

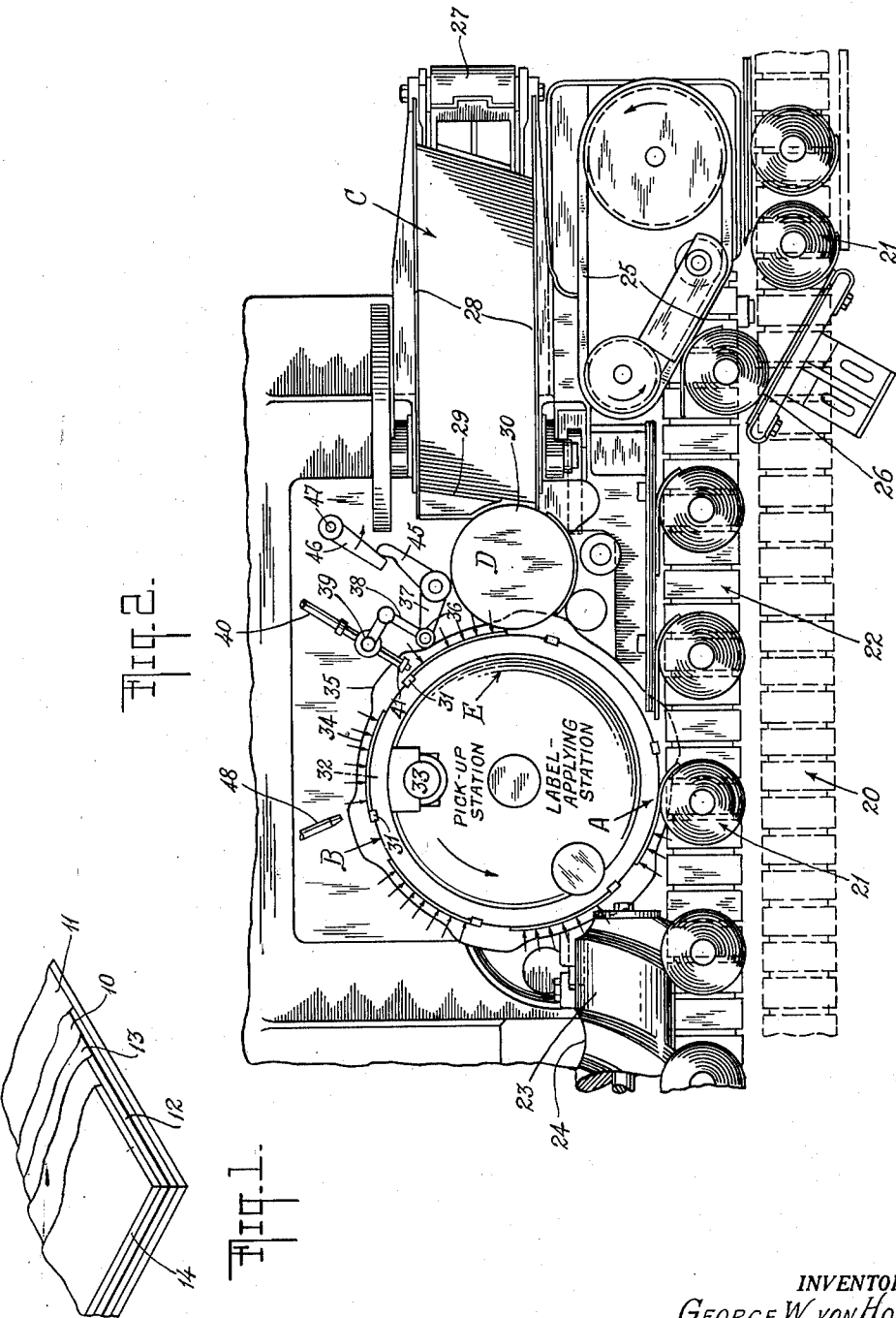
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G. W. VON HOFE

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METHOD OF AND APPARATUS FOR ACTIVATING LABELS

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INVENTOR.
GEORGE W. VON HOFE
BY
John F. Hart
ATTORNEY

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METHOD OF AND APPARATUS FOR
ACTIVATING LABELS

George W. von Hofe, Bound Brook, N. J., assignor
to New Jersey Machine Corporation, Hoboken,
N. J., a corporation of New Jersey

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1

This invention relates to labels and labeling apparatus, and more particularly to the activation of adhesive coatings on labels or sheets and the application of the latter to articles.

