[54] METHOD AND APPARATUS FOR APPLYING A JACKET TO AN ELONGATED BODY

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[57] ABSTRACT

The disclosure embraces a method of and apparatus for withdrawing tubular jacketing or organic film material from a supply and applying the withdrawn portion onto an elongated body such as a tubular fibrous duct involving expanding the withdrawn portion of the film material by differential pressure, inserting the elongated body in the withdrawn expanded portion, and equalizing the pressures to contract the withdrawn portion to snugly engage and encase the body.

17 Claims, 7 Drawing Figures
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METHOD AND APPARATUS FOR APPLYING A JACKET TO AN ELONGATED BODY

The invention relates to a method of and apparatus for encasing an elongated body, such as a substantially rigid tubular fibrous duct section, with a jacket of organic or plastic film by withdrawing tubular plastic film from a supply and expanding or stretching the withdrawn portion of tubular film, inserting the tubular body or fibrous duct section into the withdrawn expanded portion, and contracting the withdrawn portion to snugly engage the exterior of the body or duct section. Tubular duct sections of this character may be utilized in air duct systems for conveying air in both air heating and air cooling systems.

Rigid fibrous duct sections have been heretofore fashioned by inserting a mass of binder-impregnated fibers in a mold, curing the binder and applying a cloth cover by wrapping the cloth around the molded section. Cloth coverings are of porous character and do not function as moisture barriers. As a cloth covering is porous, permitting the circulation of air through the cloth, the insulating value of such construction is greatly reduced.

Rigid fibrous ducts have heretofore been encased in heat-shrinkable film material, a construction which has not proven to be entirely satisfactory particularly where the duct is used or stored in a high or low temperature environment. When a body encased in a heat-shrinkable jacket is used in high temperature areas the jacket continues to shrink, increasing the liability of the jacket to tear or split. When a heat-shrinkable jacket is subjected to a low temperature environment it tends to become brittle, increasing the liability of the material to split or fracture.

The present invention embraces a method of applying to an elongated body a tubular jacket of material of a character which may be expanded or stretched by differential pressures, withdrawing a portion of the jacketing material from a supply of the material, expanding the withdrawn portion, telescoping the expanded withdrawn portion of the jacketing material and elongated body to dispose the jacket around the body, equalizing the pressures to contract the jacket into intimate engagement with the tubular body, and severing the withdrawn portion of the elongated body from the supply.

Another object of the invention resides in a method of encasing a tubular body within a tubular jacket of comparatively thin film material wherein the film is withdrawn from a supply roll of the tubular film in flattened condition and reduced pressure established in a chamber containing the withdrawn film to expand the tubular film, inserting a tubular body into the expanded film and equalizing the pressure to contract the expanded film into intimate engagement with the body.

Another object of the invention is the provision of an apparatus for applying a tubular film to a tubular body including a chamber adapted to contain an expandable tubular film, the arrangement embodying means for establishing reduced pressure in the chamber to expand the film in conjunction with means for limiting the expansion of the film to provide clearance whereby the film and the tubular body may be telescoped together, and the chamber vented whereby the film is contracted into intimate engagement with the tubular body.

Further objects and advantages are within the scope of this invention such as relate to the arrangement, operation and function of the related elements of the structure, to various details of construction and to combinations of parts, elements per se, and to economies of manufacture and numerous other features as will be apparent from a consideration of the specification and drawing of a form of the invention, which may be preferred, in which:

FIG. 1 is an isometric view of an arrangement for performing the steps in the method of the invention;
FIG. 2 is a longitudinal vertical sectional view of the arrangement illustrated in FIG. 1;
FIG. 3 is a detail sectional view taken substantially on the line 3—3 of FIG. 1;
FIG. 4 is an isometric view of a tubular fibrous body of a character adapted to receive a jacket;
FIG. 5 is an enlarged view, partly in section, illustrating the jacket in contracted condition on a tubular body;
FIG. 6 is a fragmentary longitudinal sectional view illustrating a modified arrangement for performing steps in the method of the invention, and
FIG. 7 is an end view of the arrangement shown in FIG. 6.

