Dec. 20, 1949 E. J. CARTER 2,491,714

TAPE DRYING SYSTEM

Filed Jan. 29, 1947 3 Sheets-Sheet 1

Fig. 1.

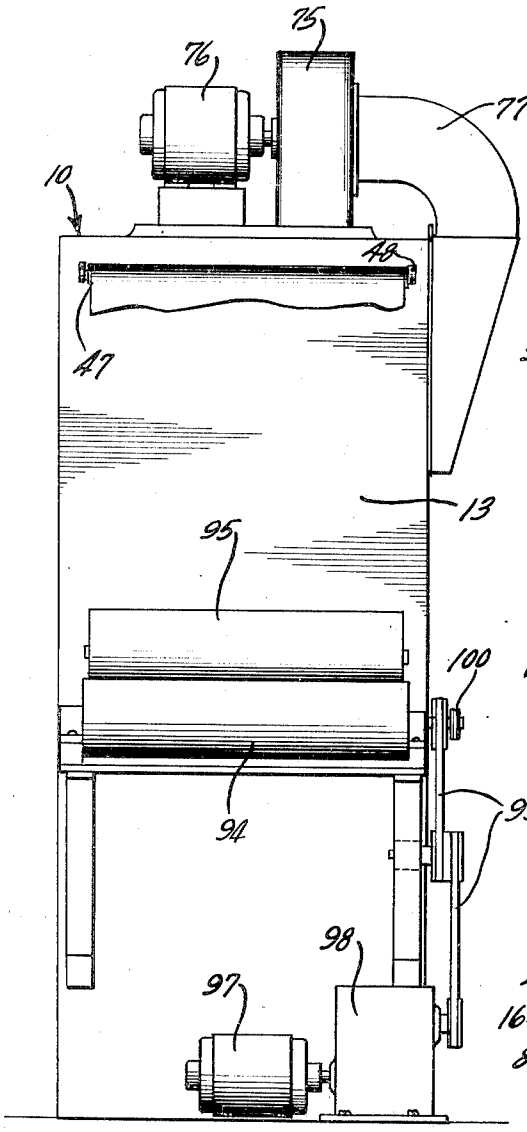
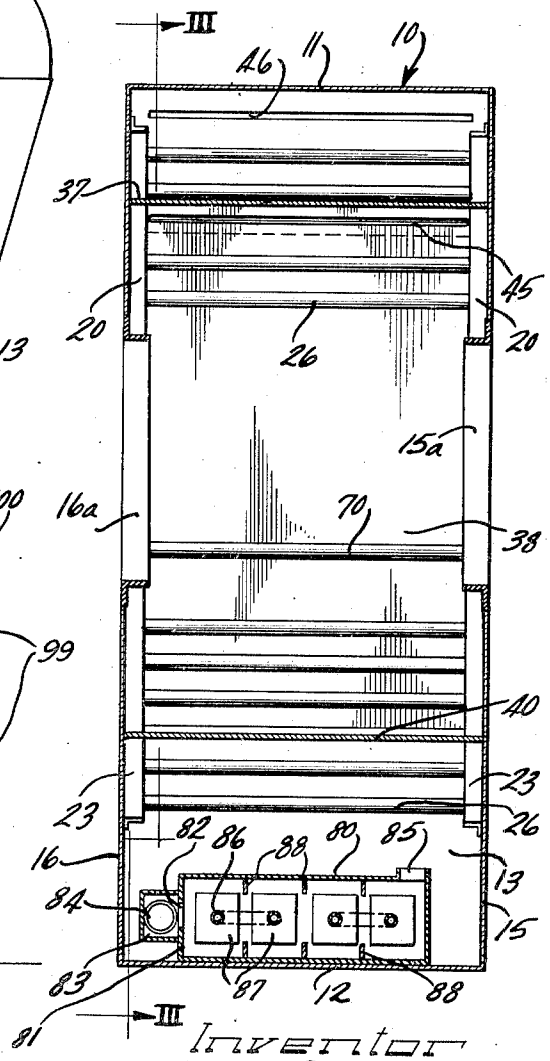


Fig. 2



Inventor
EDWARD J. CARTER

by Pierce, Scheffler & Parker Attys.