Labels and sheets of a like nature are laminated structures composed usually of a paper sheet and a layer of adhesive material, or such materials, and a layer or layers of other materials such as metallic foil, lacquer, varnish, etc. Because of the many advantages of heat activatable thermoplastic materials, they are being used to an increasing extent as adhesive coatings for labels. However, the fact that such thermoplastic adhesive materials require a relatively high degree of heat to become adhesively activated, has brought into being many problems which are considered very serious by the label art. In those cases where the label consists of a printed paper sheet and a layer of heat activatable adhesive material, and particularly in the case of a large label, it often happens that after such a label has been applied to a package, blisters develop in the label. These blisters detract much from the appearance of the label and make it readily susceptible to mutilation. I believe that the cause of these blisters can be traced directly to the heat required to activate the thermoplastic coating on the label. The application of such heat drives out the normal moisture content of the paper layer of the label, thereby causing such layer to shrink. After such label is applied to a package, the dehydrated paper layer absorbs moisture from the atmosphere and tends to expand back to its original size. Because of such expansion, those portions of the label which are imperfectly adhered to the surface of the package are caused, it is believed, to separate from the package and form blisters.

In those cases wherein the laminated structure of the label includes a layer of material, having a substantially different coefficient of expansion than the paper layer, such as aluminum foil, the application of heat to activate the heat activatable adhesive will cause the label to become distorted or to curl. This condition is aggravated by the fact that while the foil has a relatively high coefficient of expansion as compared to that of the paper layer, the paper layer under the applied heat will not expand, but on the contrary will shrink as the normal moisture content thereof is driven out, as has been hereinabove pointed out. This shrinkage of the paper layer and relatively great expansion of the metal foil will cause an excessive curling of the label to take place. This characteristic of these metallic

2

foil labels becomes of vital importance when it is desired to feed such labels from the source of supply to the articles at great speed, while at the same time activating the heat activatable adhesive coating thereon. In accomplishing such purpose, the preferred means has been found to include a pneumatic conveyor means which by the aid of suction retains control of the label until it has been applied to the article. It was found impossible, however, to control both the label and effectively activate the adhesive coating on such a label by heating the carrying surface of such conveyor means. This was due to the fact that the foil layer of such a label which rested on the carrying surface of the conveyor, would by reason of its greater expansibility than the paper backing, cause the label to curl or warp away from such surface, thus breaking the vacuum seal and preventing the suction from becoming effective. The result was that the label would invariably fall off the conveyor before it reached the article to which it was to be applied. In those instances in which the label did not fall off the carrier, it was found that it was in such poor contact with the conveyor surface as to result in an improper activation of the adhesive coating. Furthermore, it was found difficult to control the heat flow to the conveyor surface, with the result that a considerable amount of residual heat was built up in the conveyor after the apparatus had been in use a short time. This resulted in the introduction of high and excess heat into the label body causing permanent distortion of the label and possible destruction of the inks, varnishes and laminating compounds used in the construction of such a laminated label.

The primary purpose of the present invention is to provide an improved means and method for satisfactorily and successfully activating heat activatable adhesive coatings on labels without the aforesaid disadvantages.

Another object of the present invention is to provide an improved means for activating heat activatable adhesive coatings on labels without distorting the latter or impairing their construction.

A further object of the invention is to provide an improved means for accomplishing the activation of heat activatable adhesive coatings on labels while maintaining as much as possible, the balanced condition of the other layer or layers in such labels.