While the method of the invention is illustrated in applying expandable tubular jacketing material onto a tubular fibrous body or duct section of a character particularly usable in air conveying systems for heating and cooling, it is to be understood that the method of the invention may be utilized for applying expandable tubular jacketing material to other elongated bodies.

Referring to the drawings in detail, FIGS. 1 through 3 illustrate an apparatus or arrangement for the performance of method steps in applying expandable tubular jacketing material, such as an impervious organic film, onto substantially rigid tubular fibrous bodies or duct sections. The method is particularly usable for applying an impervious jacket of expandable organic film onto a tubular duct section 10, preferably of fibrous material, having ship lap ends, one end 12 being a male end and the other a female end 14 as illustrated in FIGS. 2, 4 and 5.

FIG. 5 illustrates the fibrous body or duct section 10 encased in a covering, jacket or film 16 applied to the body or duct section 10 through the use of the method and apparatus of the invention. The duct section 10, as illustrated, is of circular cylindrical configuration and is fashioned of mineral fibers, for example, glass fibers, compressed to a density in a range of 2 to 16 pounds or more per cubic foot providing a tubular duct section of substantially rigid character, the fibers of the duct being bonded together by a suitable resin such as phenolformaldehyde.

It is to be understood that while a body or duct of circular cross section is illustrated, the method and apparatus may be utilized for applying jacketing or film material to bodies of other cross sectional configuration such as square, hexagonal or the like. The apparatus or arrangement is inclusive of a means, housing or enclosure, preferably of rectangular cross section providing a chamber mounted upon support means or members 21. In the embodiment illustrated, the closure or housing 18 comprises a floor or bottom wall 23, a rear end wall 24, a front end wall construction 25, side walls 26 and a top or cover member 27.

The enclosure 18 may be fabricated of wood, sheet metal or other suitable material. The top or cover member 27 in the embodiment illustrated is secured to
the side walls by screws 28 or other suitable means. The housing 18, providing the chamber 20, is substantially fluid tight or air tight in order that reduced pressure may be established in the chamber 20. In the embodiment illustrated, a suction blower 30 is provided having a tubular portion 31 extending through an opening 32 in the floor or bottom wall 23. The suction blower is of conventional construction and is driven by an electrically energizable motor 33.

Operation of the suction blower 30 exhausts air from the chamber 20 through the tubular portion 31 to establish subatmospheric or reduced pressure in the chamber 20. The end construction 25 for the forward end of the enclosure 18 includes a member 36 which has an opening 37. An end plate or member 38 is secured to the end member 36 by screws 39 or other suitable means. A sealing gasket 41 is disposed between the plate 39 and the housing end member 36 to form an air tight joint.

The end plate 38, which is preferably of metal, is fashioned with an opening which accommodates a tubular guide means or member 43. The portion of the member 43 within the chamber 20 is of foraminous construction having a plurality of openings or holes 45 as particularly shown in FIG. 2. The portion 46 of the tubular member 43 exteriorly of the plate 38 is unperforated as shown in FIG. 1. The plate 38 is welded or otherwise joined with the member 43 to form a fluid or air tight connection, the plate 38 supporting the tubular member 43.

Support means is provided for mounting a supply roll 48 of the tubular jacketing or film material 16 in flattened condition for covering the tubular bodies or duct sections 10. In the arrangement shown in FIGS. 1 and 2, the supply roll is equipped with a shaft or mandrel 50, the supply roll 48 being disposed interiorly of the chamber 20. Disposed in the chamber 20 are upwardly extending members or support means 52 which may be secured to the side walls 26. The upper end region of each of the members 52 is provided with a slot 54 adapted to receive the shaft 50, the members 52 supporting the supply roll 48 of film material 16.

Secured to the cover 27 by hinges or hinge members 58 is an access door or movable closure 56, the hinged cover or closure 56 being preferably provided with a hand grip or knob 60 for manipulating the closure 56. The provision of the access door or closure 56 enables the removal of the empty mandrel and the insertion of a supply roll of tubular jacketing or film material in flattened form. The housing 18 is preferably provided with means for venting the chamber to equalize the pressure in the chamber in order to effect a contraction of an expanded portion of film material withdrawn from the supply roll about a duct section or fibrous body.

