hold the drums 26 and 27 in proper operating position, as clearly shown in Fig. 10. The shafts 24 and 25 are supported by their bearings in the upright supporting member 21 and extend therethrough so that the two lower drum gears 18 and 19 may be rigidly affixed by means of small keys to the extensions of shafts 24 and 25 respectively. The upper drum gear 20 is rigidly affixed to the front end of shaft 29 which is supported by its bearing 31. The arm 32, which carries the bearing 31 is pivotally mounted on the pin 33 which is supported by the top of the upright supporting member 21, as best shown in Figs. 1 and 4. The bearing 31 is affixed to the rod 24 and 25, the latter being under spring tension by means of spring 36, as shown in Fig. 12. The split drum may be raised to insert or remove the shade S from the machine and it is lowered to bring pressure upon the shade S and tape T to form the tape and drive the shade S and tape T through the machine.

Referring to Fig. 10, the rear portion of the shaft 30 is constructed in the form of a split drum or roll so as to take care of irregularities in the diameter of the frame F of the shade S due to staples or other thickness variations in or about the frame F. The female member 37 of this split drum may be constructed integrally with the shaft 30. The male member 38 is yieldingly held in position by means of a spring 39 and screw 40. The annular U-shaped groove 41 is formed by the cooperation of members 37 and 38 so that approximately half of the groove is in the female member 37 and the other half in the male member 38. The diameter of the annular groove 41 is approximately equal to that of the frame F plus the thickness of two layers of the cloth of tape T without any glue thereon. Thereby the U-shaped groove 41 fits snugly about the tape T and frame F, and if some variation in diameter is encountered, due to staples being fastened around the frame F and shade S at various points or due to any other causes, the spring 39 will yield sufficiently to pass over such variation without losing its snugness about the tape T and shade S. A small pin 42 is rigidly affixed to the inner face of the female member 37 and protrudes into an oversize cylindrical hole 43 in the outer face of the male member 38. Thus when the shaft 30 rotates, the pin in engagement provides positive action so that the male member 38 must also rotate in unison with the female member. The annular face of the male member 39 is provided with a cylindrical resilient tire 44 made pref. crably of suitable rubber material. This tire 44 in combination with the belt 28 furnishes sufficient tractive power to force the shade S between the drums during which process the tape T is pastaptout upon the shade S.
Bracket 45 is affixed to the under face of the base B by means of a screw 46 and carries a pin 47 on which the lever 43 is pivotally mounted as clearly shown in Figs. 11, 12 and 13. The front end of lever 43 is held in operating position by means of another bracket 49 which is also affixed to the under face of base B. Spring 50 is seated in the bracket and directly beneath the lever 48 so that the normal position of the lever 45 will be in the raised position in which case the upper drum gear 20 is not in engagement with the lower drum gear 19 and the motor is at rest. When the motor is operated sufficiently, the lower drum gear 19 will turn so that the teeth of its gear 19 will mesh with those of the upper drum gear 20 which is under the tension of spring 36.

The shade S is held in proper position by means of an adjustable holder. The selected arm 53 is affixed to the base B by screws 54 as clearly shown in Fig. 4. The extendable bar 55 with a silt in it is held in any desired position within the slot of arm 53 by means of the thumb screw 56, the head of which is rigidly affixed to arm 53 to prevent turning. A vertical bar 57 with a silt in it is affixed to the rear extremity of the extendable bar 55 by means of screws 58. A cylindrical roller 59 is rotatably mounted on screw 60 which is affixed to the top of the vertical bar 57 and at a proper height to correspond with the top surface of the belt 23 on the drums 25 and 27. An arm system comprising arms 61 and 62 rotatably mounted on screw 63, and arms 63 and 64 rotatably mounted on the thumb screw 65 is provided. The other ends of arms 61 and arm 62 are rotatably mounted on a tapered roller 67, this roller being tapered to accommodate the taper of the shade S. The other ends of arm 62 and arm 64 are similarly hinged and carry the tapered roller 66. It will be readily noted that the above described holder will accommodate various heights, diameters and tapers of shades by only adjusting the two thumb screws 56 and 65.

An upright supporting member 94 for supporting the tape holding mechanism, preferably a cast iron, is rigidly affixed at its lower end to the base B in such a manner, one inch back by several screws 70. The upper end of supporting member 94 carries a vertical shaft 71, the extremity of which is threaded to take the thumb nut 72. The tape supporting disk 73 rotates freely about the vertical shaft 71 by means of a ball bearing 74. The cover 75 for the proper position by the thumb nut 72 so that the exit 76 for the tape T is in approximate alignment with the guide G. Fig. 1 shows a section of the cover 75 cut away so that a portion of the roll of tape T is shown and the manner in which it passes through the exit 76 and into the guide G.