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TAPE DRYING SYSTEM

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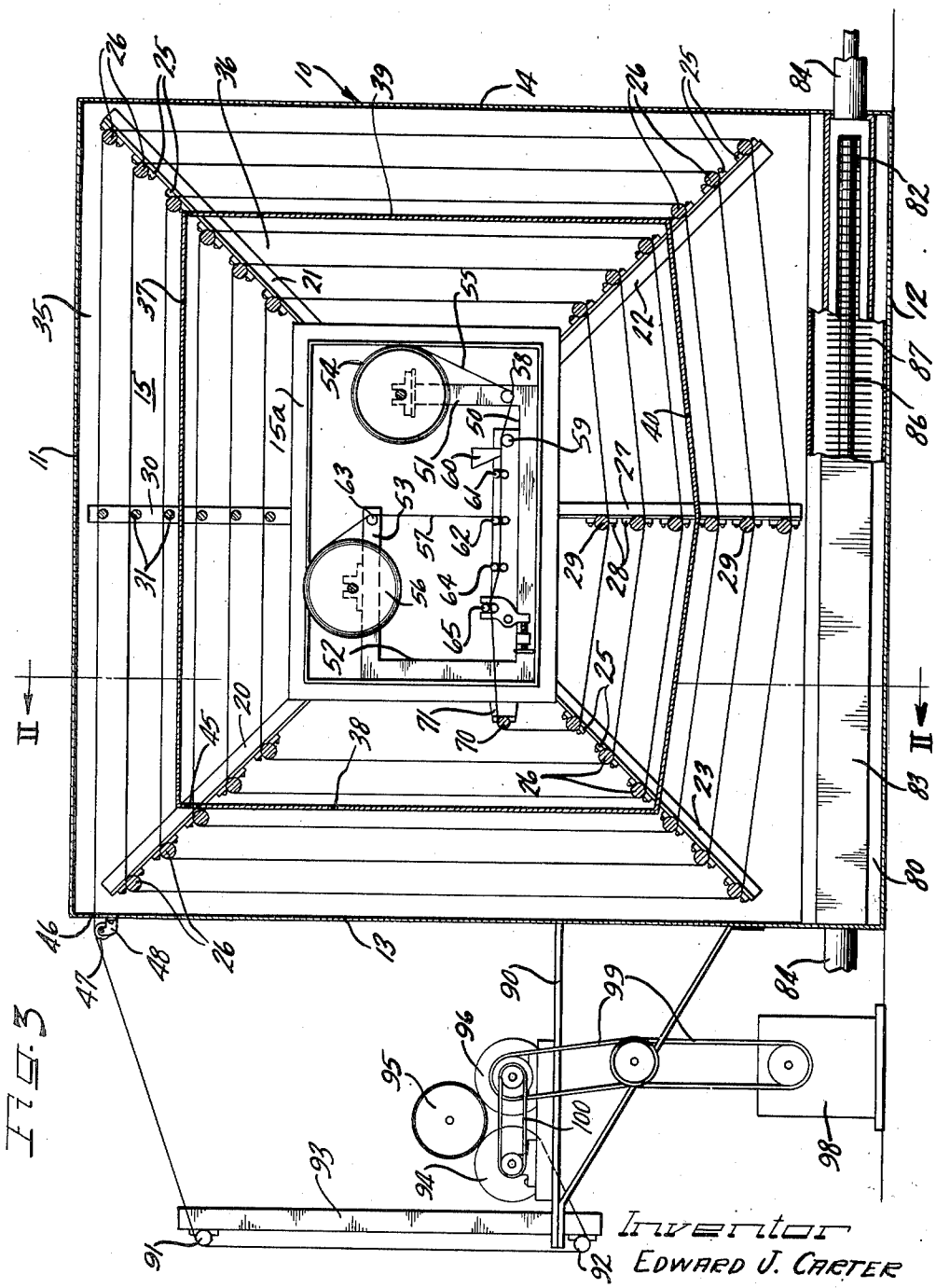

FIG. 3

Inventor
EDWARD J. CARTER

by Kirlin & Campbell & Keefe Attys.