The housing cover 27 may be fashioned with a vent opening 62 and a valve or closure 63 provided for the vent opening. The closure member 63 is pivoted for movement about a shaft or pin 64 to open and close the vent 62. A manipulating knob or member 65 is secured to the valve or closure 63 for manipulating the closure. Disposed adjacent the open end of member 43 adjacent the plate 38 is a cradle or member 67 mounted on a support means 68, the cradle being adapted to receive and support a jacketed body or duct section when the same is withdrawn from the tubular means or guide 43.

The operation and functioning of the apparatus illustrated in FIGS. 1 through 3 in applying a jacket or film material to an elongated fibrous body or duct section is as follows: Assuming a start-up operation, the access door 56 is opened and a supply roll 48 of film or jacket material 16 is carried by a mandrel or shaft 50 disposed with the end regions of the shaft 50 received in the slots 54 in the members 52. With the access door 56 open, the operator then manually withdraws some of the film 16 from the supply roll 48 and inserts the film into the tubular member 43.

The operator then closes the access door 56 and reaching in the open end of member 43 exteriorly of the chamber 20 grasps the film and withdraws it until the distal end of the film extends slightly beyond the distal end of the portion 46. The operator then folds a short length of the film 16 over the exterior end region of portion 46, the folded portion of the film indicated at 70. The folding of film material at the region 70 establishes a snug sealing engagement between the folded portion 70 of the film and the end region 46 of the member 43.

It is found that ordinarily a seal is established between the folded portion 70 and the portion 46 but, if desired, a securing collar or member 72 having a tapered interior configuration 73 may be telescoped over the folded end region 70 of the film to assure a sealing engagement. With the member 63 in a position closing the vent opening 62, the suction blower member 33 is energized whereby the suction blower 30 exhausting air from the interior of chamber 20 establishing a reduced pressure or partial vacuum in the chamber 20.

As the end region 70 of the film 16 is in sealing engagement with the end portion 46 of the member 43, the atmospheric pressure existent in the interior of the withdrawn portion of the film or jacketing material 16 is effective to expand the withdrawn portion into snug engagement with the interior surface area of the perforated guide member 43, the withdrawn portion of the film being limited in its expansion by the member 43. The operator then telescopes a fibrous body or duct section 10 into the expanded tubular film until the outer end of the duct section 10 is substantially within the portion 46.

The operator may then vent the chamber 20 to equalize or normalize the pressure in chamber 20 approaching atmospheric pressure by either of two methods, by opening the member 63 so that the chamber 20 is vented to the atmosphere through the vent openings 62, or by removing the collar 72 if the same is used, and unfolding the portion 70 and manually breaking the seal by pulling the unfolded portion out of engagement with the portion 46 of the tubular member 43 to permit atmospheric air to flow in between the film material 16 and the perforated region of the member 43 so that air flow through the perforations 45 substantially equalizes or normalizes the reduced pressure in the chamber 20.

Upon the equalization or increase in pressure in the chamber 20, the portion of the film material 16 withdrawn from the supply and surrounding the duct section or body 10 is contracted into snug contiguous engagement with the exterior of the fibrous body or duct section 10. The operator then withdraws the jacketed or film-covered body or duct section from the tubular member 43 into the cradle 67 until the inner end of the body or duct section is beyond the unperforated end portion 46 of the member 43. The end region of the film material 16 is then severed by a severing instrumentality 75 such as an electrically heated implement.
by fusing the film or the film may be severed by a cutting implement or other suitable severing means. The fibrous body or duct encased within the jacketing material or film 16 is illustrated in FIG. 5, the end regions 70 of the film extending beyond the ends of the body or duct section being folded inwardly, as shown in FIG. 5. The operation of withdrawing the film-encased duct from the tubular member 43 effects a withdrawal of an additional portion of the jacket or film material 16 from the supply roll 48, the withdrawn portion being slightly longer than the tube 43.