A still further object of the invention is to provide an improved means capable of activating heat activatable adhesive coatings on labels and

of preventing distortion of the label due to the evaporation of the inherent moisture content in the paper layer thereof.

Other objects of the invention as well as the advantages thereof will become apparent after a perusal of the following description when read in connection with the accompanying drawings, in which Fig. 1 is an enlarged perspective, sectional view of a portion of a label, and Fig. 2 is a diagrammatic plan view of a labeling apparatus embodying the features of the invention.

Referring to Fig. 1 of the drawings which for the purposes of illustration shows one method of construction for a metallic foil label or sheet, the numeral 10 indicates the metal foil which may be made of aluminum or other suitable material and which is exposed to the observer's view when the label is attached to a package. The metal foil 10 usually has printed thereon informative matter and a design which is protected by an outer coating 11 of lacquer or varnish. The metal foil 10 is secured to a paper backing layer 12 by means of a thermoplastic or other adhesive 13. Provided on the exposed or outer surface of the paper layer 12 is a coating 14 of heat activatable adhesive material such as a thermoplastic adhesive composition or other suitable material, by which the label may be adhered to an article. Adhesive films or layers of this type are substantially unalterable and non-tacky at the temperatures and atmospheric conditions usually encountered during storage or at the place of use, but which when activated by heat will become usefully adhesive. The temperatures usually required for activating these adhesive films to an adhesive condition range from approximately 155 degrees F. to 270 degrees F. Consequently, labels or sheets provided with heat activatable adhesive material may be readily stacked, as in the manner shown at the label supply station designated C in Fig. 2 of the drawings. It will be understood that the laminated structure of the label may be built up in any other way desired, and that in the case of an ordinary label, its laminated structure may consist of a layer 12 of paper and a layer 14 of heat activatable adhesive material.

The labeling machine, as such, is preferably, though not necessarily of the type described and illustrated in my Patent No. 2,525,741, issued October 10, 1950. In order that the construction and operation of the mechanism illustrated in Fig. 2 of the drawings may be more readily understood, it is deemed advisable to first point out generally, that in a machine such as shown in the drawing and in the said copending application, there is provided a main conveyor 20 which advances the articles to be labeled, such as the bottles 21, in a single file to the right, as viewed in Fig. 2 of the drawings. At a predetermined point, the articles 21 are deflected from conveyor 20 onto a moving conveyor or platform 22 which carries the articles past a label applying station A. In their travel towards station A, the articles 21 are spaced a predetermined distance from each other by a spacing mechanism composed of a drum 23 mounted for rotatable movement about a horizontal axis and provided with a helically-shaped article engaging channel 24. At station A, the path of travel of the articles is substantially tangential with respect to an endless conveyor B. Labels from the supply station C are engaged by a pick-up mechanism D and transferred to the conveyor B at the pick-up station E. In their travel from the pick-up station E to the label applying station A, the labels are ac-

tivated so that an adhesive contact may be readily established, at the station A, between each label and the corresponding article 21. As the article passes station A, the leading edge of the activated label is brought into contact with the article. The articles with the partially affixed labels then engage an obliquely-arranged portion of belt 25 which cooperates with a rubber covered rail 26 to rotate each article in a clockwise direction, as viewed in Fig. 2. This rotating action serves not only to press the label into firm and complete securement with the article, but also guides the labeled article back onto the main conveyor 20 which thereupon carries the article away from the apparatus.

The stack C of labels which may be of the laminated type, or any other type provided with a thermo-activatable adhesive coating, as has been previously explained, is supported upon a moving platform 27 between side walls 28, 28 and is constantly urged by such platform towards the left, as viewed in Fig. 2 of the drawings. At the forward end of the stack C is provided an inclined wall 29 which permits one end portion of the foremost label to engage with an unheated rotatable cylinder 30 of the transfer mechanism D. The labels are mounted in the stack with the adhesive coating 14 thereof, disposed forwardly. Since the coatings 14 of the labels are inactive under room or atmospheric temperatures and conditions, they will not adhere to or affect the action of the pick-up or transfer mechanism D. The cylinder 30 successively removes the foremost label in the stack C by means of suction exerted through apertures provided in the peripheral wall thereof and carries such label in a clockwise direction to the drum B; the mechanism being so timed that as a label is fed to the drum, its leading edge will be brought against one of a plurality of axial ribs 31 provided on the periphery of the drum. It will be noted that when the labels are so deposited on the drum B, their adhesive coatings 14 will be outermost.