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TAPE DRYING SYSTEM

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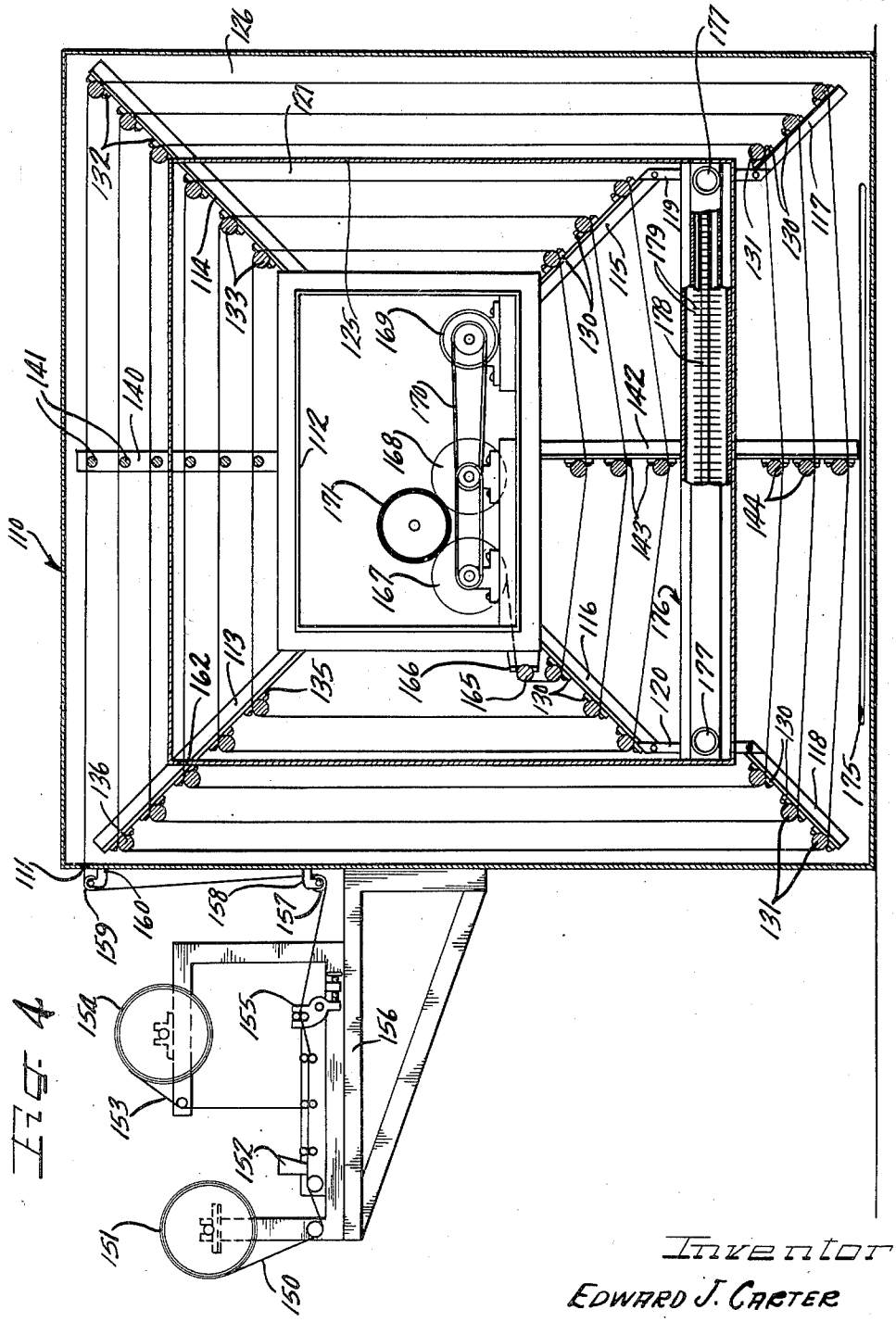

Fig. 4

Inventor
EDWARD J. CARTER

by Kurt Kenyon & Randall Rothwell Attys.

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2,491,714

UNITED STATES PATENT OFFICE

2,491,714

TAPE DRYING SYSTEM

Edward J. Carter, New York, N. Y., assignor to William M. Scholl, Chicago, Ill.

Application January 29, 1947, Serial No. 724,946

6 Claims. (Cl. 34—155)

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This invention relates to apparatus for continuously drying a wet tape and particularly to a device for drying an elongated sheet or tape coated with a composition containing a volatile liquid. The invention further pertains to a method for drying wet tapes.

Heretofore, tapes or the like wetted with a volatile liquid have conventionally been dried by a method including conveying the tape through a relatively long tunnel-like chamber while circulating heated air through said chamber. Such a device not only occupies a considerable amount of space but the tape, when so dried, tends to wrinkle, curl or warp.

I have now provided a tape drying apparatus comprising an enclosure provided with a plurality of generally parallel rollers or bars disposed in two or more intersecting planes. More specifically, the rollers or bars are equally distributed between four series arranged in each of the four diagonal directions from the center of a cabinet of generally rectangular cross section. In each series, the rollers or bars are similarly spaced from one another, and each roller or bar has its two ends disposed approximately equidistantly from the cabinet center. Three series of rollers or bars are spaced equidistantly from the cabinet center, but the fourth series is additionally displaced outwardly and to one side by a distance preferably corresponding to the spacing of the rollers or bars within each series. In other words, the rollers or bars are distributed symmetrically about the center of the cabinet in three diagonal directions but offset outwardly and to one side in the fourth diagonal direction by a distance comparable to the spacing of the rollers or bars within a series of rollers or bars. As a result, a tape to be dried can be pulled over the outsides of all these rollers or bars along a convolute meandrous path repeatedly crossing the diagonals of the drying cabinet so that the tape continuously passes from a roller or bar in one series to a roller or bar in another series. In effect, any one part of the tape, when moving, follows a continuous line made up of consecutive more or less straight lines joining each other at approximately right angles at points falling on a spiral originating at the center of the cabinet.