When the film adjacent the end of the film-encased duct is severed by the severing instrument 75, the amount of film material equal to the folded portion 70 extends beyond the end of the portion 46 of the tube 43. After severing the film, the portion 70 of the withdrawn film is folded into the position illustrated in FIG. 2 so that a seal is established at the region of the folded portion 70 with the portion 46 of the tube 43. As the chamber 20 is vented through the perforations or openings 45 during the withdrawal of a jacketed or film-encased body or duct section, the chamber 20 approaches atmospheric pressure even though the suction blower 30 is still in operation.

When the operator folds the end region 70 of the film into the configuration shown in FIG. 2, a seal is established at this region preventing further flow of atmospheric air in the peripheral region between the withdrawn portion of the film 16 and the tube 43 and the withdrawn portion of the film or jacketing material 16 is expanded by reason of the differential or reduced pressure in the chamber 20 and the atmospheric pressure existent within the withdrawn portion of the film or jacket material.

The operator then repeats the above-described cycle of operations but without having to initially manually insert the film material from the roll 48 as the withdrawal of the film-encased or jacketed duct effects the withdrawing of the film material as a casing or jacket for the succeeding duct section to be inserted in the expanded withdrawn portion of the film material.

The expandable film material may be a vinyl film such as a film of vinyl chloride-acetate copolymer or a polyvinyl chloride. A vinyl film is preferred but a film of polyethylene or chloropropylene or other suitable expandable resinous plastic material may be used as a jacket or casing material for the fibrous body or duct sections.

In reference to the method of venting the chamber 20 in order to contract the withdrawn film into snug engagement with the fibrous body or duct section, it has been pointed out that the seal may be broken by unfolding the film portion 70 or by opening the vent or vent closure or valve 63. The reduced pressure in the chamber may be normalized by deenergizing the blower motor 33 whereby the chamber 20 would be vented through the air entrance of the suction blower.

The arrangement of the removable plate 38 and tube 43 welded or otherwise joined with the plate renders the apparatus usable for jacketing or encasing fibrous bodies or duct sections of different diameters. By employing an assembly of a tube 43 of different diameter welded or joined with a plate 38, an assembly of the tube 43 and plate 38 may be removed by removing the screws 39 and replaced by an assembly of a tube 43 of different diameter welded or joined to a different plate 38. The opening 37 in the end wall 36 is of larger diameter than the largest tube 43 that may be employed with the apparatus so that tubes 43 of various diameters may be employed without any other change being made in the apparatus.

FIGS. 6 and 7 illustrate a modified form of apparatus for performing the method steps of the invention. In this form a means is provided for supporting the supply roll of jacketing or film material outside of the housing or chamber in which the body or duct encasing operations are performed, the arrangement including sealing means at the region of feeding the jacketing or film material into the interior of a foraminous tubular means or member in the chamber. The arrangement shown in FIGS. 6 and 7 is inclusive of an elongated cylindrically shaped housing 80 fashioned of metal or other material having a rear end wall 82 and an outwardly extending flange 83 adjacent the other end of the housing.

The housing 80 is mounted upon suitable support means or supports 84 and 85 adjacent the respective ends of the housing. A suction blower 30' has a tubular portion 31' extending into an opening 32' in the wall of the housing 80, the suction blower being employed for exhausting air from the chamber 87 provided by the housing, the blower being driven by an electrically energizable motor 33'. A plate 89 providing a forward end wall for the housing 80 is secured to the flange 83 by removable screws 90, a sealing gasket 92 being disposed between the flange 83 and the plate 89.

The plate 89 is provided with an opening receiving an end region of a tube or tubular member 94, the plate being welded or otherwise secured to an unperforated portion 95 of the tube 94 extending a short distance through the opening in the plate 89. The portion of the tube 94 disposed within the chamber 87 is provided with a large number of perforations, openings or orifices 97 as illustrated in FIG. 6. In the arrangement shown in FIG. 6, the tubular member or tube 94 extends full length of the chamber 87, the end of the tube 94 adjacent the end wall 82 engaging a sealing gasket 98 disposed between the end of the tube and the end wall 82.