The drum B is essentially similar in construction to the corresponding drum incorporated in the apparatus shown in my aforesaid copending application and is rotated in a similar fashion to convey the labels delivered by the cylinder 30 of the label transfer mechanism at station E to the label applying station A. The labels are maintained on drum B during their travel from station E to A by means of suction exerted through apertures or perforations in the peripheral wall of the drum and controlled in the manner described in my aforesaid application. The drum B differs from the drum of my aforesaid application in the respects that the annular chamber 32 formed concentric with and adjacent to the peripheral wall thereof, is supplied in any suitable manner through the pipe 33 with a cooling liquid to maintain the label carrying surface of such drum at room temperature or lower. Provided on the periphery of drum B is a ring-shaped cam 34 whose outer periphery is provided with a plurality of spaced raised portions 35 equal in number to the number of labels that may be carried by the drum and located in the regions of the axial ribs 31; the spaced portions of cam 34 intermediate the raised cam portions 35 being of a length approximately equal to the length of the largest label to be carried by the drum. Engaging the outer periphery of cam 34 is a roller 36 mounted on the outer end of a pivoted arm or control member 37. Connected to the outer end of member 37 is a link mechanism 38 for con-

5

trolling a valve 39 provided on a pipe 40 communicating with a source of hot air or steam. Connected to pipe 40 is a nozzle 41 arranged to direct the hot air or steam passing through valve 39 upon a label carried by drum B. The formation of nozzle 41 is such that the hot blast of air or steam delivered thereby will progressively and entirely subject an area of the drum B on which a label is mounted, to heat for a predetermined period of time during the rotational movement of the drum. The period of time that the hot air blast or steam is directed against a label mounted on the drum is controlled by the length of time that the roller 36 is in engagement with a portion of the cam 34 intermediate the raised portions 35 thereof. When the roller 36 comes into engagement with the outer edge of a raised portion 35 of the cam, the link mechanism 38 will operate valve 39 to cut off the flow of hot air or steam to the nozzle 41 on pipe 40, and will maintain such valve shut during the period of engagement of roller 36 with such outer edge of raised cam portion 35.

In the event the machine shuts down, the valve may be manually manipulated to shut off the hot air or steam or an interlock may be provided for such purpose. As is shown in Fig. 2 of the drawings, such an interlock may be composed of an arm 45 fixed to arm 37 so as to rotate therewith, as the roller 36 moves along the cam 34. The outer end of arm 45 is positioned adjacent to the outer end of a lever 46 when the cam roller 36 is engaging a portion of the cam intermediate the raised portions 35 of such cam, and moves in a clockwise direction, as viewed in Fig. 2, away from lever 46 as the roller 36 travels up a succeeding raised portion 35. During the travel of the roller 36 from the outer or high edge of a raised portion 35 to a cam portion intermediate such raised portions, the outer end of arm 45 will rotate in a counter-clockwise direction to a position adjacent to the outer end of lever 46 (note Fig. 2), and will remain in such position while the roller is in engagement with such intermediate portion. The lever 46 is mounted on a shaft 47 to rotate in the same plane as arm 45 and is connected through such shaft to suitable clutch mechanism (not shown) arranged and constructed to rotate shaft 47 and consequently lever 46 in a counter-clockwise direction as indicated by the arrow when the machine is shut down. The amount of counter-clockwise rotation of lever 46 is such that whether roller 36, at the time of such shutdown, is in engagement with either a raised or intermediate portion of cam 34, the outer end of lever 46 will engage arm 45 and rotate the latter in a clockwise direction as to move the roller 36 outwardly beyond the outer or high edges of the raised portions 35 of cam 34, and thereby operating valve 39 to prevent the passage of hot air or steam through the nozzle 41.