The guide G for turning and guiding the tape to the tape applying mechanism comprises two metal plates 77 and 78 with two strip spacers 79 and 80 between the plates at the top and lower edges so that the tape T may easily pass through. The plate 78 does not extend to the top of the guide G in order to leave space for the spray of steam which will hereafter be fully described. Plate 77 forms the tip as illustrated in the enlarged cross-sectional view of Fig. 9. The tape may be raised or lowered within the guide G by means of screw 81 which raises or lowers the short strip 83 at the front end of the guide G.

In order to obtain proper tension and the correct length for cutting the tape T, a cylindrical drum 83 with a resilient tire 84 is provided to bear upon the tape T through the rectangular slot 85 in the plate 77. On the opposite side of the guide G, an adjustable flat spring 86 with rotatable roller 87 is provided to bear upon the tape T through a small rectangular slot 88 in the plate 77. It will be also noted that the guide G is downwardly inclined at a small angle so that the resilient tire 84 of cylindrical drum 83 will bear upon the tape T to keep the tape up against the top spacer 79 of guide G as clearly shown in Fig. 7. The guide G is supported at its tail end by a V-shaped bracket 88 which is rotatably mounted on the vertical shaft 89, and its tip end is supported on a small bar rest 90.

The tip is yielding held in its proper position by a protruding pin 91 under tension of spring 92 as best shown in Figs. 1 and 9. The tip of the guide G is prevented from sliding too far back by the vertical projection 93. The above construction provides for uniformity in paring the tape T to prevent the possibility of variations in the diameter of frame F or to staples around the frame F and shade S. It will be seen that the operation of the cutting mechanism is dependent upon the frictional engagement of the cylindrical drum 83 to the tape and that the movement of the tape through the guide G is controlled by the gear movement of the drums which are driven by the motor.

A center upright supporting member 94 has its lower end rigidly affixed to the base B by several screws 95. The upper portion forms a bearing for the vertical shaft 88 which carries the cylindrical drum 83 and the knurled knob 96 which may be used to rotate the drum 88 by hand. The lower end of the vertical shaft 88 carries a small spiral gear 97 which is in engagement with a larger spiral gear 98. Any gear ratio may be used, but a one to four ratio provides a convenient one in that the tape T for any shade S up to 24 inches in diameter may be measured and also cut by means of a six inch disk 99. The larger gear 98 is affixed to the shaft 100 which has two conventional bearings 101 on the right side of center upright supporting member 94 and the other bearing 101 being in the arm 102 which is affixed to the center upright supporting member 94 by several screws 103. A disk 104 with a resilient tire 105 is mounted on the shaft 100 and its position can be longitudinally varied by turning the hand 116 of wheel 107. A longitudinal keyway 103 in the shaft 109 engages with a traveling key 109 affixed to disk 104, so that the disk 104 must rotate in unison with shaft 100 at all times. The wheel 107 is affixed to the long threaded screw 110 which has bearings in the end and base portion of the arm 102. The fork 111 is internally threaded to fit
the long screw 110 and its upper U-shaped portion engages an annular groove 112 which is integral with the disk 104. The six inch disk 99 is held in a vertical plane and under spring tension by means of spring 113 so that the face of the disk is always in contact with the resilient tire 105 of disk 104.

The face of the arm 102 has a calibrated scale on it which corresponds to the diameter of the shoulder S. A pin 114 is affixed to the face of the disk 99 and for each revolution, the pin 114 operates to close the electrical contact of 115 and 116 which energizes the electromagnet to cut the tape T at the proper length to correspond with the disc 111 and the calibrated scale of arm 102.

The electromagnet consists of a suitable coil 117 wound on a laminated core 118 and armature 119, and is affixed to the base B by several screws. The armature 119 is connected to a lever 120 which has a hook at its forward end which allows for a hammer blow on the pin 121 when the coil 117 is energized. Pin 121 is firmly secured to the bottom of the cutter C, and the stationary member 122 of the cutter mechanism is securely affixed to the plate 74 of guide G by means of screws 123. The cutter C is mounted within the guide G so that the tape T is always under control and a spring is attached to the lower end of cutter C to pull the cutter C back so as to always leave the guide G open except while the tape T is being cut. The cutter C cuts the tape T at an angle so that the tip of the roll of tape T will be in position to adhere to the shade S and thereby the tape will be in alignment for starting the next paspartout operation. Thus, if a shade of sixteen inches in diameter is being paspartouted, the handle 106 is rotated so that the arrow of fork 111 coincides with division "16" on the scale. As the tape T is being paspartout upon the shade S, it drives the six inch disk 99 through its series of shafts, gears and disk as explained above to the position where the pin 114 carries the contact arm 115 down until it snaps back to close the electrical contacts 115 and 116 which energizes the electromagnet coil 117. This closes the armature 119 which strikes the cutter C with a hammer blow during the latter half of the armature travel. The cutter C operates in conjunction with the stationary member 122 to cut the tape T at being just the proper length for the circumference of the respective shade S.