The cabinet or enclosure is also provided with means for circulating air therethrough, and if desired with means for heating part or all of the interior of the cabinet or enclosure. The cabinet or enclosure may be subdivided into outer and inner concentric compartments of which one is maintained at a higher temperature than the

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other, so that the tape may first be exposed to drying atmosphere having a relatively lower temperature than the drying atmosphere to which the tape is subsequently exposed. Instead of providing heating means within the cabinet or enclosure, I may also arrange for the circulation of heated air therethrough.

The above disclosed tape drying apparatus is exceedingly compact and while occupying but little space permits the continuous drying of a wet tape by the exposure at one and the same time of a long expanse of tape to a drying atmosphere. Further, while the long expanse of tape is being dried, the tape is repeatedly "broken" or creased transversely (when passing over the rollers or bars) which serves to prevent the wrinkling, curling or warping that would otherwise occur on evaporation of a volatile liquid wetting the tape, and in particular when such evaporation causes contraction of a coating composition applied to the tape.

It will be understood that when the wet tape is pulled over the rollers or bars in my drying apparatus, the tape forms a number of spaced upper horizontal runs moving in one direction, spaced lower horizontal runs moving in the opposite direction, spaced vertical runs on one side moving upwardly and spaced vertical runs on the other side moving downwardly. The horizontal runs tend to sag, being supported or held in position by the rollers or bars only at the ends thereof. Such sagging may cause one horizontal run to contact another horizontal run, with consequent adherence due to the adhesive properties of any coacting composition applied to the tape. The coated surface of the tape is necessarily turned outwardly, so that the uncoated surface will contact the rollers or bars. Hence, the coated tape surface forms the lower side of the tape in the lower horizontal run and the upper side of the tape in the upper horizontal run. To space these horizontal runs and prevent contact and adherence, I provide rollers or bars supporting the upper runs and other rollers or bars serving to stretch, bulge or belly the lower runs downwardly.

It is therefore an important object of the present invention to provide a tape drying apparatus including an enclosure provided with rollers or bars over which a wet tape may be pulled along a line winding about a central point in said enclosure and either receding from or approaching toward said point whereby a longer space of tape may be dried at once within a small space.

Another object of this invention is to provide a tape drying apparatus of the construction in-

dicated in which said rollers or bars "break" or crease the tape transversely at frequent intervals whereby wrinkling, curling or warping is prevented.

Still another object of the invention is to provide apparatus of the construction disclosed and including means for supporting the upper horizontal tape runs having a coated surface turned upwardly together with means for stretching or bulging downwardly the lower horizontal runs having a coated surface turned downwardly whereby contact and adhesion between the horizontal runs is prevented.

A further object of the present invention is to provide apparatus of the construction indicated and subdivided into inner and outer concentric compartments maintained at different temperatures so that the tape may first be exposed to a drying atmosphere having a temperature relatively lower than the drying atmosphere to which the tape is subsequently exposed.

Another object of the invention is to provide a method for drying a tape including the step of advancing said tape through one or more drying zones along a more or less rectilinear path including frequent angular turns in the same transverse direction with respect to said tape while spacing the horizontal portions of said tape to prevent contact and adhesion therebetween, the drying temperature preferably being raised as the tape is advanced.

Other and further objects and features of the present invention will become apparent from the following description and appended claims.

The drawings show, diagrammatically and by way of example, two forms of drying apparatus according to the present invention. More particularly:

Figure 1 is a side elevational view, with parts broken away, of one drying apparatus according to the present invention;

Figure 2 is a transverse vertical cross-sectional view of the apparatus of Fig. 1 taken along the line II—II of Fig. 3;

Figure 3 is a longitudinal vertical cross-sectional view of the apparatus of Fig. 1 taken along the line III—III of Fig. 2, parts being shown in elevation, and other parts being omitted, in particular, the blower and ducts shown in Fig. 1; and

Figure 4 is a view similar to Fig. 3 but showing another drying apparatus in accordance with the present invention.

The drying apparatus shown in Figs. 1, 2 and 3 comprises a drying cabinet generally indicated at **10** and including a top wall **11**, a bottom wall **12**, a left side wall **13**, a right side wall **14**, a rear wall **15** and a front wall **16**. The front and rear walls **15** and **16** are pierced by aligned windows delimited by angle irons **15***a* and **16***a*. It will be noted that these two windows are equidistant from the side walls **13** and **14** but slightly closer to the top wall **11** than to the bottom wall **12**.