In order to immediately cool a label which has been subjected to a blast of hot air or steam, cool air is blown against it soon after such label has moved past the nozzle 41 in the rotative movement of the drum B. The cool air is directed against the label by a nozzle 48 located approximately the length of a label in advance of nozzle 41 and connected to a source of continuous cool air supply.

From the foregoing, it will be understood that the pick-up cylinder 30 of the label transfer mechanism engages individual labels from the stack C and transfers them in rapid succession to drum B. As each label is delivered to drum B,

6

it is abutted firmly against one of the positioning ribs 31 and is retained in this position on the peripheral surface of the drum by pneumatic suction throughout its path of travel from the pick-up station F to the label-applying station A. The action of this suction is indicated by the series of small arrows shown in Fig. 2. During the travel of each label from the pick-up station E, the cam portion associated with the rib 31 against which the leading edge of the label abuts, comes into engagement with roller 35 and through the latter, allows the control member 36 to drop, thereby causing the latter to actuate the valve control mechanism to open valve 39. Upon the opening of valve 39, a blast of hot air or steam having a temperature of approximately 450 degrees F. is delivered by nozzle 41 upon the label. The arrangement and construction of the mechanism is such that the hot air blast or steam is directed against the periphery of drum B just prior to the passage of the label through the area covered by such blast. As the label passes into such area, the protective rib or guard 31 will prevent the leading edge of the label from being picked up by the blast. As the label passes through this area of high temperature air or steam, the thermoplastic adhesive coating 14 thereof, will become adhesively activated in a progressive uniform manner. After the label passes through the region of hot air or steam, it is subjected to a cooling blast of air from the succeeding cold air nozzle 48. The activated label is then applied at station A to an article passing thereby in the manner previously described.

It will thus be seen that in accordance with the present invention, the laminated sheets or labels are fed from stack C to the label applying station A by means of a cylinder 30 which is at room temperature and drum B which is maintained at room temperature or slightly cooler, due to the cooling liquid circulating therethrough. Thus, in its travel to station A, a label is handled under temperature conditions similar to those under which it was prepared, so that no strain will be set up in the laminated body of the label, due to application of heat thereto. In the travel of the label on the cylinders 30 and B, the only force exerted thereon, is that required to flex it to conform to the carrying surfaces of such cylinders, and the inherent resistance of the laminated body of the label to such flexing is so low that no impairment in the structure of the label body results from such handling of the label. The application of the hot air or steam blast, while it would tend to distort the label and even destroy the inks and varnishes on the label if the latter were subjected to it for any appreciable length of time, is only effective on each portion of the adhesive coating 14 just long enough to activate each such portion. The hot air or steam blast is in effect moved over the adhesive coating 14 of the label in a sweeping manner so that it affects only such coating and does not substantially penetrate to the underlying layers of the label. When steam is used, especially in the case of laminated foil labels, sufficient moisture is introduced into the paper of the label to cause the latter to expand to an extent as to minimize stresses in the label as has been explained. The amount of moisture introduced into the label can be controlled by controlling the composition of the steam and its supply through the valve 39 and nozzle 41. Almost immediately after such hot blast, the adhesive coating 14 of the label is subjected to the cooling air blast from nozzle 48 to

reduce it to room temperature and so that the heat in such coating is not substantially transferred to the laminated body of the label, thereby avoiding possibility of distortion of the label upon its release at the label applying station A. The minor portion of heat that may reach the body of the label from its heated adhesive coating 14 prior to the cooling blast, is not great enough to create sufficient stresses therein to overcome the force exerted by the vacuum holding the sheet against the cylinder wall. These stresses however, are of sufficient magnitude to distort a freely supported label or sheet of laminated material. Accordingly, it is important that the entire laminated body and adhesive coating of the label be brought to room temperature prior to the release of the label from drum B. Even though the adhesive coating 14 of the label is cooled to room temperature prior to its complete attachment to the article by the belt 25 and rail 26, it will remain usefully adhesive until such means completes its attachment to the article.