Steam vapor is used to moisten the glue on the tape T as it is being paspartouted upon the shade S. Any source of steam vapor may be used in conjunction with the guide G and the jar J. We have shown one convenient source in the form of a small steam boiler A insulated from but affixed to the base B by screws 124. The steam boiler A consists of a cylindrical boiler 128 with an electric immersion heating element 129 mounted therein near the bottom and a steam dome 127 mounted on top of the boiler 128. From this steam dome 127, the steam is passed through conduit 128 and directed upon the glue of the tape T. The end of conduit 128 may be flattened or shaped to better direct the spray of steam vapor. The steam vapor which contains about two-thirds of full water by means of the jar J which contains an ample supply of water. The jar J is held in position by its basket-shaped holder 129 and has sufficient capacity for at least a day's operation. The proper level of water in the steam boiler A is obtained by the use of a float valve. The water inlet pipe 130 is affixed to the end 132 of pipe 125 and the said pipe 131 projects inwardly into the boiler and terminates by the valve seat 132 as best shown in Fig. 14. The valve blade 134 is closed or opened by the raising or lowering, respectively, of the float 135, and the valve blade 134 is operated by the tape operating position 136 of the valve guide 133 which consists of a narrow slot to accommodate the thickness of the valve blade 134. Other means of holding the water at the proper level may equally well be used, such as a sight glass cock, pressure gauge, pump and the like.

The operation of our machine may best be explained by going through the sequence of operations for paspartouting a shade. The desired tape T is placed in the tape holding mechanism and the end of the tape T is passed through the guide G and the jar J. The water is added to the water in the steam boiler A and placed in its holder which then forces the proper amount of water into the steam boiler A. The operating lever L is in the vertical position so that the split drum is in the raised position. The electrical connection plug 138 is inserted into the electric supply which energizes the electric immersion heating element 136 in the steam boiler A to produce a uniform flow of steam in a few minutes. As soon as the steam flows from the conduit 124, the machine is ready for continuous duty. The operator places the shade S in the shade-holding mechanism with the edge to be paspartouted between the split drum and the belt 26 on the two drums 26 and 27. The operating lever L is now brought into engaging position by turning it approximately ninety degrees to the right. This brings the upper drum gear 20 into engagement with the lower drum gear 19 so that the annular groove 41 of the split drum bears upon the frame F of the shade S and then starts the motor M which drives the belt 28 and split drum in directions so that the shade S will rotate to the left when viewed from the head. The tape T is now being paspartout or affixed over the wire frame P and upon the shade S by the rotation of the tape T and shade S between the pressure of the split drum and the belt 28. When the proper length of tape T has been obtained, the electric contact at 115 and 116 is closed which energizes the electromagnetic cutting mechanism and thereby cuts the tape T at the proper length. The shade S now has the tape T affixed to its entire circumference and the operating lever L is brought to the non-engaging position so that the motor M is stopped and the drum 27 is removed therefrom. The next shade S is then similarly placed in the holding mechanism and since the tape T is already within the guide G, it is only necessary to turn the knurled knob 36 until the tape T reaches the belt 28 after which the tape T adheres to the shade S and the paspartout operation thereafter follows the same steps as described above.

It will be understood that our machine is not limited to the use of a single drum or a split drum as the upper member, because it is obvious that identical components may also be used. It will also be understood that two or more drums may be utilized for the other member and that our invention is not limited by the number of drums used.

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

What is claimed is:

1. A device of the type described comprising, cooperative elements for applying an adhesive tape in a progressively advancing manner along an article, tape guiding mechanism, and a steam outlet directed against the adhesive side of the tape.

2. A device of the type described comprising, cooperative elements having at least one rotatable element for applying an adhesive tape to an article, tape guiding mechanism, and a steam outlet directed against the adhesive side of the tape for moistening the adhesive material just prior to the functioning of said cooperative elements upon the tape.

3. A device of the type described comprising cooperative elements for applying an adhesive tape to the edge of an article, tape guiding mechanism for directing the turned tape in the form of a strip of U-shaped cross-section, means for holding an article with an edge exposed for application of said tape, means for moistening all the adhesive material on the tape, and cooperating elements for forcibly applying said guided tape progressively about said edge of the article.

4. The structure set forth in claim 5, wherein said steam outlet has a flattened discharge end adapted to discharge steam in ribbon-like form.