The housing 80 may be provided with vent means for venting the chamber 87 to contract a withdrawn portion of film material onto a fibrous body or duct section. Secured to the housing 80 and opening into the chamber 87 is a tubular means or pipe 100 equipped with a manually operable slide valve means or movable closure 102 of conventional construction for closing or opening the passage in the tubular means or pipe 100, the pipe being vented to the atmosphere.

Means is disposed adjacent the housing 80 for supporting a supply of tubular jacketing or film material. Disposed adjacent the housing support 84 is a support means comprising two transversely-spaced upwardly-extending members 104, one of which is shown in FIG. 6, the upper end of each of the members 104 being provided with a slot 106, the slots receiving a shaft 50' which mounts a supply roll 48' of tubular plastic film material 16'. The tubular material 16' in the roll is in flattened condition.

The end wall 82 of the housing 80 is provided with an opening 108 defined by a rectangularly-shaped portion 110 projecting rearwardly of the wall 82. Disposed in the open region 108 is a pair of rolls 112, each roll being mounted upon a shaft 114 journaled for rotation in openings in the side walls 115 of the rectangular projecting portion 110. The rolls 112 are preferably fish-
tioned of resilient material such as semihard rubber or resilient plastic or resinous material, the tubular film material 16' in flattened condition being advanced between the rolls 112. Through the utilization of rolls 112 of rubber-like or resilient material, the regions of the rolls at each side of the tubular flattened film 16' are in engagement thereby providing a seal adjacent each edge region of the flattened film material. Secured to the end region of the rectangular projection 110 is a member 118 having a rectangular opening 120 to admit the passage of the film material 16' to the rolls. The member 118 is of flexible material, such as thin sheet metal, flexible plastic material or the like whereby portions 121 of the flexible member 118 are configured to have wiping contact or engagement with the surfaces of the rolls 112 to provide a sealing means.

The operation and functioning of the form of apparatus illustrated in FIGS. 6 and 7 in applying jacket or film material to elongated fibrous bodies or duct sections are substantially the same as the operation and functioning of the apparatus illustrated in FIGS. 1 through 3. At a start-up operation, the operator manually feeds the tubular flattened film material 16' through the sealing rolls 112 and draws the film material lengthwise through the tube 94 and folds the end portion 70' over the end region of the unperforated portion 95 of the tube 94 to establish a seal between the end region of the film and the portion 95.

If desired, a collar 72' may be engaged with the folded portion 70' as shown in FIG. 6 to assure a sealing engagement of the film material with the tubular portion 95. The sleeve or member 102 is moved to a position closing the vent tube 100. The suction blower 30' is energized and air exhausted from the interior of the chamber 87 establishing a reduced pressure or partial vacuum in the chamber 87.

As the end region 70' of the film 16' is in sealing engagement with the tubular portion 95, the atmospheric pressure existent in the interior of the withdrawn portion of the film or jacketing material 16' is effective to expand the withdrawn portion into snug engagement with the interior surface area of the perforated tube or tubular means 94 as illustrated in FIG. 6, the tube 94 limiting the amount of expansion of the withdrawn portion of the film 16'.

With the film material 16' expanded or stretched to the extent limited by the tube 94, the operator tele-scopes or inserts a fibrous body or duct section 10' into the expanded tubular film until the outer end of the body or duct is adjacent the portion 95 so that when the portion 70' of the film material is unfolded, it will overlie the end of the body or duct section. The operator then vents the chamber 87 to substantially equalize or normalize the pressure in the chamber 87 approaching atmospheric pressure.

The venting of the chamber may be accomplished by de-energizing the blower motor 33', or by opening the slide valve 102 so that the chamber is vented through the tube 100, or the chamber vented by removing the collar 72' if the same is used, and unfolding the portion 70', the operator then manually breaking the seal by pulling the unfolded portion to disengage the film 16' from the unperforated portion 95 permitting atmospheric air to flow between the film material 16' and the perforated region of the member 94 and through the perforations 97 to substantially equalize or normalize the pressure in the chamber 87.