While I have herein described and illustrated a preferred embodiment of the invention, it will be readily apparent to those skilled in the art that various modifications and changes may be made therein without departing from the spirit of the invention. Thus, a radiant heating means capable of producing directed heat waves within a predetermined area may be substituted for nozzle 41. In such construction, the valve 39 will be replaced by suitable switch means operable under the control of the previously described members 34, 35, 36, 37 and 38. It will thus be understood that I intend to include within the scope of the invention, all embodiments of the invention coming within the terms of the appended claims.

I claim:

1. In a labeling machine, a support for a source of supply of labels coated with thermo-activatable adhesive, means spaced from said source for supporting articles to be labeled, means for successively feeding individual labels from said source and applying such articles at said spaced supporting means, and means intermediate said source and support to apply directly against the thermo-activatable adhesive coatings on said labels in controlled amounts a directed, aeriform stream of heat.

2. In a labeling machine, a support for a source of supply of labels coated with thermo-activatable adhesive, means spaced from said source for supporting articles to be labeled, means for successively feeding individual labels from said source and applying such labels to articles at said spaced supporting means, means intermediate said source and support to apply heat directly to the thermo-activatable adhesive coatings on said labels, and means for maintaining the other surfaces of said labels cool during application of such heat.

3. In a labeling machine, a support for a source of supply of labels coated with thermo-activatable adhesive, means spaced from said source for supporting articles to be labeled, means comprising a movable label carrying surface for successively feeding labels from said source and applying such labels to articles at said spaced supporting means, means intermediate said source and support to apply heat directly to the thermo-activatable adhesive coatings on said labels, and means for maintaining such label carrying surface at a temperature not greater than room temperature in its travel through the region of such applied heat.

4. The combination of a support for a source of supply of sheet material coated with thermo-activatable adhesive material, means for feeding such sheet material from said source to a point spaced from the latter, means for progressively applying heat directly to the thermo-activatable adhesive coating on said sheet material and means for cooling said activated sheet material to room temperature prior to the delivery thereof to said point.

5. In a labeling machine, means to support a supply of labels coated with thermo-activatable adhesive material at room temperature, means to feed labels from said supply and into engagement with a carrier at room temperature, means to heat the thermo-activatable adhesive coatings on said labels to activating temperature, means to cool said labels to room temperature prior to their removal from said carrier, and means to remove said labels from the carrier.

6. In a labeling machine, a support for a source of supply of labels coated with thermo-activatable adhesive, means spaced from said source for supporting articles to be labeled, means for feeding labels from said source and applying such labels to articles at said spaced supporting means, means intermediate said source and support to blow a blast of hot gas against a label carried by said feeding means, and means to protect the leading edge of the label from the lifting effect of said blast.

7. The combination of a sheet carrying member, means to feed a sheet coated with thermo-activatable adhesive material to said carrying member, means to constrain said sheet on said carrying member, and means for successively heating the coating on said sheet and cooling said sheet while the latter is in a constrained condition.

8. The combination of a support for a source of supply of sheet material coated with thermo-activatable adhesive material, means for carrying such sheet material from said source to a point spaced from the latter, means for maintaining said carrying means at a temperature not greater than room temperature, means for directing heat upon the adhesive coating of said sheet material and means for directing a blast of cool gas upon the activated coating of such sheet material.

9. The combination of a support for a source of supply of sheet material coated with thermo-activatable adhesive material, means for carrying such sheet material from said source to a point spaced from the latter, means for directing heat upon the adhesive coating of said sheet material and means controlled by said carrying means for controlling said heat directing means.

10. The combination of a support for a source of supply of sheet material coated with thermo-activatable adhesive material, means for carrying such sheet material from said source to a point spaced from the latter, means for directing heat upon the adhesive coating of said sheet material during the travel of the latter from said source to said point, means intermediate said carrying means and said heat directing means for controlling the latter, and means for cooling the heated portions of said sheet.