Diagonally disposed on the inside of each of the walls **15** and **16** are angle irons **20** (upper left), **21**, (upper right), **22** (lower right) and **23** (lower left). The angle irons **20**, **21**, **22** and **23** extend diagonally with respect to the widows **15***a* and **16***a* and with respect to the walls **15** and **16**. A number of bearings **25** are provided on each of the angle irons **20**, **21**, **22** and **23**. More particularly, the angle irons **21**, **22**, and **23** each support six bearings, each set of six bearings being spaced diagonally in the same manner. The angle iron **20**, however, carries only five bearings disposed, with respect to height, at the level of the five innermost bearings on the angle iron **21**, and with respect to displacement to the left, as far out as the five outermost bearings on the angle iron **23**. To each bearing supported on the wall **15** by an angle iron there is opposed, in exact alignment, another bearing supported from the wall **16** by another angle iron. Each pair of opposed bearings accommodates the shaft of a roller **26** extending transversely across the interior of the cabinet **10**. Vertically disposed on each of the walls **15** and **16** approximately midway between the angle irons **22** and **23** is an angle iron **27** provided with bearings **28** for supporting the shafts of rollers **29** extending transversely across the interior of the cabinet **10**. The series of rollers **29** supported from the angle irons **27** are offset downwardly with respect to the rollers **26** supported from the angle irons **22** and **23**. On each of the walls **15** and **16** there is also disposed an iron plate **30** extending vertically midway between the angle irons **20** and **21** and provided with bars **31** on the same level as the rollers **26** supported from the angle iron **21**.

The cabinet **10** is subdivided into an outer compartment **35** and a concentric inner compartment **36** by joined partition walls **37** (upper horizontal), **38** (left vertical), **39** (right vertical) and **40** (lower horizontal). These partition walls are affixed to the angle irons **21**, **22**, **27** and **23** between the three inner and the three outer rollers on said angle irons and to the angle iron **20** between the two inner and the three outer rollers thereon. Since the rollers **29** on the angle iron **27** are offset downwardly with respect to the rollers **26** on the angle irons **22** and **23**, the partition wall **40** is bent downwardly to a slight extent at its middle.

The partition wall **38** is pierced by a horizontal slot **45** at the level of the outermost of the three rollers **26** supported from the angle iron **21** within the inner compartment **36**. The left side wall **13** of the cabinet **10** is pierced by a horizontal slot **46** at the level of the outermost of the rollers **26** supported from the angle iron **21**. Outside the slot **46**, a roller **47** is supported from the side wall **13** by a bracket **48** provided with suitable bearing means, at the level of the outermost roller **26** supported from the angle iron **21**.

The inner compartment **36** contains within the area between the windows defined by the angle irons **15***a* and **16***a*, a laminating device including, affixed to each angle iron **15***a* and **16***a*, a supporting member formed with a horizontal portion **50**, an erect member **51** extending from the right end of the member **50**, an erect member **52** extending from the left end of the member **50**, and an upper horizontal portion **53** extending inwardly from the top of the member **52**. The free end of the member **51** is provided with suitable bearing means for supporting a roll **54** of paper tape **55** to be unwound therefrom. The middle of the member **53** provides suitable bearing means for supporting a roll **56** of permeable paper tape **57** to be unwound therefrom. From the roll **54**, the tape **55** passes under a bar **58**, over a bar **59**, past a distributor **60** for a liquid adhesive composition, between a pair of rollers **61**, and between a second pair of rollers **62**. The permeable tape **57** passes from the roll **56** over a bar **63** and between the rollers **62** for superposition upon a layer of adhesive spread over the tape **55** by distributor **60**. From the roller **62**, the resulting laminate (tape **55**, adhesive, tape **57**) passes between a pair of rollers **64** and through an adjustable tensioning device **65** that serves to force the adhesive up through the tape **57** so as to form a layer of ad-

hesive on the upper surface of said permeable tape 57. The resulting coated double tape next passes over a roller 70 journaled in suitable bearings on brackets 71 attached to the angle irons 15a and 16a to the left of the aperture defined thereby and on the general level of the rollers 61, 62 and 64. This laminating device is disclosed and claimed in my application entitled "Coating apparatus," Serial No. 724,947, filed of even date herewith. Reference is made to said application for a detailed description thereof. The method of making the tape is more particularly disclosed and claimed in my copending application, Serial No. 767,162, filed August 7, 1947, entitled "Method of making adhesive tape."

From the roller 70, the tape passes over the outside of the innermost roller 26 supported from the angle iron 23, thence over the innermost roller 29 supported from the angle iron 27, over the innermost roller 26 supported from the angle iron 22, the innermost roller supported from the angle iron 21, the innermost bar supported from the plates 30, the innermost roller supported from the angle iron 20, the next to the innermost roller supported from the angle iron 23, and is thus advanced counterclockwise over all the rollers within the cabinet 10. In the course of this advancement, the tape passes through the slot 45 in the partition wall 38 and finally emerges from the cabinet 10 through the slot 46 in the side wall 13, passing thereafter over the roller 47. During this advancement, the volatile constituents of the coating composition is evaporated off. For facilitating such evaporation, the present device is provided with air circulating and heating means described hereinbelow.