Upon the equalization or increase in pressure in the chamber 87, the portion of the film material 16', withdrawn from the supply and surrounding the duct section or body 10, is contracted into snug, contiguous or intimate engagement with the exterior of the body or duct section 10'. The operator then withdraws the jacketed or film-encased body or duct section from the tubular member 4 as hereinbefore described in reference to the operation of the apparatus shown in FIGS. 1 through 3, and the film severed to provide a small length of film for folding over the end of the duct in the manner illustrated in FIG. 5.

The operation of withdrawing the film-encased duct 10' from the tubular member 94 simultaneously effects a withdrawal of an additional portion of the jacket or film material 16' from the supply roll 48', the withdrawn portion of the film being slightly longer than the tube 94 and its unperforated portion 95. The cycle of operations or method steps is then repeated in applying a jacket or tubular film to a succeeding fibrous body or duct section.

It is apparent that, within the scope of the invention, modifications and different arrangements may be made other than as herein disclosed, and the present disclosure is illustrative merely, the invention comprehend all variations thereof.

We claim:

1. The method of encasing an elongated tubular body with expandable tubular jacketing material including withdrawing from a supply a portion of the tubular material in a chamber, establishing reduced pressure in the chamber exteriorly of the withdrawn portion of the tubular material to expand the withdrawn portion, inserting the tubular body lengthwise into the expanded withdrawn portion of the material, and increasing the pressure in the chamber contracting the withdrawn portion of the material into intimate engagement with the periphery of the body.

2. The method according to claim 1 including the steps of moving the jacket-encased body lengthwise out of the chamber thereby withdrawing a portion of the film from the supply, and severing the jacket encasing the fibrous body from the portion withdrawn from the supply by the lengthwise movement of the jacket-encased body.

3. The method of encasing a tubular fibrous body with an expandable tubular film including withdrawing from a supply a portion of tubular film in a chamber, establishing reduced pressure in the chamber exteriorly of the withdrawn portion of the tubular film to expand the portion, limiting the expansion of the tubular film, inserting the tubular fibrous body lengthwise into the expanded tubular withdrawn portion, and increasing the pressure in the chamber contracting the withdrawn portion of the film into intimate engagement with the periphery of the fibrous body.

4. The method of encasing a tubular fibrous body with an expandable tubular film including withdrawing from a supply a portion of tubular film in a chamber, exhausting air from the chamber establishing a partial vacuum in the chamber exteriorly of the withdrawn portion of the tubular film to expand the withdrawn portion, limiting the expansion of the withdrawn portion, inserting the tubular fibrous body lengthwise into the expanded tubular withdrawn portion, and venting
the chamber contracting the withdrawn portion of the film into intimate engagement with the periphery of the fibrous body.

5. The method of encasing an elongated tubular body with an expandable tubular film including advancing the tubular film lengthwise in a walled chamber from a supply of the tubular film in a flattened condition, establishing a seal of the open end region of the film with the chamber at the region of an opening in the chamber wall, establishing reduced pressure in the interior of the chamber to expand the portion of the tubular film advanced from the supply, limiting the expansion of the tubular film, inserting the tubular body through the open end of the tubular film into the expanded tubular film, and increasing the pressure in the chamber to contract the film into intimate engagement with the periphery of the tubular body.

6. The method according to claim 5 including the steps of moving the film-encased fibrous body lengthwise out of the chamber and thereby withdrawing a portion of the film from the supply, and severing the film encasing the fibrous body from the portion withdrawn from the supply by the lengthwise movement of the film-encased body.

7. The method of encasing a tubular fibrous body with an expandable tubular film including advancing the tubular film lengthwise in a chamber and through an opening in the chamber wall from a supply roll of the film, establishing a fluid-tight seal of the open end region of the film with the chamber adjacent the opening, exhausting air from the interior of the chamber to expand the portion of the tubular film to an enlarged cross sectional area, inserting the fibrous body lengthwise into the expanded film, increasing the pressure in the chamber to contract the film into intimate engagement with the periphery of the fibrous body, withdrawing the film-encased body from the chamber, and severing the film adjacent the end region of the body.