5. A paspartouting machine comprising mechanism for turning a continuous tape longitudinally and for guiding the turned tape in the form of a strip of U-shaped cross-section, means for holding an article with an edge exposed for application of said tape, means for moistening all the adhesive material on the tape, and cooperating elements for forcibly applying said guided tape progressively about said edge of the article.

6. The structure set forth in claim 5, wherein said cooperating elements function to withdraw the tape in a continuous direction.

7. The structure set forth in claim 5 wherein said cooperating elements function to move both the article and the tape in a continuous direction as well as to withdraw the tape.

8. A device of the type described comprising a pair of cooperative tape applying elements, a belt traveling over one of said elements, the other element cooperating with said belt to engage a strip of tape and apply the same about the edge of an article, and tape guiding mechanism to turn and to direct the turned tape about the edge of said article.

9. A device of the type described having in combination, a source of power, a pair of cooperating tape applying elements driven by said source of power, a belt traveling over one of said elements, the other element cooperating with said belt to engage a strip of tape and apply the same about the edge of an article, and tape guiding mechanism for turning a continuous tape longitudinally and for guiding the turned tape in U-shaped cross-sectional form to the said cooperative tape applying elements.

10. A device of the type described having in combination, a source of power, a pair of cooperating tape applying elements driven by said source of power, a belt traveling over one of said elements, the other element cooperating with said belt to engage a strip of tape and to apply the same about the edge of an article, said last mentioned element being composed of two members under pressure toward each other in the axial direction, an annular groove on the face of said last mentioned element and a tape guiding mechanism for turning a continuous tape longitudinally and for guiding the turned tape in U-shaped cross-sectional form to the cooperating tape applying elements.

11. A device of the type described having in combination, a source of power, a pair of cooperating tape applying elements driven by said source of power, a belt traveling over one of said elements, the other element cooperating with said belt to engage a strip of tape and to apply the same about the edge of an article, a tape guiding mechanism for turning a continuous tape longitudinally and for guiding the turned tape in U-shaped cross-sectional form to the cooperating tape applying elements, and a tape cutting mechanism for cutting the tape at a predetermined length.

12. A device for paspartouting an article having in combination, a tape holding mechanism, means for withdrawing the tape from the said tape holding mechanism, tape cutting mechanism for cutting the tape only and means for controlling the said cutting mechanism dependent upon the withdrawal of a predetermined length of tape.

13. A device for paspartouting an article having in combination, a tape applying mechanism, a tape holding mechanism, means for withdrawing the tape from the said tape holding mechanism, tape cutting mechanism operable upon the tape before application to the article and means for controlling the said cutting mechanism dependent upon the extent of operation of said tape applying mechanism.

14. A device of the type described comprising the combination of a tape guiding mechanism for directing the passage of the tape, an adjustable cutter mechanism associated with said tape guiding mechanism, an electromagnet for operating the cutter mechanism, an electric circuit including said electromagnet, a switch for controlling said circuit, and means for applying the tape to an article from a continuous strip of tape.

15. A method of paspartouting or affixing a continuous adhesive-carrying tape upon an article which consists in directing steam vapor upon the adhesive of the tape at a predetermined time before applying the tape upon the article and thereafter pressing the adhesive side of the tape against the article.

16. A method of paspartouting or affixing a continuous adhesive-carrying tape upon an article which consists in directing steam vapor upon the adhesive of the tape and thereafter pressing the adhesive side of the tape against the article by passing the tape and article between continually advancing co-active pressure members so that the tape becomes firmly affixed upon the said article.

17. A method of paspartouting or affixing a continuous adhesive-carrying tape upon an article which consists in directing the tape through a guiding mechanism, directing steam vapor upon the adhesive of the tape at a predetermined time before applying the tape upon
the article and thereafter pressing the adhesive side of the tape against the article by passing the tape and article between mutually co-active pressure members so that the tape becomes firmly affixed upon the said article.

18. The method of paspartouting or affixing an adhesive tape upon an article which consists in turning a continuous tape longitudinally, guiding the said turned tape in U-shaped cross-sectional form, and progressively applying the turned and guided tape to the edge of the said article by a yieldable force on one side and a non-yieldable force on the opposite side, said forces being exerted upon substantially the entire edge of the said article.

19. A method of paspartouting or affixing adhesive tape upon an article which consists in directing the tape to the edge of the shade to be paspartouted, folding the tape longitudinally, moistening the adhesive of the tape by steam vapor and applying the tape adhesively upon the said article by a yieldable force on one side and a non-yieldable force on the opposite side, said forces cooperating.

20. A method of paspartouting or affixing adhesive tape upon an article which consists in directing a continuous length of tape to the edge of the shade to be paspartouted, folding the tape longitudinally, moistening the adhesive of the tape by means of steam vapor, and progressively applying the tape to the edge of the shade and cutting only the tape after a predetermined length has been applied to the article.

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