As shown in Fig. 1, there is mounted on top of the cabinet 10 a suction fan 75 driven by a motor 76 and connected through a curved conduit 77 with both cabinet compartments 35 and 36 (between the top wall 11 and the upper edge of the angle iron 15a) for removing from these compartments air containing vapor derived from the coating composition. Further, heating means are provided at the bottom of the cabinet 10 of any suitable or conventional type for heating the outer compartment 35 or for introducing hot air thereinto. By way of example, I have shown a heating device comprising a chest 80 extending lengthwise of the cabinet 10 over the bottom 12 thereof. The chest has its left-hand longitudinal side wall 81 pierced by a longitudinal horizontal slot 82. Further, the side wall 81 has attached thereto a longitudinal box-like member 83 communicating with the interior of the shaft 80 through the slot 82 and receiving air from open ended air pipes 84. The air passes from the member 83 through the slot 82 into and through the chest 80 and out from the chest 80 through a longitudinal slot 85 in the top wall of the chest at the right-hand side thereof. During this passage, the air is heated by a steam coil 86 having fins 87 attached thereto. Baffles 88 are provided between the turns of the steam coil.

It will be noted that in the apparatus of Figs. 1, 2 and 3, air is circulated through both compartments 35 and 36, but that only the outer compartment 35 is heated directly. The movement of the tape being from the middle of the cabinet through the inner compartment 36 and then through the outer compartment 35, the tape is first exposed to a drying atmosphere relatively less warm than the drying atmosphere to which the tape is subsequently exposed for final drying.

From the cabinet 10, the dried tape passes over the roller 47 to any suitable conventional reeling mechanism, for instance that shown in the drawings as supported by bracket means 90. More particularly, the tape may pass over rollers 91 and 92 supported from a standard 93 rising from the bracket 90, and thence over one roller 94 for winding up on a roll 95 rotatively supported by the roll 94 and another parallel roller 96 spaced slightly from the roll 94. The roller 96 is driven from a motor 97 by means including a speed reducer 98 and a belt and pulley system 99. The roller 94 is driven from the roller 96 by belt 100.

The reeling or winding up mechanism receiving the dried tape for forming the same into a roll, no matter of what construction, supplies the force for unwinding the tape 57 and 55 from the rolls 56 and 54 and for pulling the tapes 55 and 57 and the lamination produced therefrom through the apparatus of Figs. 1, 2 and 3.

In Fig. 4 I have shown another apparatus according to the present invention generally similar to that shown in Figs. 1, 2 and 3 but differing therefrom in having the tape to be dried moving from a coating device outside the drying cabinet and then clockwise along a convolute path through the cabinet to be wound up into roll form at the center of the cabinet. As shown in Fig. 4, this drying device includes an enclosed cabinet 110 slotted horizontally in the upper left side wall, as at 111. The front and rear walls are apertured, and the apertures are delimited by angle irons such as the one shown at 112. Angle irons 113 and 114 extend diagonally in the upper left and right corners, respectively, of the front and rear side walls. Other angle irons 115 and 116 extend diagonally, with respect to the windows or apertures defined by the angle irons 112, to points spaced approximately half way between the vertical side walls of the cabinet 110 and the angle iron 112. Other angle irons 117 and 118 extend diagonally with respect to the lower right and left hand corners of the cabinet 110, from points aligned vertically with the outer ends of the angle irons 115 and 116. The ends of the angle irons 115 and 117 as well as the ends of the angle irons 116 and 118 are joined, respectively, by vertically extending bars 119 and 120. The angle irons 113 and 114 and the bars 119 and 120 support a partition wall 125 subdividing the cabinet 110 into an outer chamber 126 and an inner concentric chamber 127.

Each of the angle irons 115, 116, 117 and 118 is provided with three bearings 130 accommodating the shafts of rollers 131. The angle iron 114 is provided with six bearings 132 for accommodating the shafts of rollers 133, while the angle iron 113 is provided with five bearings 135 for supporting the shafts on five rollers 136. As shown, the rollers of the angle irons 118 and 117 are disposed within the outer compartment 126, as are also the three outermost rollers of the angle irons 113 and 114. The rollers on the angle irons 115 and 116, the three innermost rollers on the angle irons 114 and the two innermost rollers supported from the angle iron 113 are disposed within the inner chamber 127. To space the upper horizontal runs of tape, I have provided, midway between the angle irons 113 and 114, a vertically extending bar 140 on each of the front and rear sides of the cabinet for supporting bars 141 extending transversely across the cabinet at the level of the rollers supported from the angle iron 114. For spacing the lower horizontal runs of tape, a vertical angle iron 142 is attached to each of the front and rear

walls of the cabinet and accommodates, in bearings 143, six rollers 144 of which the three upper rollers are offset downwardly with respect to the rollers on the angle irons 115 and 116 while the lower three rollers 144 are offset downwardly with respect to the rollers of the angle irons 117 and 118.