8. The method of encasing a tubular fibrous body with an expandable tubular film including withdrawing the tubular film lengthwise in a chamber from a supply roll of the film and through an opening in the chamber wall, establishing a seal of the open end region of the film with the chamber adjacent the opening, exhausting air from the interior of the chamber to expand the withdrawn portion of the tubular film, inserting the fibrous body lengthwise into the expanded film, increasing the pressure in the chamber to contract the film into intimate engagement with the periphery of the fibrous body, removing the film-encased body from the chamber, and severing the film adjacent the end region of the removed body.

9. The method of encasing a tubular fibrous body with an expandable tubular film including withdrawing the tubular film lengthwise in a walled chamber from a supply roll exteriorly of the chamber, establishing a seal of the open end region of the film with the chamber adjacent an opening in a wall of the chamber, exhausting air from the interior of the chamber to expand the withdrawn portion of the tubular film, inserting the fibrous body lengthwise into the expanded film, increasing the pressure in the chamber to contract the film into intimate engagement with the periphery of the fibrous body, moving the film-encased body lengthwise out of the chamber and thereby withdrawing a portion of the film from the supply roll into the chamber, and severing the film from the supply adjacent the end region of the film-encased body.

10. Apparatus of the character disclosed, in combination, means providing a chamber, means supporting a supply of expandable tubular jacketing material, a tubular foraminous member disposed in said chamber and terminating adjacent an opening in a wall of the chamber, said tubular member adapted to receive jacketing material withdrawn from the supply, and means effecting varying pressures in the chamber to expand the withdrawn portion of the jacketing material to receive a body to be encased in the jacketing material and to contract the jacketing material about the body.

11. The apparatus according to claim 10 including means for severing the jacketing material adjacent an end of the encased body after the encased body is withdrawn from the tubular member.

12. Apparatus of the character disclosed, in combination, means providing a chamber, means supporting a supply of expandable tubular jacketing material, a tubular foraminous member disposed in said chamber, said tubular member adapted to receive jacketing material withdrawn from the supply, means establishing differential pressure in the chamber effective to expand the withdrawn tubular jacketing material to receive a body within the expanded material, and means reducing the effectiveness of the differential pressure to contract the jacketing material into encasing engagement with the body.

13. Apparatus of the character disclosed, in combination, means providing a walled chamber, means supporting a supply of expandable tubular jacketing material in flattened condition, a plate providing an end wall of the chamber, tubular means disposed in the chamber and extending through an opening in the plate, the wall region of the tubular means within the chamber having a plurality of openings therein, said tubular means adapted to receive jacketing material withdrawn from the supply, means for establishing reduced pressure in the chamber to expand the withdrawn tubular jacketing material into engagement with the interior surface of the tubular means whereby a body may be inserted within the expanded material, means effective to normalize the pressure in the chamber to contract the jacketing material into encasing engagement with the body, and means for severing the jacketing material from the supply at a region adjacent the end of the jacketed body after the same is withdrawn from the tubular means.

14. The combination according to claim 13 including removable means for securing the plate to the chamber whereby to accommodate plates equipped with tubular means of different sizes for applying jacketing material to bodies of different sizes.

15. Apparatus of the character disclosed, in combination, a housing providing a chamber, a supply of expandable tubular jacketing material disposed exteriorly of the chamber, a rear wall of said housing having an opening through which the tubular jacketing material is advanced from the supply into the chamber, sealing means engaging the jacketing material to seal the entrance in the chamber at the region of the jacketing material, a tubular member in the chamber adapted to receive the tubular jacketing material, said tubular member terminating adjacent an opening in the front wall of the chamber, said tubular member being sealingly engaged with the front wall, said tubular member having
a perforated wall, means for exhausting air from the chamber to expand the jacketing material within the tubular member to receive a body to be encased in the jacketing material, and means effective to normalize the pressure in the chamber to contract the jacketing material about the periphery of the body.

16. The combination according to claim 15 wherein the sealing means adjacent the entrance of the jacketing material into the housing comprises rolls engaging the jacketing material, and means mounted by the housing in sealing engagement with the rolls.

17. The combination according to claim 15 including means for venting the chamber, and movable valve means for opening and closing the venting means.

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