11. The combination defined in claim 10, in which said heat directing means is constructed and arranged to introduce moisture into the paper of said sheet material simultaneously with the application of heat thereto.

12. The combination defined in claim 10, in which said heat directing means includes mecha-

nism for directing a blast of hot steam onto said sheet material.

13. The combination defined in claim 10 in which said controlling means includes a cam associated with said carrying means, a cam member coacting with said cam, a control device for said heat directing means, and means controlled by said cam member for controlling said control device.

14. The combination of a support for a source of supply of sheet material coated with thermo-activatable adhesive material, means for carrying such sheet material from said source to a point spaced from the latter, intermittently operating means for directing heat upon the adhesive coating of said sheet material during the travel of the latter from said source to said point, and means for controlling the intermittent operation of said heat directing means.

15. The combination defined in claim 14, including means for rendering said heat directing means and said control means in operative, whereby the intermittent application of heat to said sheet material is stopped.

16. The method of applying to an article a label having a thermo-activatable adhesive surface which comprises maintaining the label in contact with a cooled surface while progressively applying heat directly to the thermo-activatable adhesive surface thereof, cooling said heated surface and then pressing the adhesively activated surface of the label directly against the article.

17. The method of applying to an article a label having a thermo-activatable adhesive surface which comprises maintaining the label in contact with a cooled surface and progressively and simultaneously applying heat and moisture directly against the thermo-activatable adhesive surface thereof, cooling said heated surface, and then pressing the adhesively activated surface of the label directly against the article.

18. The combination of a support for a source of supply of sheet material coated with thermo-activatable adhesive material, means for carrying such sheet material from said source to a point spaced from the latter, means for directing heat upon the adhesive coating of said sheet material during the travel of the latter from said source to said point, and means operable to render said heat directing means inoperative to direct heat upon the adhesive coatings of said sheet material when the movement of said sheet carrying means is arrested.

19. The combination of a support for a source of supply of sheet material coated with thermo-activatable adhesive material, means for carrying a series of such sheets in spaced relation from said source to a point spaced from the latter, means for directing heat upon the adhesive coatings of said sheets during the travel of the latter from said source to said point, and means controlling said heat directing means and operative to discontinue the flow of heat therefrom against the exposed portions of said carrier between such spaced sheets.

20. The combination of a support for a source of supply of sheet material coated with thermo-activatable adhesive material, means for carrying such sheet material from said source to a point spaced from the latter, and means intermediate said source and said point for progressively applying to the thermo-activatable adhesive on said sheet material, while the latter is being transported by said carrier, a directed, aeriform stream of heat having a cross-sectional area

less than the surface area of such sheet material.

21. The combination of a support for a source of supply of sheet material coated with thermo-activatable adhesive material, a carrier for carrying separate sheets in spaced relation from said source to a point spaced from the latter, means intermediate said source and said point for progressively applying to the thermo-activatable adhesive on said sheets, while the latter are being transported by said carrier, a directed, aeriform stream of heat having a cross-sectional area less than the surface area of one of said sheets, and means controlling said first mentioned means and operative thereon to stop the stream of heat therefrom after the adhesive coating on each sheet has been heat treated, and to start the stream of heat therefrom as each succeeding sheet enters the zone of heat treatment.

22. In a labeling machine, a support for a supply of labels coated with thermo-activatable adhesive material, means for carrying such labels in spaced relation from said support to a point spaced from the latter, a pair of zones of temperature treatment arranged in spaced relation along the path of travel of the spaced labels transported by said carrying means, means at the first of said zones in the direction of travel of the labels for activating the thermo-activatable adhesive material as such labels successively pass through such zone, and means at the next zone in the direction of travel of the labels for cooling the labels as they successively pass from said first zone through said second zone.