In the apparatus of Fig. 4, tape 150 unwound from the roll 151 is coated with adhesive from a distributor 152 and has superimposed thereon a permeable tape 153 unwound from a roll 154. The resulting structure (tape 150 coated with adhesive and having tape 153 superimposed upon the adhesive) passes through an adjustable tensioning device 155 serving to force the adhesive upwardly through the tape 153 and to form a distinct layer on top thereof. This laminating mechanism is essentially similar to that shown in Fig. 3 and described in detail in my said application filed of even date herewith. The whole laminating mechanism of Fig. 4 is supported from the left side wall of the cabinet 110 by means of the bracket 156. The laminate formed as described passes from the tensioning device 155 over a roller 157 supported from the left side wall of the cabinet 110 by bracket 158 provided with suitable bearing means at a level slightly below that of the tensioning device 155. From the roller 157, the laminate passes over roller 159 supported by a bracket 160 provided with suitable bearing means from the left side wall of the cabinet 110. From the roller 159, the laminate passes through the slot 111 into the outer chamber 126 of the cabinet 110, over the outermost roller supported from the angle iron 114 and then passes, in a clockwise direction, along a winding path over the three rollers supported from the angle iron 117, the three rollers supported from the angle iron 116, the three outermost rollers supported from the angle iron 113 and the two remaining rollers supported from the angle iron 114 within the chamber 126. Having made three complete turns around the outer chamber 126, the tape next passes through a slot 162 in the upper left-hand side wall of the partition 125 at the level of the innermost roller on the angle iron 113 within the chamber 126, to make two and a half turns about the middle of the cabinet within the inner chamber 127. As shown, the tape passes over the two innermost rollers on the angle iron 113, the three innermost rollers supported from the angle iron 114 and the rollers supported from the angle irons 115, 116 and 162. After leaving the innermost rollers on the angle iron 116, the tape passes over a roller 165 supported from the front and side walls of the cabinet by bracket means 166 provided with suitable bearing means. The roller 165 is disposed slightly above the innermost roller on the angle iron 115, to permit the advancement of the tape to a winding or reeling mechanism disposed in the middle of the cabinet and supported by suitable means, for instance, from the angle iron 112 and the other angle iron (not shown) defining the two apertures in the front and rear walls of the cabinet 110. More particularly, the reeling mechanism includes two spaced rollers 167 and 168 driven from a motor 169 by belt 170 and supporting therebetween a roll 171 on which the tape is wound up. It should be understood that any other suitable or conventional winding or reeling mechanism may be employed.

Drying of the tape is effected while the latter passes through the outer chamber 126 and the inner chamber 127. For this purpose, exhaust means are provided (not shown in the drawing) for evacuating the outer chamber 126 and the inner chamber 127. These means may be essentially similar to those shown in connection with the device of Figs. 1, 2 and 3. Air is admitted into the outer chamber 126 through an extended horizontal slot 175 in the bottom part of the rear wall. Hot air is provided for the inner chamber 127 by means including a chest 176 disposed on the bottom of the chamber 127. Air under pressure is admitted to this chest through air inlets 177 and circulated within the shaft around a steam coil 178 provided with fins 179, the air then being admitted into the inner chamber 127 in a manner essentially similar to that described in connection with the heating device of Figs. 1, 2 and 3.

It will be noted that both the embodiments of the present invention disclosed in detail hereinabove include means for coating or wetting one surface of a tape; means for winding up the coated or wetted tape after the same has been dried; drying means for said tape disposed about either the coating or wetting means or about the reeling means and arranged for advancing the wetted or coated tape repeatedly around either the coating or wetting means or around the reeling means; and means for spacing the horizontal runs of tape established in said drying means to prevent contact and adherence between the runs. Further, the drying means may be subdivided into a preliminary drying zone maintained at a lower temperature than a final drying zone.

Many details of construction and procedure may be varied within a wide range without departing from the principles of this invention and without sacrificing the advantages disclosed hereinabove, and it is, therefore, not my purpose to limit the patent granted on this invention otherwise than necessitated by the scope of the appended claims.

I claim as my invention:

1. Apparatus for drying tape comprising a cabinet, a partition wall within said cabinet subdividing said cabinet into first and second concentric compartments, means for flowing air through said compartment into which said tape is first introduced to effect initial partial drying of the same, means for flowing heated air through the second compartment to substantially complete the drying of pre-dried tape introduced therein from said first compartment, a plurality of rollers disposed within said cabinet transversely thereof over which said tape can be pulled along a path winding through said compartments about a central point in said cabinet, means for spacing opposed horizontal tape portions being advanced over said rollers to prevent contact and adherence of said opposed tape portions, and means operative to pull said tape over said rollers.