23. In a labeling machine, a support for a supply of labels coated with thermo-activatable adhesive material, means for carrying such labels in spaced relation from said support to a point spaced from the latter, a pair of zones of temperature treatment arranged in spaced relation along the path of travel of the spaced labels transported by said carrying means, means at the first of said zones in the direction of travel of the labels for progressively applying to the thermo-activatable adhesive material on said labels, while the latter are successively passed therethrough, a directed, aeriform stream of heat capable of activating such adhesive material, and means at the second zone in the direction of travel of the labels for progressively applying to such labels, while the latter successively pass from said first zone through said second zone, a directed, aeriform stream capable of cooling such labels.

24. In a labeling machine, the combination of means capable of successively carrying labels in constrained condition thereon in their passage from a source of label supply in such machine to the articles to be labeled, means for progressively heating the thermo-activatable material on each label to activate the same while such label is being carried in its constrained condition by said first mentioned means, and means for cooling each label immediately following the activation of the adhesive coating thereon and while such label is being carried in its constrained condition by said first mentioned means.

25. The combination of a support for a source of supply of sheet material coated with thermo-activatable adhesive material, means for feeding such sheet material from said source to a point spaced from the latter, and means between said source and said point for progressively applying against the thermo-activatable adhesive coating on said sheet material in the feed of the latter to said point, a directed stream of moisture laden

hot gas having a cross-sectional area less than the surface area of such sheet material, and means for controlling the operation of said gas applying means.

26. In a labeling machine, means to support a stack of labels, a member spaced from said label supporting means and having an exterior surface portion, means for supporting said member for rotatable movement in one direction about an offset axis with the surface portion thereof moving in a path about such axis, means between said label supporting means and said member for removing a label from one end of said label stack and carrying the same to the exterior surface portion of said member, means for holding the transferred label in proper position on said member with the face side of such label in opposed relation to said exterior surface portion of said member and comprising a label engaging instrument provided at the advancing end of such surface portion in the rotational movement of said member, and means alongside the path of movement of said member for rendering adhesive the outwardly disposed back side of a label as such label is being carried by said member, said last mentioned means being capable in its operation of disturbing the position of such label relative to said member, and said label engaging instrument being constructed and arranged to prevent the disturbance of the label from its proper position relative to said member by said last mentioned means.

27. In a labeling machine, means to support a stack of labels with the labels standing on edge in the stack, a member spaced from said label supporting means and having a vertically disposed exterior surface portion, means for supporting said member for rotatable movement in one direction about a vertical axis, means between said label supporting means and said member for removing a label from an adjacent end of said stack and carrying the same to the vertical surface portion of said member, means for holding the transferred label in proper position on said member with the face side of such label in opposed relation to said surface portion and comprising a label engaging instrument provided at the advancing end of such surface portion in the rotational movement of said member, and means alongside the path of movement of said

member for rendering adhesive the outwardly disposed back side of a label carried by said member, said last mentioned means being capable in its operation of disturbing the position of such label relative to said member, and said label engaging instrument being constructed and arranged to prevent the disturbance of the label from its proper position relative to said member by said last mentioned means.

28. In a labeling machine, a rotatably mounted, unheated member adapted to transport a label from a place of label supply to a place of application to an article, means located adjacent to the path of feed of a label on said member between said places of supply and application for rendering adhesive the outer side of a label carried by said member, said means being capable in its operation on such label of disturbing the position of such label relative to said member, and label engaging means mounted on said member and constructed and arranged to be effective at the leading edge of a label being carried to said place of application to prevent the disturbance of the leading edge of the label from its proper position on said member by said adhesive rendering means.

29. In a labeling machine, a rotatably mounted, unheated member adapted to transport a label from a place of label supply to a place of application to an article, heating means mounted externally of said member between said places of supply and application, and capable of imposing a disturbing force on a label as the latter supported by said member passes said heating means, and means mounted on said member and constructed and arranged to be effective at the leading edge of the label carried by said member to prevent the disturbing force from said heating means from disturbing the position of the leading edge of the label on said member.

GEORGE W. VON HOFE.

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