2. Apparatus for drying a wetted tape comprising an enclosed generally rectangular cabinet having two opposed side walls pierced by aligned windows, partition wall means subdividing said cabinet into concentric inner and outer compartments, means for introducing hot air into the outer compartment, suction means for withdrawing air from said two compartments, a plurality of rollers disposed within said cabinet transversely thereof at points falling on a spiral line originating from a central point within said cabinet, said rollers being distributed between said two compartments and being arranged as four series of rollers each extending diagonally with respect to said cabinet so that said tape can

be guided over said rollers to form a plurality of upper horizontal runs distributed between said two compartments, a plurality of lower horizontal runs distributed between said two compartments, a plurality of left-hand vertical runs distributed between said two compartments and a plurality of right-hand vertical runs distributed between said two compartments, said partition wall being slotted to permit one horizontal tape run to extend from said inner compartment to said outer compartment, said cabinet being slotted to permit one horizontal tape run to extend from said outer compartment to the outside of said cabinet, means for supporting said upper horizontal runs within said two compartments to prevent sagging of said runs and contact therebetween, roller means within said compartments for stretching said lower horizontal runs downwardly to prevent adherence therebetween, means for introducing a wetted tape into said inner compartment, and means outside said cabinet for forming the dried tape into a roll, said last mentioned means being operative to pull said tape through said apparatus.

3. Apparatus for drying a wetted tape comprising an enclosed generally rectangular cabinet having two opposed side walls pierced by aligned windows, partition wall means subdividing said cabinet into concentric inner and outer compartments, means for introducing hot air into the inner compartment, suction means for withdrawing air from said two compartments, a plurality of rollers disposed within said cabinet transversely thereof at points on a line winding about a central point within said cabinet and receding therefrom, said rollers being distributed between said two compartments and being arranged as four series of rollers each extending generally diagonally with respect to said cabinet so that said tape can be guided over said rollers to form a plurality of upper horizontal runs distributed between said two compartments, a plurality of lower horizontal runs distributed between said two compartments, a plurality of left-hand vertical runs distributed between said two compartments, and a plurality of right-hand vertical runs distributed between said two compartments, said partition wall being slotted to permit one horizontal tape run to extend from said outer compartment to said inner compartment, said cabinet being slotted to permit one horizontal tape run to extend from outside said cabinet into said outer compartment, means for supporting said upper horizontal runs within said two compartments to prevent sagging of said runs and contact therebetween, roller means within said compartments for stretching said lower horizontal runs downwardly to prevent adherence therebetween, means outside said cabinet for introducing said wetted tape into said outer compartment, and means within said inner compartment for forming the dried tape into a roll, said last mentioned means being operative to pull said tape through said apparatus.

4. Apparatus for drying a wetted tape comprising an enclosed cabinet, a partition wall dividing said cabinet into concentric compartments, a plurality of rollers disposed within said cabinet and extending transversely thereof over which said tape can be pulled along a path winding through said compartments about a central point within said cabinet, suction means for withdrawing air from said compartments including a suction fan, means for driving said fan and a conduit connecting said fan to each of said compartments, a vent in that compartment into which the tape is initially introduced for introducing air into said compartment to effect partial drying of the same, and means for introducing heated air into a second compartment to substantially complete the drying of the tape, said last-mentioned means including a conduit for supplying air, a heating element over which said air is passed to heat the same and means for introducing said heated air into said second compartment.

5. Apparatus for drying a wetted tape comprising an enclosed cabinet, a partition wall dividing said cabinet into concentric inner and outer compartments, a plurality of rollers disposed within said cabinet extending transversely thereof over which said tape can be pulled along a path winding through said compartments about a single point within said cabinet, suction means for withdrawing air from said inner and said outer compartments including a suction fan, means for driving said fan and a conduit connecting said fan to each of said compartments, a vent in said inner compartment open to the atmosphere for introducing air into said inner compartment to effect partial drying of the tape passing therethrough and means for introducing heated air into the outer compartment to substantially complete the drying of the tape from said inner compartment, said last-mentioned means including a conduit for supplying air, a heating coil over which said air is passed to heat the same and means for introducing the heated air into said outer compartment.

6. Apparatus for drying a wetted tape comprising an enclosed cabinet, a partition wall dividing said cabinet into concentric inner and outer compartments, a plurality of rollers disposed within said cabinet extending transversely thereof over which said tape can be pulled along a path winding through said compartments about a central point in said cabinet, suction means for withdrawing air from said compartments including a suction fan, means for driving said fan and a conduit connecting said fan to each of said compartments, a vent for said outer compartment open to the atmosphere for introducing air into said outer compartment into which the tape is initially introduced to effect partial drying of the same and means for introducing heated air into the inner compartment to substantially complete the drying of the tape passing therethrough from said outer compartment, said last mentioned means including a conduit for supplying air, a heating coil over which said air is passed to heat the same, and means for introducing said heated air into said inner compartment.

EDWARD J. CARTER.

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